

1894.

NEW SOUTH WALES.

VOTES

AND

PROCEEDINGS

OF THE

LEGISLATIVE ASSEMBLY

DURING THE SESSION

OF

1894,

WITH THE VARIOUS DOCUMENTS CONNECTED THEREWITH.

IN THREE VOLUMES.

VOL. III.

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1894.

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LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

VOTES AND PROCEEDINGS.

SESSION 1894.

(IN THREE VOLUMES.)

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1893.

NEW SOUTH WALES.

NEW SOUTH WALES GOVERNMENT RAILWAYS AND
TRAMWAYS.

(ANNUAL REPORT OF RAILWAY COMMISSIONERS, YEAR ENDING 30TH JUNE, 1893.)

Presented to Parliament, pursuant to Act 51 Vic. No. 35.

Offices of the Railway Commissioners of New South Wales,
Sydney, 5th August, 1893.TO THE HONORABLE THE MINISTER OF RAILWAYS,—
SIR,

In accordance with the provisions of the 45th clause of the Railways Act of 1888, 51 Vic. No. 35, we have the honor to present, for the information of Parliament, our Annual Report upon the working of the Railways and Tramways for the year ending June 30th, 1893.

GENERAL REMARKS.

We have recently inspected the whole of the Railway lines and works, and beg to report that the property has been still further improved during the past year out of working expenses.

The year has been one of exceptional anxiety and difficulty in consequence of the great financial disturbance which has affected the colonies, and also in a smaller measure owing to the drought in the far west at the beginning of the season, and floods in the Hunter River district during the month of March last.

The financial result for the year may be stated shortly as follows:—

Total traffic, Railways and Tramways	... ..	£3,222,423
Total expenditure, Railways and Tramways	... ..	1,972,324

Net return after paying working expenses... £1,250,099

being an increase in net profit over last year of £556, and making an accumulated increase in net profits paid into the Treasury during the past five years of £1,724,126.

From this sum must be deducted £150,000, two instalments of £75,000 each, towards paying off the £1,000,000 vote under Act 53 Vic. No. 24, for reconstruction and improvement of rolling-stock and permanent-way, which fell due up to the 31st December last; after deducting this amount the Treasury will still have received £1,574,126 increased net earnings during the past five years. The

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[1,465 copies—Approximate Cost of Printing (labour and material), £240 9s. 6d.]

The following tables will show the progress and result of the Railway and Tramway working for the seven years prior to our taking office, and for the period we have had the administration of the property :—

RAILWAYS.

Year.	Length of Line opened.	TOTAL EARNINGS.	ACCUMULATED INCREASES. TOTAL EARNINGS.	NET EARNINGS after paying Working Expenses.	NET EARNINGS.	Capital expended on Lines open.
	Miles.	£		£		£
1882	1,268	1,701,016	} INCREASE ON 1882 TRAFFIC, £2,668,164.	763,661	} ACCUMULATED DECREASE ON 1882 RESULT, £141,656.	15,843,616
1883	1,320	1,934,694		751,220		16,905,014
1884	1,618	2,089,749		786,010		20,080,138
1885	1,732	2,178,172		717,555		21,881,276
1886	1,880	2,163,803		668,577		24,071,454
1887	2,036	2,212,718		752,375		26,532,122
1888	2,114	2,295,124		764,573		27,722,748
1889	2,171	2,538,477	} INCREASE ON 1888 TRAFFIC, £2,704,716.	903,875	} ACCUMULATED INCREASE ON 1888 RESULT, £1,572,895.	29,839,167
1890	2,182	2,633,086		967,251		30,555,123
1891	2,182	2,974,421		1,143,050		31,768,617
1892	2,185	3,107,296		1,193,044		33,312,608
1893	2,351	2,927,056		1,188,540		34,657,571

Camden and Sans Souci Tramways included in this statement.

TRAMWAYS.

Year.	Length of Line.	TOTAL EARNINGS.	ACCUMULATED INCREASES. TOTAL EARNINGS.	NET EARNINGS after paying Working Expenses.	NET EARNINGS.
	Miles.	£		£	
1882	22	126,202	} INCREASE ON 1882 TRAFFIC, £569,046.	23,066	} ACCUMULATED DECREASE ON 1882 RESULT, £52,281.
1883	25	190,699		11,822	
1884	27½	219,942		4,775	
1885	27½	223,340		15,345	
1886	29	230,410		23,957	
1887	38½	225,318		12,893	
1888	38½	236,519		17,323	
1889	38½	243,563	} INCREASE ON 1888 TRAFFIC, £223,237.	21,728	} ACCUMULATED INCREASE ON 1888 RESULT, £151,231.
1890	39½	268,962		44,889	
1891	42½	292,850		53,171	
1892	48	305,090		56,499	
1893	49	295,367		61,550	

RAILWAYS.

The length of line open for traffic in July, 1892, was 2,278 $\frac{1}{4}$ miles. Since that date the following lines have been opened:—

	Miles.	Date of Opening.
Culcairn to Corowa	47 $\frac{1}{2}$	3rd October, 1892.
Milson's Point Extension	2 $\frac{3}{4}$	1st May, 1893.
Kiama to Nowra	22 $\frac{1}{2}$	3rd June, 1893.

Making a total of 2,351 miles at present in use.

The following lines will be opened before the close of the year:—

	Miles.	Expected Date of Opening.
Cootamundra to Temora	39	1st September.
Molong to Parkes and Forbes	72 $\frac{3}{4}$	1st November.

The following lines are also under construction:—

	Miles.
Lismore to The Tweed... ..	62 $\frac{1}{2}$
Marrickville to Burwood Road	5

The cost of the lines open for traffic on the 30th of June amounted to £34,657,571.

To meet this expenditure £29,210,480 has been raised by the issue of debentures and other stock, the balance having been provided out of the general funds of the Colony and by 'Treasury Bills.

Debentures of the value of £1,201,075 have been finally paid off.

The total cost of the lines upon which interest has to be paid, after deducting debentures finally paid off, is £33,456,496.

The revenue derived from working the lines during the year was £2,927,056, and the expenses amounted to £1,738,516, or 59.39 per cent. of the gross revenue, leaving a net revenue of £1,188,540 towards paying interest upon capital, or a return of 3.48 per cent. upon the total cost of the railways open for traffic.

The percentage the working expenses bear to the gross revenue shows a decrease of 7.30 per cent. since 1888.

The details of the revenue and working expenditure will be found in the Appendices, Nos. 4 to 7, pages 20 to 23.

The Railway revenue shows a decrease of £180,240; this is principally attributable to four causes, viz.:—

- (1) The exceptional financial disturbance.
- (2) February this year having only twenty-eight days as against twenty-nine (leap-year) in 1892.
- (3) Serious floods in the North in March last, causing the main Northern Line to be closed against through traffic for eight days.
- (4) Drought and ravages of rabbits in the Cobar and far Western districts.

Of this sum the Coaching traffic is responsible for £74,189, the 1st class Passenger traffic having decreased by £45,534 and the 2nd class by £14,736. The number of passenger journeys made increased by 13,787.

The

The revenue derived from the Goods Department shows an aggregate decrease of £106,051, the main items of decrease being General Merchandise, £45,486; Coal, £14,996; Other Minerals, £25,260; and Wool, £13,302.

The train miles run were 7,505,310, being a decrease of 850,786. The passenger train service was not curtailed to any appreciable extent, a saving of 15,307 miles only having been made in this direction.

The earnings per train mile show satisfactory results, every mile run having earned 7s. 9½d., as compared with 7s. 5¼d. in the preceding year. The expenditure per train mile has increased from 4s. 7d. to 4s. 7½d., leaving a net earning of 3s. 2d., as against 2s. 10¼d. last year, and 2s. 3½d. in 1888, being an increased net profit since 1888 of 10½d. per train mile.

The increased net profit of 10½d. per train mile on the 7,505,310 miles run during the year represents a sum of £328,357.

The following table, giving the earnings per mile of railway open, gross and net earnings per train mile, and the total and net earnings for all lines for the past nine years, shows the steady improvement in the net value of the property:—

Year.	Year ending	Average miles open.	Per Mile open.		Train Miles run.	Earnings per Train Mile.		Total Earnings.	
			Gross Earnings.	Net Earnings.		Gross Earnings.	Net Earnings.	Gross.	Net, after paying working expenses.
1885 ..	Dec..	1,663½	£ 1,307	£ 431	6,638,309	s. d. 6 6½	s. d. 2 1¾	£ 2,178,172	£ 717,555
1886 ...	"	1,790	1,207	373	6,479,265	6 8	2 0¼	2,163,803	618,577
1887 ..	"	1,935½	1,141	388	6,472,107	6 9¼	2 3¼	2,212,718	752,375
1888 ...	Junc..	2,044	1,123	374	6,689,313	6 10¼	2 3½	2,205,124	764,573
1889 ...	June..	2,128	1,193	425	7,611,769	6 7¼	2 4¼	2,538,477	903,875
1890 ...	"	2,177	1,210	444	8,008,826	6 6¼	2 5	2,633,086	967,251
1891 ...	"	2,182	1,363	524	8,410,421	7 1	2 8¼	2,974,421	1,143,050
1892 ...	"	2,182½	1,423	546	8,356,096	7 5¼	2 10¼	3,107,296	1,193,044
1893 ..	"	2,316	1,264	514	7,505,310	7 9½	3 2	2,927,056	1,188,540

Can. den and Sans Souci Tramways included in this statement.

The floods in the Hunter River District in March last caused the Main Northern Line to be seriously damaged at various points between Newcastle and Muswellbrook, a distance of 80 miles, and the through traffic was suspended for eight days. This not only injuriously affected the earnings, but caused a large additional expenditure to be incurred in temporarily, and then subsequently permanently, repairing the damage to the embankments and bridges. All this exceptional expenditure has been included in the working expenses for the year. A sum of over £20,000 has been spent to repair damage caused by floods to the lines in various parts of the country.

SAFETY APPLIANCES.

The following return will show the progress made in extending the absolute block system of working, and the interlocking of points and signals:—

RETURN showing number of Miles of Line open for Traffic, number of Miles worked under **Absolute Block System**, also Number and Percentage of Places which have or have not **Points and Signals Interlocked**.

Date to end of—	Number of Miles of Line open for Traffic.				Number of Miles of Line on which the Traffic is worked under the Absolute Block System.			Number and Percentage of Places which have or have not Points and Signals Interlocked.				
	Quadruple.	Double.	Single.	Total.	Quadruple and Double.	Single.	Total.	Number of Places.			Percentage.	
								Interlocked.	Not Interlocked.	Total.	Interlocked.	Not Interlocked.
October, 1888 .....	...	71½	2,042½	2,114	28	...	28	104	318	422	24.63	75.36
July, 1890 .....	...	78	2,103	2,181	72½	189½	262	176	204	470	37.45	62.55
July, 1891 .....	...	124	2,058½	2,182½	118½	207½	326½	234	262	496	47.17	52.83
July, 1892	8½	143	2,126½	2,278½	140	507½	656½	257	248	505	50.89	49.11
July, 1893	8½	149½	2,193	2,351	154½	910½	1,065	294	237	531	55.36	44.64

The working of the Webb and Thompson Electric Staff and Tyer's tablet instruments, now applied to about 900 miles of line, is most satisfactory, as not only is much greater security and expeditious working obtained, but the station officers are relieved of a great amount of anxiety in regulating the traffic, which has to pass over stretches of many hundreds of miles of single line.

It is satisfactory to record that the year has been practically free from any serious accident, the total amount of compensation paid during the year amounting to £1,701 only for passengers, and £1,889 for damage to or loss of goods.

All the vehicles used for live stock traffic have been fitted with the Westinghouse Automatic Quick-acting Freight Brake or pipe, with most satisfactory and economical results, the fitting of the ordinary goods stock with the same security is progressing.

RATES.

The system of conveyance of stamped parcels by passenger train, introduced on the 1st August, 1891, has answered our expectations, and notwithstanding the general depression a slightly increased revenue has been earned during the past year, and we hope that the low rates, combined with a cheap system of parcels delivery introduced in connection with Sydney and Suburbs on the 1st July last, will lead to a considerable further development.

The goods traffic for the year 1892 shows a slight decrease in the aggregate number of miles it was conveyed, the figures being—

						Ton Miles.
1891	...	...	...	...	...	240,791,664
1892	...	...	...	...	...	238,257,161

The average rate earned per ton per mile in 1892 was 1.63d., the same amount as in 1891.

The

The following return will give full particulars of the rates paid by all descriptions of traffic, and the distance each class was conveyed:—

Return of Ton Mileage for Year ending 31st December, 1892.

Description of Traffic.	Total Tons carried.	Total Miles carried.	Average Miles per Ton.	Earnings, exclusive of Terminal Charges.	Earnings per ton per Mile.	Percentage of each class to Total Tonnage.
				£	D.	per cent.
Coal and Shale... ..	2,303,299	40,008,075	17.37	123,097	'74	58.63
Firewood	193,411	5,077,038	26.25	19,968	'94	4.92
Grain, Flour, &c.	184,275	21,757,420	118.07	70,130	'77	4.69
Hay, Straw, and Chaff	70,362	10,234,835	145.46	25,964	'61	1.79
*Miscellaneous and A. } class }	370,344	20,113,382	54.31	71,237	'85	9.43
Wool	114,623	32,313,376	281.91	326,457	2'42	2.91
Live Stock	146,390	32,274,402	220.46	283,523	2'11	3.73
All other goods	545,925	76,478,633	140.09	694,848	2'18	13.90
Total	3,928,629	238,257,161	60.64	1,615,224	Average 1'63	100

* Miscellaneous traffic consists of timber, lime, manures, fruit, vegetables, hides, tobacco leaf, bricks, gravel, drain-pipes, and traffic of a similar nature.

The following table will show the extent to which the rates have been reduced since 1879:—

. RETURN showing Mileage per Ton and Earnings per Ton per Mile of Goods Traffic carried during the years ending 31st December, 1879, 1883, and 1892.

	Coal and Shale.			Firewood.			Grain and Flour			Hay, Straw, and Chaff.		
	1879.	1883.	1892.	1879.	1883.	1892.	1879.	1883.	1892.	1879.	1883.	1892.
Tons carried ...	1,033,099	1,596,408	2,303,299	112,171	160,662	193,411	36,249	65,736	184,275	22,467	35,119	70,362
Miles carried .	14,212,533	25,363,800	40,008,075	3,009,030	4,349,344	5,077,038	3,611,407	7,756,269	21,757,420	743,679	2,712,396	10,234,835
Average miles per ton.	13.68	15.88	17.37	26.82	27.07	26.25	99.63	117.90	118.07	33.10	77.23	145.46
Gross Earnings £	74,371	125,730	123,098	15,781	22,618	19,963	19,150	33,066	70,130	6,825	15,251	25,964
Earnings per ton per mile.	d. 1'25	d. 1'19	d. 0'73	d. 1'26	d. 1'25	d. 0'94	d. 1'27	d. 1'02	d. 0'78	d. 2'20	d. 1'35	d. 0'61
				Wool.			Live Stock.			General Merchandise, and other Traffic not included in other groups.		
				1879.	1883.	1892.	1879.	1883.	1892.	1879.	1883.	1892.
Tons carried				31,773	63,887	114,623	27,805	68,059	146,390	451,251	875,571	916,269
Miles carried				5,283,838	15,184,040	32,313,376	3,726,176	13,224,154	32,274,402	36,862,450	86,374,184	96,592,015
Average miles per ton				166.30	227.01	281.91	134.01	194.30	220.46	81.68	98.65	105.42
Gross Earnings				£ 61,875	156,763	326,457	45,816	154,960	283,523	408,637	762,817	766,086
Earnings per ton per mile				d. 2'81	d. 2'47	d. 2'42	d. 2'90	d. 2'81	d. 2'10	d. 2'66	d. 2'12	d. 1'90

NOTE.—The earnings for 1879 and 1883 include terminal charges—1892 exclude.

The agricultural interest has received special consideration at our hands, the rates having on several occasions been reduced; but as the large areas suitable for agriculture situated in remote districts of the Colony can only be developed by giving exceptionally low rates for the carriage of produce to market, further concessions in this respect will be made as from the 15th instant.

The following table will give a few illustrations of the rates in this and the adjoining Colonies:—

COMPARATIVE RATES for carriage of Grain, Flour, Meal, Bran, Pollard, Millet Seed, Beet-root, Green Chicory Root, Potatoes, and other Agricultural Produce, excepting Hay, Straw, and Chaff.

Miles.	NEW SOUTH WALES.		VICTORIA.		SOUTH AUSTRALIA.		QUEENSLAND.	
	Minimum, 6 tons.		Minimum, 2 tons.		Minimum, 3 tons.		Minimum, 2 tons.	
	At per ton.	Charge per truck containing 6 tons.	At per ton.	Charge for 6 tons.	At per ton.	Charge for 6 tons.	At per ton.	Charge for 6 tons.
	s. d.	£ s. d.	s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
50	4 10	1 9 0	5 6	1 13 0	0 6 9	2 0 6	0 7 6	2 5 0
100	8 4	2 10 0	9 4	2 16 0	0 10 11	3 5 6	0 13 9	4 2 6
150	10 0	3 0 0	12 4	3 14 0	0 14 1	4 4 6	0 17 11	5 7 6
200	11 8	3 10 0	16 4	4 18 0	0 16 2	4 17 0	1 2 1	6 12 6
250	13 0	3 18 0	18 0	5 8 0	0 18 3	5 9 6	1 5 3	7 11 6
300	14 0	4 4 0	19 0	5 14 0	1 0 4	6 2 0	1 8 4	8 10 0
350	14 9	4 8 6			1 2 5	6 14 6	1 11 6	9 9 0
400	15 3	4 11 6	No rates quoted for distances greater than 30½ miles.		1 4 6	7 7 0	1 14 7	10 7 6
500	16 3	4 17 6			1 8 8	8 12 0	2 0 10	12 5 0

COMPARATIVE Rates for Carriage of Hay, Straw (pressed), and Chaff in truck-loads in the various Colonies.

Mileages.	HAY.				STRAW.				CHAFF.			
	New South Wales.	Victoria.	South Australia.	Queensland.	New South Wales.	Victoria.	South Australia.	Queensland.	New South Wales.	Victoria.	South Australia.	Queensland.
	At per ton.	At per ton.	At per ton.	At per ton.	At per ton.	At per ton.	At per ton.	At per ton.	At per ton.	At per ton.	At per ton.	At per ton.
	s. d.	£ s. d.	£ s. d.	£ s. d.	s. d.	£ s. d.	£ s. d.	£ s. d.	s. d.	£ s. d.	£ s. d.	£ s. d.
50	4 7	0 5 6	0 9 5	0 7 6	4 7	0 5 6	0 9 5	0 7 6	3 10	0 5 6	0 9 5	0 7 6
100	6 4	0 10 6	0 15 8	0 13 9	5 8	0 10 6	0 15 8	0 13 9	4 8	0 10 6	0 15 8	0 13 9
150	8 10	0 15 0	0 19 10	0 17 11	7 9	0 15 0	0 19 10	0 17 11	6 6	0 15 0	0 19 10	0 17 11
200	11 0	0 17 0	1 4 0	1 2 1	9 8	0 17 0	1 4 0	1 2 1	8 1	0 17 0	1 4 0	1 2 1
250	12 6	0 18 0	1 8 2	1 5 3	11 0	0 18 0	1 8 2	1 5 3	9 2	0 18 0	1 8 2	1 5 3
300	13 11	0 19 0	1 12 4	1 8 4	12 4	0 19 0	1 12 4	1 8 4	10 3	0 19 0	1 12 4	1 8 4
350	15 4	1 0 1	1 16 6	1 11 6	13 6	1 0 1	1 16 6	1 11 6	11 3	1 0 1	1 16 6	1 11 6
400	16 9	1 1 1	2 0 8	1 14 7	14 9	1 1 1	2 0 8	1 14 7	12 3	1 1 1	2 0 8	1 14 7

· OPENING OF NEW LINES AND THEIR EFFECT UPON THE
TRAFFIC. ·

Appended hereto (pages 57 to 70) will be found returns showing the earnings and expenses in connection with a number of outlying lines in the Colony for the year ending the 31st December last. The following table summarizes these returns.

Line.	Length.	Capital Cost.	Working Expenses.	Interest on Capital.	Total Earnings.	Loss after providing for Working Expenses and Interest.
	Mls. ch	£	£	£	£	£
Sydney to Kiama	71 53	2,180,167	120,002	76,305	139,530	56,777
Junce to Hay	167 35½	1,012,483	28,023	41,699	55,400	24,322
Narrandera to Jerilderie ...	64 51½	421,175	7,451	16,967	8,880	15,538
Wallerawang to Mudgee ...	85 6	1,012,815	25,087	41,562	37,132	29,517
Cootamundra to Gundagai ...	33 45½	252,291	6,662	8,830	8,633	6,859
Goulburn to Cooma	130 40	1,462,359	30,074	51,182	35,460	45,796
Orange to Molong	22 60	286,870	6,725	10,010	10,561	6,204
Hornsby to St. Leonards ...	10 29½	219,252	5,801	7,673	2,847	10,627
Armidale to Jennings... ..	132 42¾	1,539,568	39,857	60,951	37,150	63,658
Murrumburrah to Blayney ...	110 63	1,141,553	37,199	39,954	38,047	39,106
Culcairn to Corowa	47 39	193,965	3,096	5,091	3,296	4,891*
Nyngan to Cobar	81 27½	281,765	6,062	9,862	8,430	7,494†
Blacktown to Richmond ...	16 12	196,125	10,288	9,806	12,614	7,480
Total... ..	974 28½	10,263,688	336,327	379,922	397,980	313,269
Werris Creek to Narrabri ...	96 48	677,182	30,651	27,067	67,161	9,443
Dubbo to Bourke	225 45	1,602,480	65,258	63,952	157,658	28,448

* Nine months ending 30th June, 1893.

† Twelve months ending 30th June, 1893.

The Cobar and Culcairn-Corowa Lines, which have been opened since the 1st July, 1892, have not contributed much revenue. The Cobar District, however, during last season, suffered severely from drought and the rabbit pest. The coming season promises to be better than the last. The Culcairn and Corowa Line will be a great burden until more land is placed under cultivation. The low rates for agricultural produce should influence this movement.

Although we have in several of our reports pointed out that, in our opinion, part of the proceeds of the sale of Crown lands, enhanced in value by the construction of railway lines, should be devoted to providing moneys for the construction of such lines, nothing has yet been done in this direction. We would strongly urge that this subject should be dealt with in a way that would reduce the railway capital; as, while it is necessary to proceed gradually with the extension of the railways, it would be most unwise to add further to the unprofitable lines—in connection with which every effort is being made to work them cheaply—by continuing indefinitely a system of unassisted construction.

The views which we have put forward from time to time would, if adopted, be practically establishing the land grant system of railway construction, but the State would obtain the financial advantages instead of a syndicate.

The system of light Pioneer Lines of the standard gauge, as suggested in our report for 1890-91, should, in our opinion, be the policy of the future in the construction of railways in the pastoral districts.

ACCOMMODATION FOR THE TRAFFIC AND CONDITION OF LINES AND ROLLING-STOCK.

The accommodation for the traffic throughout the Colony is satisfactory.

The improvement of the 1 in 33 grades, north of Singleton, and the avoidance of the Lapstone Hill Zig-zag, by the opening of the direct line, considerably assist the work, and also enable a large saving in mileage to be effected.

The rolling-stock is now in an efficient state, and the powerful engines have enabled us to largely economise the train and engine mileage.

The Train Mileage has been reduced by ... 850,786 miles

And the Engine Miles by 2,207,457 ,,

(Engine Mileage includes Train Mileage, assisting trains with a second engine, shunting, &c.)

The Permanent-way has been considerably improved during the year by replacing worn-out iron rails with steel and in resleepering and reballasting. The whole of the cost of this work is debited to working expenses. A reduction in the expenditure under this head will be effected during the forthcoming year.

STAFF.

In consequence of the serious falling off in traffic the whole of the Staff has been carefully revised, and retrenchment effected wherever possible. In order to avoid dispensing with a considerable number of men from the Workshops Staff, the whole of the men were placed on short time—in the first place, by curtailing their time by half-a-day per week, and, subsequently, by a whole day. It was also found necessary, as from the 1st of July, 1892, to suspend the periodical advances usually granted to the Staff in the case of the higher-paid grades. Up to the 1st of January last all advances to the Wages Staff receiving less than 8s. per day were passed, and last month all advances to the Junior Staff not receiving more than 5s. per day were also passed. To the Salaried Staff, except in the case of the juniors and lowest-paid grades, no advances have been given for some time, except where change of position or additional responsibility called for special consideration. Overtime and Sunday-time for the Running Staff on the Railways and Tramways has also been curtailed with the view of giving work to men who would otherwise have been thrown out of employment.

Printed as an Appendix (page 24) is a comparative statement of the Staff employed in the principal grades in October, 1888, and in June, 1893, together with the rates of pay in both periods. This return will show that good wages are being paid to all classes of the Staff, and that, practically, in all grades the employés are receiving better pay than in 1888. The rates of pay are the most liberal in the Colonies.

The Appendices to the Report will give complete information regarding the railway traffic and expenses, and the reports of the Chief Mechanical Engineer and the Engineer-in-Chief for Existing Lines will give details regarding the condition of the rolling stock and lines.

Diagrams are also attached showing graphically the most interesting features of the working of the Department.

RESULTS OF THE WORKING.

RAILWAYS.

Year ending 30 June, 1893, compared with 1892 and 1888.

PARTICULARS.	1893.	1892.	1888.
Total spent in construction and equipment	£34,657,571	33,312,608	27,722,748
Total Debentures finally paid off	1,201,075	£1,182,275	1,017,875
Total cost of lines upon which interest has to be paid ...	33,456,496	£32,130,333	26,704,873
Total cost per mile open for traffic... ..	£14,743	15,246	13,114
Total mileage open for traffic	2,351	2,185	2,114
Average miles opened for the year	2,316	2,182½	2,044
Gross revenue	£2,927,056	3,107,296	2,295,124
Working expenditure	£1,738,516	1,914,252	1,530,551
NET PROFIT ON WORKING	£1,188,540	1,193,044	764,573
(After paying Working Expenses).			
PERCENTAGE OF WORKING EXPENSES TO REVENUE	59'39	61'60	66'69
Earnings per average mile open	£1,264	1,423	1,122
Expenditure per average mile open... ..	£750	877	748
Gross earnings per train mile	s. d. 7 . 9½	s. d. 7 . 5½	s. d. 6 . 10½
Expenses per train mile	4 . 7½	4 . 7	4 . 7
NET PROFIT PER TRAIN MILE	3 . 2	2 . 10¼	2 . 3½
(After paying Working Expenses).			
Number of passenger journeys	19,932,703	19,913,916	15,174,115
Goods tonnage	3,623,728	4,151,433	3,331,671
Live-stock tonnage	150,115	145,230	68,101
Train mileage... ..	7,505,310	8,356,096	6,689,313
Locomotives, Number of	515	489	428
Passenger Stock, Number of	1,053	1,054	1,039
Goods Stock, Number of	10,551	10,455	8,333

TRAMWAYS.

On the 30th of June, 1892, 48 miles were open for traffic, and on the 24th of October, 1892, a further section was opened from Merton-street, Balmain, to Gladstone Park, a distance of 1 mile, 8 chains making a total of 49 miles on the 30th of June, 1893.

The cost of the lines opened for traffic is £1,118,471.

A sum of £1,022,648 has been raised by the issue of debentures and other stock to the amount of £1,071,112, and the balance has been provided out of the general funds of the Colony.

The traffic upon the tramways has been, to some extent, affected by the financial depression, the revenue showing a decrease of £9,723. The working expenses, however, have been reduced to a greater extent, and the net return upon the capital invested, after paying working expenses, is 5·51 per cent., as against 5·28 per cent. last year.

Twenty tram-cars have been renewed out of working expenses during the year, making a total of 76 cars renewed out of working expenses during the past five years.

The serious depression in the Newcastle Coal District has considerably interfered with the earnings of the Plattsburg Tram-lines.

CONDITION OF EXISTING LINES.

The lines generally are in good running order, a fair amount of relaying and wood-blocking having been carried out during the past year, other necessary work of a like nature has been authorised, and will absorb a considerable sum of money during the ensuing year.

ACCOMMODATION FOR THE TRAFFIC.

With the exception of the terminal accommodation in the city, to which we have drawn attention in our two last Annual Reports, the accommodation for traffic is, at the present time, sufficient. We strongly urge the carrying out of our previous recommendation for giving relief at the Bridge-street terminus at the earliest moment the finances permit of such a course, as not only would the whole of the tram services be relieved but the financial return is undoubted.

The extension of the Plattsburg tram-line from Hunter-street, Newcastle, to the Railway-station, and a short distance beyond, is now approaching completion, and will be a great convenience to the public.

The

The duplication of 28 chains of the Forest Lodge Line, from the Junction to the Glebe Town Hall, which was brought into use on the 1st July, 1893, has permitted of an improved service being adopted for Balmain, and a considerable increase in traffic may be anticipated.

The working of the Tram Lines in sections is as under:—

CITY AND SUBURBAN LINES.	1893.	1892.	1888.
<i>Length, 38 miles.</i>			
Total Cost of Construction and Equipment	£947,775	£932,907	£742,555
Gross Revenue	271,041	279,321	221,060
Working Expenditure	214,824	229,145	204,227
Profit on Working	56,217	50,176	16,833
Percentage, Working Cost to Revenue	79·26	82·04	92·38
Total Mileage open	38	37	29½
Passenger Fares collected	63,588,885	65,299,063	51,563,197
PERCENTAGE OF PROFIT TO CAPITAL INVESTED	5·94	5·54	2·27
NORTH SHORE CABLE TRAMWAY.			
<i>Length, 1½ miles.</i>			
Total Cost of Construction and Equipment	£75,368	£75,368	£71,519
Gross Revenue	10,635	11,123	7,248
Working Expenditure	7,198	7,902	6,833
Profit on Working	3,437	3,221	415
Percentage, Working Cost to Revenue	67·68	71·04	94·26
Total Mileage open	1½	1½	1½
PERCENTAGE OF PROFIT TO CAPITAL INVESTED	4·56	4·27	0·58
NEWCASTLE TO PLATTSBURG.			
<i>Length, 7½ miles.</i>			
Total Cost of Construction and Equipment	£79,723	£75,899	£63,170
Gross Revenue	12,549	13,696	8,211
Working Expenditure	10,024	10,037	8,136
Profit on Working	2,525	3,659	75
Percentage, Working Cost to Revenue	79·88	73·28	99·08
Total Mileage open	7½	7½	7½
PERCENTAGE OF PROFIT TO CAPITAL INVESTED	3·17	4·82	0·12
ASHFIELD TO ENFIELD.			
<i>Length, 2 miles.</i>			
Total Cost of Construction and Equipment	£15,605	£15,485	
Gross Revenue	1,142	950	
Working Expenditure and Interest on Capital... ..	2,308	1,925	Not open.
Percentage, Working Cost to Revenue	154·29	158·63	
Total Mileage open	2	2	
LOSS ON WORKING	£1,166	£975	

RESULTS OF THE WORKING.

TRAMWAYS—ALL LINES.

Year ending 30 June, 1893, compared with 1892 and 1888.

PARTICULARS.	1893.	1892.	1888.
Total spent on construction and equipment	£1,118,471	1,099,659	877,244
Total cost per mile open	22,826	22,909	22,786
Total mileage open for traffic	49	48	38½
Gross revenue	£295,367	305,000	236,519
Working expenditure	£233,808	218,591	219,196
NET PROFIT (After paying Working Expenses) ...	£61,559	56,499	17,323
PERCENTAGE OF WORKING EXPENSES TO REVENUE	79'15	81'48	92'67
Earnings per average mile open	6,090	6,705	6,224
Expenditure per average mile open	4,821	5,463	5,768
Gross earnings per tram mile	3/1½	3/4¼	3 4¼
Expenses per tram mile	2/5½ d. 7¾	2/8¼ d. 7½	3/1¼ d. 3
NET PROFIT PER TRAM MILE			
PERCENTAGE OF PROFIT TO CAPITAL INVESTED	5'51	5'28	1'98
Number of passenger fares collected	69,403,094	71,477,948	53,957,395
Tram mileage... ..	1,902,303	1,823,061	1,388,786
Motors, Number of	121	121	96
Cars, Number of	268	244	159
General Stock, Number of	21	21	19

We have the honor to be,

Sir,

Your most obedient Servants,

E. M. G. EDDY, Chief Commissioner.

W. M. FEHON,
CHARLES OLIVER, } Commissioners.

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GENERAL.

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Maps showing Railway systems and Lines.

APPENDIX I.

New South Wales Government Railways,

Sir, Office of Engineer-in-Chief for Existing Lines, 21 July, 1893.

I have to report that the whole of the Lines and Works have been well maintained during the past year.

A distance of 98 miles 15 chains has been either completely relaid, rerailed, or resleepered, 208 miles 15 chains have been lifted and reballasted, and the condition of the permanent-way has generally been much improved. The work of renewing the fencing has made fair progress.

Very heavy rains fell during the early part of March last, particularly in the north, where the lines suffered most severely. At Newcastle 11 inches of rain fell in twenty-four hours between the 7th and 9th of the month, and several sections of the road were submerged from 2 to 12 feet in depth. Between East and West Maitland, at Glennie's Creek, at 61 miles 20 chains, and at Bowman's Creek, as well as at many other points between Newcastle and Muswellbrook, portions of the embankment were washed away, and the bridges severely damaged, causing a complete stoppage of the traffic for eight days. The heavy rainfall also affected to a less extent the Illawarra, North Coast, and Mudgee Lines.

The lines were repaired and communication restored with the least possible delay, but considerable additional expenditure has been incurred.

The iron girder bridges over Solitary Creek at 113 miles 10 chains, 113 miles 25 chains, 114 miles, 115 miles 26 chains, 115 miles 75 chains, and 120 miles, on the Western Line, and over the Wollondilly, Barber's, Boxer's, and Mulwarrie Creeks, on the Southern Line, which were reported upon by a Royal Commission in 1885-6, have been strengthened.

Duplication Works.

The whole of the works in connection with the quadruplication of the Suburban Line between Redfern and Flemington, and the duplication of the Southern Line between Granville and Picton have now been entirely completed.

Deviations and Improvements of Grades.

The deviations and improvements of grades between Muswellbrook and Singleton, and the deviation of the line at Lapstone Hill, dispensing with the Zig-Zag, were completed and opened for traffic in December last.

The slewing of the main lines between Honeysuckle Point and Newcastle, rendered necessary by the proposed extension of the Tramway along Scott-street, has been accomplished.

The following new lines have been opened for traffic :—

Nyngan to Cobar, on 1st July, 1892.
Culcairn to Corowa, on 3rd October, 1892.
St. Leonard's to Milson's Point, on 1st May, 1893.
Kiama to Nowra, on 3rd June, 1893.

I have, &c.,
WILLIAM T. FOXLEE,
Engineer-in-Chief.

To the Secretary to the Railway Commissioners.

RETURN showing the number of Men employed in the maintenance of Permanent-way.

	30th June, 1893. Number per Mile.	30th June, 1892. Number per Mile.
Sydney to Granville Junction	94	97
Granville Junction to River Murray	81	81
Granville Junction to Bourke	69	78
Strathfield Junction to Hamilton Junction	82	78
Newcastle to Wallangarra	74	82
Illawarra Line	72	80
Cooma Line	43	50
Murrumburrah-Blayney Line	54	54
South-Western Line... ..	44	50
Jerilderie Branch	43	43
Gundagai Branch	35	48
Richmond Branch	74	74
Mudgee Branch	44	56
Molong Branch	52	53
North-western Line	54	58
St. Leonards Line	77	76
Camden Tramway	51	66
Sans-Souci Tramway	40	42
Plattsburg Tramway... ..	81	81
Yass Tramway	68	69
Culcairn-Corowa Line	31	—
Nyngan-Cobar Line	21	—

The

The following work was performed during the year :—

Sidings laid in and extended	2 miles 20 $\frac{1}{2}$ chains.
Sleepers used in new sidings	3,993.
Sleepers used in main lines	225,618.
Ballast used on maintenance of main lines	109,744 cubic yards.
Length of fences renewed	28 miles 59 $\frac{1}{4}$ chains.
Culverts and flood-openings constructed	17 ; extra waterway, 1,072 feet.

RETURN showing length of line relaid and paid for out of working expenses during each year 1881 to 1893.

Year ending 30th June.	Relaying done.	Relaying paid for.
	miles.	miles.
1875	1	1
1876	0 $\frac{3}{4}$	0 $\frac{1}{2}$
1877	3 $\frac{1}{4}$	3 $\frac{1}{2}$
1878	4	4
1879	3 $\frac{1}{4}$	3 $\frac{1}{4}$
1880	5 $\frac{1}{2}$	5 $\frac{1}{2}$
1881	12 $\frac{1}{2}$	12 $\frac{1}{2}$
1882	10	10
1883	8	8
1884	20 $\frac{3}{4}$	20 $\frac{3}{4}$
1885	32 $\frac{1}{4}$	32 $\frac{1}{4}$
1886	11 $\frac{1}{2}$	11 $\frac{1}{2}$
1887	26	18 $\frac{1}{4}$
1888	23	20 $\frac{3}{4}$
Total for 14 years	162	152
1889	25	35
1890	44 $\frac{1}{4}$	44 $\frac{1}{4}$
1891	107 $\frac{3}{4}$	61 $\frac{1}{2}$
1892	46 $\frac{1}{4}$	76
1893	98 $\frac{1}{4}$	99 $\frac{3}{4}$
Total for 5 years	322	316 $\frac{1}{2}$

APPENDIX II.

Chief Mechanical Engineer's Report for the year ending 30 June, 1893.

Sir,

Excleigh, 25 July, 1893.

In submitting the annual statement of the working of the Locomotive, Carriage, and Waggon Department for the year ending 30 June, 1893, I have the honor to report that while the condition of the rolling stock, pumping plant, and workshop machinery has been fully maintained and improved, a decrease in the cost of working has occurred.

A very large reduction took place in the mileage executed during the year, which was largely due to the extended employment of more powerful engines, but by economies in the expenditure a saving of nearly 1 $\frac{1}{4}$ pence per train mile has resulted, when compared with the cost of last year. The whole of the new American engines have been at work throughout the year hauling loads of live stock and goods in single trains; for such loads two engines had to be employed previous to their introduction, and consequently their influence in the reduction of train and unprofitable engine mileage has been very substantially felt.

The

The following brief summary shows the mileage executed and the cost for the years in question:—

	1892.	1893.	Increase.	Decrease.
Train miles	8,356,096	7,505,310	.....	850,786
Engine miles	12,362,105	10,154,648	.....	2,207,457
Revenue... ..	£3,107,296	£2,927,056	.....	£180,240
Expenditure	£793,247	£676,480	.....	£116,767
Do in per cents. of revenue... ..	25.53	23.11	.....	2.42
Cost in pence per train mile	22.783	21.632	.....	1.151

Locomotives.

Three hundred and sixty-seven locomotives have passed through the repairing shops during the year; Eveleigh dealt with 211 of them and Newcastle with 39; the remaining 117 were repaired at the smaller depôts. Two hundred and fifty-nine out of the above total received heavy repairs and thorough overhaul; the remaining 108 received repairs of a medium character.

Ten tram motors were also dealt with at Newcastle; 3 of them were heavily repaired.

During the year 286 boilers were dealt with; 198 of them in Eveleigh and 48 in Newcastle, and the remaining 40 at the smaller depôts. One hundred and one of these boilers were internally examined, heavily repaired, refilled with tubes, and returned to their locomotives. Sixty-five stationary boilers were dealt with; 15 of them received heavy repairs at Eveleigh.

One new boiler has been taken out of store, placed in a locomotive, and charged against working expenses.

Carriages and Waggon.

One thousand two hundred and eighty-two passenger vehicles were repaired; 989 of them at Eveleigh and 293 at Newcastle. Three hundred and one of the above total were thoroughly overhauled and received heavy repairs.

Seven thousand four hundred and thirty-six waggons and vans passed through the Eveleigh and Newcastle shops during the year; 3,376 of them were heavily repaired.

In addition to the above, 45 vehicles were reconstructed in the Eveleigh shops at a cost of £5,075, and charged to working expenses. They consist of 12 live-stock vans, 2 meat vans, 1 covered van, 8 bogie waggons, 3 ordinary "D" trucks, and 7 heavy goods brakes, all of which were entirely new; and the following were rebuilt:—Bogie stock—2 sleeping cars, 1 first-class carriage, 2 second-class, 3 composites, 1 mail-van, 1 passenger brake-van, and 2 four-wheeled goods brakes.

In addition to the above, the following new vehicles were constructed and charged to capital:—6 open bogie waggons, 4 heavy goods brakes, and 1 "D" waggon with composite underframe.

One hundred and forty-nine defective axles have been withdrawn from traffic and replaced by stronger ones; 482 axle-boxes of defective design have been replaced by standard types; and light draw-gear on 47 waggons removed.

New Stock.

Twenty-six English express engines have been placed in service; 84 iron hopper-waggons added to the stock, and 25 new iron underframe "D" waggons were built by contractors for renewals.

I have, &c.,

W. THOM,

Chief Mechanical Engineer.

To the Secretary to the Railway Commissioners.

APPENDIX

NEW SOUTH WALES

STATEMENT showing the number and classes of the Locomotive Engines,
LOCOMOTIVE

	PASSENGER.				
	Tender.				
	Express 4-wheels coupled, bogie.	4-wheels coupled, double bogie front.	6-wheels coupled, single bogie front.	4-wheels coupled, single bogie front.	10-wheeled engines, 6-wheels coupled.
Stock, 30th June, 1892	47.	82	20	13	28
Additions to 30th June, 1893 ... ..	.....	.....	.....	.....	26
Stock, 30th June, 1893	47	82	20	13	54

COACHING

	Dining.	State.	Sleeping Cars.				First Class Cars.					Composite Cars.				
			Pullman.	46ft. Lavatory, Composite.	8 and 12-wheel Ordinary bogie.	4-wheel.	8-wheel bogie Saloon.	46ft. Lavatory.	Bogie and 8-wheel compartment.	Bogie compartment Suburban.	Bogie Suburban.	6-wheel.	Ashbury 12-wheel bogie.	Bogie and 8-wheel compartment.	Bogie Suburban.	6-wheel.
Stock on 30th June, 1892	1	3	8	12	17	3	9	30	55	9	90	14	8	44	5	11
Renewals to 30th June, 1893 ... ..	...	...	...	...	2	...	...	...	...	...	1	...	...	3	...	...
Stock, 30th June, 1893	1	3	8	12	17	3	9	30	55	9	93	14	8	44	8	11

One Workman's Van converted to Goods

GOODS

	OPEN WAGONS				TOTAL OPEN WAGONS.	COVERED VANS.						TOTAL COVERED VANS.
	4-wheels.	6-wheels.	Bogies.	Coal Hopper, 4-wheels.		Ordinary, 4-wheels.	Louved, 4-wheels.	Bogies.	Powder, 4-wheels.	Ment, 4-wheels.	Refrigerators, Bogies.	
Stock on 30th June, 1892	6,396	3	486	416	7,301	338	255	6	45	48	25	717
Renewals to do., 1893	28	...	2	...	30	1	...	...	...	2	...	3
Additions to 30th June, 1893...	6,418	3	486	416	7,323	341	255	6	38	47	25	712
Stock, 30th June, 1893..	6,419	3	492	500	7,414	341	255	6	38	47	25	712

One goods brake transferred from coaching ; other differences

III.

GOVERNMENT RAILWAYS.

Passenger Carriages, and Goods Waggon, on the 30th June, 1893.

ENGINES.

			GOODS.					Sans-Souci Tramway engine motors.	Total.
Tank.			Tender.			Tank.			
Suburban 4-wheels coupled, single bogie front.	Suburban 4-wheels coupled, double bogie front.	Suburban 4-wheels coupled, double bogie front, single bogie rear.	8-wheels coupled, single bogie front.	6-wheels coupled, single bogie front.	6-wheels coupled.	6-wheels coupled.	6-wheels coupled, bogie front and rear.		
18	6	15	31	105	76	14	32	2	489
.....	.....	.....	.....	.....	.....	.....	.....	.....	26
18	6	15	31	105	79	11	32	2	515

STOCK.

Second Class Cars.						Total, Passenger-carrying Rolling Stock.	Miscellaneous.								Total, Miscellaneous.	Grand Total.	
46-ft. bogie com- partment.	Bogie compart- ment, Suburban.	Bogie compartment.	Bogie Suburban.	6-wheel.	4-wheel.		Tram-cars.	Mail-vans.	Prison-vans.	Hearers.	Horse-boxes.	Carriage Trucks.	46 ft. Second Class brakes.	Brake-vans.			Workmen's Vans.
36	9	53	93	7	45	562	8	32	7	12	152	71	24	153	33	492	1,054
...	...	...	2	...	...	8	...	1	...	...	...	...	1	...	...	2	10
36	9	53	97	7	45	562	8	28	7	12	152	71	24	157	32	491	1,053

Brake-van, and transferred to Goods Stock.

STOCK.

STOCK TRUCKS.					TOTAL STOCK TRUCKS.	TOTAL VEHICLES USED FOR GOODS TRAFFIC PURPOSES.	BRAKE- VANS.	DEPARTMENTAL.							TOTAL, DEPART- MENTAL.	Grand Total.
Cattle.		Sheep.		Combina- tion, 4-wheels.				Dump (Loco. Coal) Cars.	Ballast.		Water, Wagons.	Gas.		Acci- dent Vans.		
4-wheels.	Bogies.	4-wheels.	Bogies.						Hopper.	Ordinary.		Van.	Truck			
466	26	636	2	18	1,148	9,166	206	201	384	431	54	1	1	11	1,083	10,455
6	...	6	...	...	12	45	9	6	...	...	...	...	...	...	6	60
467	26	634	3	18	1,148	9,183	207	200	377	422	54	1	1	11	1,066	10,456
...	...	...	...	...	...	91	4	...	...	...	...	...	...	...	...	95
467	26	634	3	18	1,148	9,274	211	200	377	422	54	1	1	11	1,066	10,551

owing to conversion and replacement from one class to another.

SUMMARY OF STOCK.

Total, Locomotives	...	...	...	...	1893.	1892.
„ Coaching Stock	...	...	...	...	515	489
„ Wagon Stock	...	...	...	...	1,053	1,054
	...	...	...	...	10,551	10,455
Grand Total	...	...	...	...	12,119	11,998

APPENDIX IV.

STATEMENT OF ACCOUNT OF THE EXPENDITURE AND REVENUE FOR YEAR 1893, WITH COMPARISONS FOR 1892 AND 1888.

DR.

RAILWAYS.

CR.

EXPENDITURE.	YEAR ENDING JUNE 30,	CORRESPONDING PERIOD IN		REVENUE.	YEAR ENDING JUNE 30,	CORRESPONDING PERIOD IN	
	1893.	1892.	1888.		1893.	1892.	1888.
	£	£	£		£	£	£
To MAINTENANCE OF WAY, WORKS, AND STATIONS	474,142	484,233	429,001	BY PASSENGERS—			
LOCOMOTIVE POWER	557,574	643,924	466,452	Bookings.			
CARRIAGES AND WAGGONS	129,188	160,816	127,836	1893.			
TRAFFIC EXPENSES	503,137	557,396	420,028	1892.			
COMPENSATION—PASSENGERS	1,701	3,680	21,100	FIRST CLASS No. 3,518,937 3,273,923	339,421	391,270	} 723 645*
Do Goods	1,889	4,223	4,683	SECOND CLASS No. 9,144,443 9,346,022	511,992	534,519	
GENERAL EXPENSES	70,885	60,080	61,451	SEASON { 1ST CLASS No. 12,323 12,001	44,120	44,054	} 59 691*
				TICKETS { 2ND CLASS No. 231,957 231,796	40,140	38,600	
				HORSES, CARRIAGES, AND DOGS	17,788	20,733	20,196
				PARCELS AND CLOAK ROOM	77,937	77,520	59,312
				MAILS	57,760	55,836	45 727
				MISCELLANEOUS	3,180	7,924	1,512
	1,738,516	1,914,252	1,530,551	TOTAL COACHING	1,092,338	1,170,456	910,003
BALANCE, NET RETURN } AFTER PAYING WORKING EXPENSES }	£ 1,188,540	£ 1,193,044	£ 764,573	GENERAL MERCHANDISE	985,587	1,057,334	829,747
				WOOL	336,373	349,675	217,671
				LIVE STOCK	299,798	299,252	164,847
				MINERALS—COAL AND COKE	181,026	196,022	145,456
				MISCELLANEOUS	7,396	13,902	5,088
				TOTAL GOODS	1,811,180	1,916,185	1,362,609
				GENERAL MISCELLANEOUS	23,538	20,655	22,232
GRAND TOTAL	2,927,056	3,107,296	2,295,124	GRAND TOTAL	2,927,056	3,107,296	2,295,124

* NOT KEPT SEPARATE IN 1888.

THOMAS HALL,
Chief Accountant.

APPENDIX V.

SCHEDULES under Working Expenses for the Year ending the 30th June, 1893, with comparisons for 1892 and 1888.

RAILWAYS.

BRANCHES.	Year ending June 30, 1893.	Corresponding period in		BRANCHES.	Year ending June 30, 1893.	Corresponding period in	
		1892.	1888.			1892.	1888.
A.—Maintenance of Way and Works.				D.—Traffic Expenses.			
Salaries, offices expenses, and general superintendence	28,374	16,415	19,635	Traffic Manager's office and staff	5,801	6,816	7,714
Maintenance and renewals of permanent } Wages..... £314,901		328,847	267,430	District officers and clerks	22,961	23,655	7,179
way, viz.: } Materials..... 81,921	396,822	77,550	55,456	Station-masters and night officers	86,981	88,649	67,692
Repairs, &c., of bridges, signals, and other works	24,529	27,795	48,187	Clerks	26,423	25,472	24,134
Repairs, &c., of stations and buildings	17,283	28,421	30,456	Pointsmen, signalmen, and gatekeepers	46,195	52,076	32,533
Sundries	7,120	5,205	7,837	Guards	63,017	71,570	51,416
				Porters, labourers, &c.	143,658	100,394	142,610
Lines maintained— { Quadruple..... 8½ 8				Stores for stations	39,438	50,243	33,958
{ Double..... 140½ 143 72				Advertising, stationery, printing, &c.	14,816	16,009	
{ Single..... 2,193 2,034 2,043				Travelling and Incidental	5,906	6,392	52,753
	2,351 2,185 2,114			Sundries	47,938	56,120	
	474,142	484,233	429,001		£ 503,137	557,396	429,028
B.—Locomotive Power.				E.—Compensation.			
Locomotive Superintendent and clerks	14,749	10,523	21,566	For personal injury—Passengers	1,701	3,589	21,100
Locomotive foremen	11,065	10,594	6,848	For damage to and loss of goods	1,889	4,223	4,683
Locomotive drivers and firemen	185,895	223,277	157,808		£ 3,590	7,893	25,783
Locomotive cleaners, coalmen, and labourers	59,384	60,596	52,287	Gratuities to widows and children of employees who have met			
Locomotive sundries	15,700	13,552	24,185	with accident	2,475	3,210	1,307
Coal, coke, and wood	75,990	81,083	54,392				
Water	23,676	27,548	14,162				
Oil, tallow, and waste	15,156	27,312	16,042				
Sundry stores for cleaners	4,281	5,859	4,164				
Repairs and renewals of engines { Wages..... £119,308		123,502	92,133				
{ Materials..... 32,280	151,583	53,773	20,865				
	£ 557,574	643,924	466,452	F.—General Expenses.			
C.—Carriages and Waggon.				Commissioners' and Secretary's office	11,700	10,276	7,915*
Greasing and oiling { Wages } Traffic charges	3,882	3,749	4,003	Accountant's office	9,767	7,757	7,145*
{ Materials }	6,400	7,744	9,524	Audit office	10,158	10,092	10,951
Carriage repairs { Wages..... 38,684		38,931	35,285	Stores branch	6,098	3,700	7,688*
{ Materials..... 9,445		12,893	19,236	Telegraph branch	19,267	17,413	22,209
Waggon repairs { Wages..... 48,418		60,069	39,550	Sundries	11,420	7,602	4,236
{ Materials..... 22,350		37,430	20,148		£ 68,410	56,870	60,144
	£ 129,188	160,816	127,836	GRAND TOTAL £ 1,738,516 1,914,252 1,530,551			

* Under the late administration £6,578 of the expenses in connection with the offices of the Commissioner, Secretary, Accounts, and Store Branches was charged to the Construction Capital Account, otherwise the charges against each branch would have been—Commissioner and Secretary, £2,783; Accountant's office, £9,207; and Stores Branch, £10,336. The figures in Compensation and General Charges in 1888 have been adjusted to show the amounts paid to widows and children of employees.

THOMAS HALL,
Chief Accountant.

APPENDIX VI.

COMPARATIVE Analysis of Revenue and Expenditure for the years ending 30 June, 1893, 1892, and 1888.

Particulars.	Year ending 30 June, 1893.				Year ending 30 June, 1892.				Year ending 30 June, 1888.			
	Average miles open for traffic		Miles.		Average miles open for traffic		Miles.		Average miles open for traffic		Miles.	
	Train mileage—	Passenger	Goods	Total mileage	Train mileage—	Passenger	Goods	Total mileage	Train mileage—	Passenger	Goods	Total mileage
	2,316	3,678,506	3,326,804	7,503,310	2,182	3,638,813	4,672,233	8,356,096	2,044	3,074,678	3,614,635	6,689,313
	Numbers or Tonnage.	Revenue.	Per mile open	Per train mile.	Numbers or Tonnage.	Revenue.	Per mile open.	Per train mile.	Numbers or Tonnage.	Revenue.	Per mile open.	Per train mile.
REVENUE.												
	Numbers.	£	£	d.	Numbers.	£	£	d.	Numbers.	£	£	d.
REVENUE.	12,619,945	851,413	367.6		12,663,380	925,789	421.2		9,572,785	723,645	354.0	
Passengers — First and second class.	243,796	84,260	36.4		244,280	82,654	37.9		169,850	59,691	29.2	
Do Season Tickets		17,788	7.7			20,733	9.5			20,196	9.9	
Horses, carriages, and dogs		77,937	33.6			77,520	35.5			59,312	29.0	
Cloak-room and parcels		57,760	24.9			55,836	25.6			45,727	22.4	
Mails		3,180	1.4			7,924	3.6			1,512	0.7	
Miscellaneous												
Total, coaching		1,092,338	471.6	71.27		1,170,456	536.3	76.27		910,083	445.2	71.03
General Merchandise	1,171,815	964,865	416.6		Tons. 1,239,029	1,010,351	462.9		Tons. *1,152,377	829,747	405.8	
Wool	107,491	336,373	145.2		112,609	349,675	160.2		74,148	217,671	106.4	
Live stock	150,115	299,798	129.5		145,230	299,252	137.1		69,101	164,847	80.6	
Minerals—Coal and Coke..	2,228,577	181,026	78.1		2,562,124	196,022	89.8		*2,105,146	145,456	71.1	
Minerals, other than coal†	115,845	21,722	9.4		237,721	46,983	21.5					
Miscellaneous		7,396	3.2			13,902	6.4			5,088	2.8	
Total, goods	3,773,843	1,811,180	782.0	113.59	4,296,713	1,916,185	877.9	98.43	3,399,772	1,362,809	666.7	90.48
Sundries, special and miscellaneous.		23,538	10.2	0.75		20,655	9.5	0.59		22,232	10.9	0.80
Total Revenue		2,927,056	1263.8	93.60		3,107,296	1423.7	89.25		2,295,124	1122.8	82.34
EXPENDITURE.												
	Expenditure.	Per mile open.	Per train mile.	Per cent to Revenue.	Expenditure.	Per mile open.	Per train mile.	Per cent. to Revenue.	Expenditure.	Per mile open.	Per train mile.	Per cent. to Revenue.
WORKING EXPENSES.	£	£	d.		£	£	d.		£	£	d.	
Maintenance of way, works, and stations	474,142	204.7	15.16	16.20	484,233	221.9	13.91	15.58	429,001	209.9	15.39	18.69
Locomotive power.....	557,574	240.8	17.83	19.05	643,924	295.0	18.49	20.72	466,452	228.2	16.73	20.33
Carriages and waggons.....	129,188	55.8	4.13	4.41	160,816	73.7	4.62	5.18	127,836	62.5	4.59	5.57
Traffic expenses.....	503,137	217.2	16.09	17.19	557,306	255.4	16.01	17.94	420,028	205.5	15.07	18.30
Compensation — Passenger	1,701	.7	.05	.06	3,580	1.7	0.10	0.11	21,000	10.3	0.75	0.91
Do Goods	1,889	.8	.06	.06	4,223	1.9	0.12	0.14	4,783	2.3	0.17	0.21
General expenses	70,885	30.6	2.27	2.42	60,080	27.5	1.73	1.93	61,451	30.1	2.21	2.68
Total expenditure	1,733,516	750.6	55.59	59.39	1,914,252	877.1	54.98	61.60	1,530,551	748.8	54.91	66.69
Net profit	1,188,540	513.2	38.01	...	1,193,044	546.6	34.27	...	764,573	374.0	27.43	...
Increase in net profit over year ending 30 June, 1888.	423,967	...	...	...	428,471	...	...	...	...	...	...	...
(After paying working expenses.)	EXPENDITURE PERCENTAGE TO GROSS REVENUE, 59.39.				Expenditure percentage to gross revenue, 61.60.				Expenditure percentage to gross revenue, 66.69.			

* The total in 1888 includes the weight of coal and general goods carried for the service, but are not included in 1892 and 1893. † The weight and money of "other minerals" were included in general merchandise in 1888.

Percentage of Expenditure in each Division.

Divisions of Expenditure.	Year ending 30 June, 1893.	Year ending 30 June, 1892.	Year ending 30 June, 1888.
Maintenance of Way, Works, and Stations	27.27	25.29	28.03
Locomotive Power	32.07	33.64	30.48
Carriage and Waggon	7.43	8.40	8.35
Traffic Expenses	28.94	29.12	27.44
Compensation (Passengers)	1.0	0.19	1.38
Do (Goods)	1.1	0.22	0.32
General Expenses	4.08	3.14	4.00
	100.00	100.00	100.00

APPENDIX VII.

RETURN of the Number of Passengers, Tonnage of Goods, Earnings and Working Expenses, Total and per Train Mile, Percentage of Working Expenses to Gross Earnings, Net Earnings, Capital Invested on Lines open, and Interest on Capital each year, from 1855 to 1893, inclusive.

Year.	Length of Line.	Number of Passengers.	Tonnage of Goods.	Train Mileage.	Earnings from Coaching Traffic.	Earnings from Goods Traffic.	Total Earnings.	Working Expenses.	Earnings per Train Mile.	Working Expenses per Train Mile.	Percentage of Working Expenses to Gross Earnings.	Net Earnings.	Capital expended on Lines open.	Interest on Capital.
	Miles.	No.	Tons.	No.	£	£	£	£	d.	d.	%	£	£	%
1855	14	98,846	140	14,107	9,093	156	9,249	5,959	157.34	101.37	64.43	3,290	515,347	.63
1856	23	350,724	2,469	68,371	29,526	2,757	32,283	21,788	113.32	76.48	67.49	10,495	683,217	1.53
1857	40	329,019	20,847	107,822	34,970	8,417	43,387	31,337	96.58	69.75	72.23	12,050	1,023,838	1.17
1858	55	376,492	33,355	141,495	45,858	16,451	62,309	43,928	105.69	74.51	70.50	18,381	1,231,867	1.49
1859	55	425,877	43,020	147,618	46,502	15,258	61,760	47,598	100.41	77.38	77.07	14,162	1,278,416	1.10
1860	70	551,044	55,394	174,249	45,428	16,841	62,269	50,427	83.37	67.52	80.98	11,842	1,422,672	.83
1861	73	595,591	101,130	214,881	49,637	25,367	75,004	61,187	83.77	68.34	81.58	13,817	1,536,032	.89
1862	97	642,431	205,139	274,565	62,096	41,775	103,871	68,725	90.79	60.07	66.16	35,146	1,907,807	1.84
1863	124	627,164	218,535	315,177	71,297	52,644	123,941	96,867	94.38	73.76	78.16	27,074	2,466,950	1.09
1864	143	693,174	379,661	415,422	81,487	66,167	147,654	103,715	85.30	59.92	70.24	43,939	2,631,790	1.66
1865	143	751,587	416,707	483,446	92,984	73,048	166,032	108,926	82.42	54.07	65.60	57,106	2,746,373	2.07
1866	143	668,330	500,937	490,475	85,636	82,809	168,445	106,230	82.49	51.99	63.64	62,205	2,786,094	2.23
1867	204	616,375	517,022	600,751	87,564	101,508	189,072	117,324	82.02	46.87	62.08	71,748	3,282,320	2.18
1868	247	714,563	596,514	768,529	99,408	124,931	224,339	144,201	70.06	45.03	64.29	80,158	4,060,950	1.97
1869	318	759,635	714,113	893,552	109,427	155,548	264,975	176,362	71.17	47.37	66.67	88,613	4,681,325	1.89
1870	339	776,707	766,523	901,139	117,854	189,288	307,142	206,003	81.81	54.86	67.08	101,139	5,566,092	1.81
1871	358	759,062	741,986	931,333	129,496	225,820	355,322	197,065	91.57	50.79	55.46	158,257	5,887,258	2.68
1872	398	753,910	825,360	1,036,255	164,862	260,127	424,989	207,918	98.43	48.15	48.92	217,071	6,388,727	3.39
1873	403	875,602	923,788	1,109,879	178,216	306,020	484,236	238,035	104.71	51.47	49.16	246,201	6,739,918	3.65
1874	403	1,085,501	1,070,938	1,249,233	188,595	347,980	536,575	257,703	103.09	49.51	48.03	278,872	6,844,540	4.07
1875	473	1,288,225	1,171,354	1,472,204	205,941	408,707	614,648	296,174	100.20	48.28	48.18	318,474	7,245,379	4.30
1876	509	1,727,730	1,244,131	1,688,964	233,870	459,355	693,225	339,406	98.50	48.22	48.96	353,819	7,990,601	4.42
1877	598	2,957,144	1,430,041	2,106,802	271,588	544,332	815,920	418,985	92.95	47.73	51.35	396,935	8,883,177	4.46
1878	688	3,705,733	1,625,886	2,655,176	306,308	596,681	902,989	536,988	81.62	48.54	50.47	366,001	9,784,645	3.74
1879	734	4,317,864	1,720,815	2,932,463	319,950	632,416	952,366	604,721	77.94	49.49	63.49	347,645	10,406,495	3.34
1880	819	5,440,138	1,712,971	3,239,462	390,149	770,869	1,161,017	647,719	86.02	47.99	55.79	613,298	11,778,819	4.35
1881	995	6,907,312	2,033,850	3,923,929	483,675	955,551	1,444,226	738,334	88.33	45.16	51.12	705,892	13,301,597	5.20
1882	1,268	8,984,313	2,619,427	4,851,157	587,825	1,111,038	1,698,863	934,635	84.05	46.24	55.02	764,228	15,843,616	5.13
1883	1,320	10,272,037	2,864,566	5,937,261	661,751	1,269,713	1,931,464	1,177,788	78.07	47.61	60.97	753,676	16,905,014	4.48
1884	1,618	11,253,169	3,124,425	6,403,041	745,665	1,340,572	2,086,237	1,301,259	78.19	48.77	62.37	784,978	20,080,138	4.20
1885	1,732	13,506,346	3,273,004	6,838,399	830,904	1,343,464	2,174,368	1,458,153	78.61	52.72	67.06	716,215	21,831,276	3.37
1886	1,839	14,881,604	3,218,582	6,479,265	849,253	1,310,817	2,160,070	1,492,092	80.01	55.30	69.12	667,078	24,071,454	2.90
1887	2,036	14,451,303	3,339,253	6,472,107	850,499	1,357,796	2,208,295	1,457,760	81.88	54.05	66.01	750,535	26,532,122	2.96
1887-88	2,114	15,174,115	3,399,772	6,689,313	918,975	1,376,149	2,295,124	1,530,551	82.34	54.91	66.69	764,573	27,722,741	2.85
1888-89	2,171	16,086,223	3,485,839	7,641,769	1,025,601	1,512,876	2,538,477	1,634,602	79.72	51.34	64.39	903,875	29,839,167	3.14
1889-90	2,182	17,071,945	3,788,950	8,008,826	1,059,791	1,573,295	2,633,086	1,665,835	78.90	49.91	63.26	967,251	30,555,123	3.17
1890-91	2,182	19,037,760	3,802,849	8,410,421	1,177,037	1,797,384	2,974,421	1,831,371	84.88	52.26	61.57	1,143,050	31,768,617	3.59
1891-92	2,185	19,918,916	4,296,713	8,356,096	1,189,231	1,918,065	3,107,296	1,914,252	89.25	54.98	61.60	1,193,044	33,312,608	3.59
1892-93	2,351	19,932,703	3,773,843	7,505,310	1,115,042	1,812,014	2,927,056	1,738,516	93.60	55.59	59.39	1,188,540	34,657,571	3.48

The accounts were made up to the 31st December in each year up to 1887, since that time up to the 30th June in each year.
Camden and Fins Soud Tramways not included prior to 1888 in this return.

APPENDIX VIII.

STATEMENT showing the Average Rates of Pay made to the undermentioned class of
Employees in October, 1888, as compared with June, 1893.

Occupation.	October, 1888.				June, 1893.			
	No.	From	To	Average Rates.	No.	From	To	Average Rates.
		per day.	per day.	per day.		per day.	per day.	per day.
Locomotive engine-drivers, Railways ...	441	11/-	15/-	13/5½	359	11/-	15/-	13/11½
Locomotive firemen, Railways.....	468	8/-	10/-	9/1¼	418	9/-	10/-	9/10½
Locomotive cleaners, Railways	347	5/-	11/-	6/2½	375	3/3	10/-	6/10½
Fitters.....	309	7/-	14/-	10/5½	308	7/-	15/-	10/6¼
Turners	93	8/-	12/8	10/6	91	8/-	12/8	10/6¼
Machinists	57	5/6	10/2	8/8	78	7/6	12/-	8/10¼
Boiler-makers.....	96	8/-	12/2	10/2	123	8/-	14/-	10/4
Boiler-makers' assistants	83	6/-	9/2	7/2½	82	7/-	8/6	7/4
Moulders	24	7/6	14/-	9/11½	37	8/-	14/-	10/2½
Blacksmiths	129	7/-	16/-	10/7	120	8/-	16/-	10/11
Strikers	160	6/-	8/6	7/4¼	143	6/6	8/2	7/4¼
Tinsmiths	20	7/6	11/4	9/8¼	17	9/6	11/8	10/3¼
Pattern-makers	14	9/-	12/2	10/8½	8	10/-	15/-	11/2¼
Gas-fitters	17	4/-	12/-	8/10	26	6/6	12/-	9/8¼
Gas-makers	17	5/6	10/-	8/11½	17	7/-	11/5	9/4½
Carriage and wagon builders	184	7/-	11/8	10/0½	182	8/-	14/-	10/2¼
Carriage and wagon examiners	81	6/-	14/8	9/7½	80	7/-	13/-	9/6½
Carpenters	177	5/-	13/-	10/1¼	102	7/6	13/-	10/6½
Painters	94	6/-	11/2	5/1	98	8/-	12/-	9/3
Stationary engine-drivers.....	40	7/-	10/8	8/2	43	6/6	10/8	8/4½
Fuelmen.....	156	5/-	12/-	6½	127	6/-	9/-	7/4¼
Oilers	35	4/-	9/-	7/2½	26	4/-	10/8	7/7
Pumpers.....	73	7/-	11/-	8/3½	56	6/6	10/-	8/5¼
Guards	242	8/-	12/-	10/0½	262	8/6	12/-	10/2
Assistant guards	90	7/-	8/6	8/3	68	8/-	8/6	8/5¼
Porters	1,026	6/-	12/-	7/-	669	5/-	10/-	7/3¼
Junior porters	118	1/8	5/-	3/9½	328	2/6	5/-	4/3¼
Signalmen	139	6/-	11/-	8/6	197	7/-	11/6	9/1¼
Shunters.....	161	5/-	11/-	7/6½	155	6/-	11/-	7/9½
Gangers	514	8/-	12/-	9/0½	437	8/6	12/-	8/11½
Fettlers and labourers	2,818	5/-	10/-	7/3¼	2,413	6/-	9/-	7/4¼
		per annum.	per annum.	per annum.		per annum.	per annum.	per annum.
Station-masters	155	£150	£400	£222/14/-	159	£150	£400	£219/4/8
Officers-in-charge	127	£117	£210	£159/3/4	181	£130	£210	£149/12/2
Night officers	150	£60	£195	£119/8/1	175	£130	£200	£136/9/8
Clerks	362	£120	£500	£191/8/1	337	£125	£500	£190/1/10
Junior clerks	170	£26	£120	£91/10/5	273	£30	£120	£72/17/-
Operators	142	£50	£250	£101/19/10	73	£30	£200	£106/8/3

Every servant, except salaried officers, is granted a day's leave on full pay for each proclaimed public holiday (averaging about twelve days each year). An equivalent in money is allowed if the holidays cannot be taken.

In addition to the above, engine-drivers, firemen, guards, signalmen, and gangers are allowed six good conduct holidays.

Expenses, averaging 3s. per day, are also allowed to drivers, firemen, guards, and all others, when away from their home station.

Lodging-houses, with attendants, are also provided at all the principal depôts, for drivers, firemen, and guards, free of charge.

Station-masters and Officers-in-charge are allowed free houses.

Salaried Staff allowed three weeks' holiday per annum on full pay.

Free passes are also allowed, when on leave, to each member of the staff, including wife and family, not exceeding three persons.

APPENDIX IX.

RETURN of the Total Amount paid for Wages on the different Branches of the Railways during the years ending 30th June, 1893, 1892, and 1888.

Branches.	1893.	1892.	1888.
RAILWAYS:—	£	£	£
Maintenance Branch	340,080	417,216	394,891
Locomotive "	496,448	545,695	431,220
Traffic "	256,145	311,483	235,269
TOTAL..... £	1,092,682	1,274,394	1,061,389

NOTE.—Includes all wages paid by the Department, whether on Maintenance or New Works.

APPENDIX X.

STATEMENT of the Staff employed on the Railways and Tramways of New South Wales in June, 1893, as compared with October, 1888.

Branch.	October, 1888.			June, 1893.		
	No. of Salaried Staff.	No. of Wages Staff.	Total Staff.	No. of Salaried Staff.	No. of Wages Staff.	Total Staff.
RAILWAYS.						
Commissioners' and Secretary's Office	40	8	48	20	5	25
Chief Accountant	46	2	48	42	2	44
Traffic Audit	66	1	67	67	1	68
Stores	29	79	108	26	38	64
Permanent-way	156	3,140	3,296	111	2,404	2,515
Locomotive	146	3,213	3,364	155	3,284	3,439
Traffic	773	2,341	3,114	*874	2,320	3,194
Electrical	54	24	78	59	57	116
Interlocking	17	188	205	20	195	215
General.....	5	.....	5	11	3	14
	1,332	9,001	10,333	1,385	8,309	9,694
TRAMWAYS.						
Permanent-way	1	200	201	6	232	238
Locomotive	24	590	614	21	690	711
Traffic	14	201	215	11	268	279
Do Plattsburg .....	.....	19	19	.....	16	16
Stores	4	7	11	3	1	4
	43	1,017	1,060	41	1,207	1,248
TOTAL, RAILWAYS AND TRAMWAYS ...	1,375	10,018	11,393	1,426	9,516	10,942

* Includes 49 officers for additional stations and crossing places, 20 night-officers transferred from wages to salary list; also clerical positions formerly filled by men on wages list.

APPENDIX XI.

RETURN of the Mileage of Suburban Passengers on All Lines of Railway during the years ending 30th June, 1893, 1892, and 1888.

DESCRIPTION.	1893.	1892.	1888.
NUMBER OF ORDINARY PASSENGERS..... No.	10,264,755	10,148,765	7,413,868
NUMBER OF WORKMEN'S JOURNEYS .. " ..	2,499,708	2,577,996	1,738,284
NUMBER OF SEASON TICKET HOLDERS' JOURNEYS... " ..	4,049,214	4,240,094	3,227,760
TOTAL NUMBER OF PASSENGERS' JOURNEYS .. " ..	16,813,677	16,966,855	12,379,912
NUMBER OF MILES TRAVELLED..... MILES	95,917,445	92,609,491	70,172,793
AVERAGE MILEAGE PER PASSENGER .. " ..	5'70	5'46	5'67
AMOUNT RECEIVED FROM PASSENGERS .. " .. £	250,379	261,744	186,393
AVERAGE RECEIPT PER MILE PER PASSENGER..... D	0'63	0'68	0'64

Note.—Suburban Lines include only distances within 20 miles of Sydney and Newcastle, Liverpool and Morpeth included.

APPENDIX XII.

STATEMENT showing the cost of Construction and cost per Mile open on different sections of the Railway Lines, on the 30th June, 1893.

Lines opened for Traffic.	Length in Miles.	Total Cost.	Cost per Mile.
	m. ch.	£	£
Darling Harbour Branch.....	1 42½	358,958	234,421
Sydney to Granville	13 36¼	1,867,577	138,821
Granville to Wodonga	375 18½	4,912,570	13,092
Junees to Hay	167 35½	950,961	5,679
Narrandera to Jerilderie	64 54½	409,376	6,328
Granville to Bourke	490 23¼	5,362,874	10,938
Wallerawang to Mudgee	85 06	980,938	11,530
Blacktown to Richmond	16 12	175,146	10,844
Goulburn to Cooma	130 40	1,403,270	10,753
Cootamundra to Gundagai	33 45½	237,904	7,087
Orange to Molong.....	22 60	269,270	11,836
Murrumburrah to Blayney	110 63	1,078,142	9,781
Sydney to Kiama	71 53	1,947,807	27,180
Homebush to Waratah.....	93 08	2,622,249	28,185
Newcastle to Wallangara.....	392 54	4,952,711	12,612
Werris Creek to Narrabri	96 48	565,265	5,852
Bullock Island Branch	1 45½	85,220	54,323
Morpeth Branch	3 37½	60,895	17,555
Hornsby to Milson's Point	13 27½	410,243	30,744
Culcairn to Corowa	47 39	192,464	4,052
Kiama to Nowra	22 43½	321,544	14,263
Nyngan to Cobar	81 27¼	276,952	3,404
Campbelltown to Camden	7 65	38,927	4,983
Kogarah to Sans Souci.....	4 71	12,111	2,478
Yass Tramway	2 73	28,201	9,682
Average cost of construction	2,350 65	20,521,575	12,558
Rolling stock	£4,215,281		
Machinery	279,100		
Workshops	631,870		
Furniture	9,745		
		5,135,996	
Average and total cost, all charges	2,350 65	34,657,571	14,743

APPENDIX XIII.

STATEMENT showing cost of Additions to Stations, Buildings, Siding Accommodation, &c., and Rolling Stock, the cost of which was charged to Capital Account, during the year ending 30th June, 1893.

Particulars.	Amount.	Total.
	£	£
Additions to stations and buildings	7,307	
Equipment of stations, &c., cranes and weighing appliances	602	
Overbridges and subways	349	
Improvements to water supply	557	
Extending sidings and making additional sidings, loops, &c.	15,603	
Additions to signals and interlocking, &c.....	1,951	
Electric block arrangements and safety appliances	7,112	
Additional flood-openings and waterways	383	
Cost of land resumed	381	
	34,245	
Less—Cranes, &c., returned to stock	1,342	
	32,403	
Additional rolling stock	*£167,965	
Additional machinery	4,012	
Furniture	312	
	172,289	
		204,692

* Locomotives ordered in 1890.

APPENDIX XIV.

STATEMENT showing the length in miles of the different sections of the Railways of New South Wales, from the commencement to 30th June, 1893.

Date of opening.	From where opened.	To where opened.	Distance.	Date of opening.	From where opened.	To where opened.	Distance.
26 Sept., 1855..	Sydney.....	Parramatta.....	14 22½	28 Feb., 1881..	Junee.....	Narrandera.....	60 5
26 „ 1855..	Redfern.....	Darling Harbour*.....	1 42½	28 „ 1881..	Junee, north fork.....	.....	0 32
29 „ 1856..	Granville.....	Liverpool.....	8 64½	1 Sept., 1881..	Narrandera.....	Darlington.....	83 13½
5 April, 1857..	Near Newcastle..	East Maitland.....	17 8	9 Jan., 1882..	Tamworth.....	Moonbi.....	12 1½
9 Mar., 1858..	Near Newcastle..	Newcastle.....	1 0	1 Mar., 1882..	Darlington.....	Carrathool.....	34 7½
17 May, 1858..	Liverpool.....	Campbelltown.....	11 66½	10 „ 1882..	Campbelltown.....	Camden.....	7 65
27 July, 1858..	East Maitland.....	West Maitland.....	2 10½	15 May, 1882..	Wallerawang.....	Capertee.....	22 35
2 „ 1860..	West Maitland.....	Lochinvar.....	6 10½	4 July, 1882..	Carrathool.....	Hay.....	34 57½
4 „ 1860..	Parramatta.....	Blacktown.....	7 15	11 „ 1882..	Gunnedah.....	Boggabri.....	24 26½
12 Dec., 1861..	Blacktown.....	Rooty Hill.....	3 65	2 Aug., 1882..	Moonbi.....	Uralla.....	51 46½
24 Mar., 1862..	Lochinvar.....	Branxton.....	8 12½	1 Oct., 1882..	Boggabri.....	Narrabri.....	31 50½
1 May, 1862..	Rooty Hill.....	South Creek.....	5 7	20 „ 1882..	Dubbo.....	Nevertire.....	63 4
7 July, 1862..	South Creek.....	Penrith.....	4 11	3 Feb., 1883..	Uralla.....	Armidale.....	14 64½
1 Sept., 1862..	Campbelltown.....	Menangle.....	6 67½	9 June, 1883..	Nevertire.....	Nyngan.....	36 1
7 May, 1863..	Branxton.....	Singleton.....	14 40½	14 „ 1883..	Albury.....	River Murray.....	1 41
1 July, 1863..	Menangle.....	Picton.....	12 10½	3 Jan., 1884..	Joppa Junction.....	Tarago.....	23 30
2 May, 1864..	East Maitland.....	Morpeth.....	8 37½	9 June, 1884..	Capertee.....	Rylstone.....	30 70
1 Dec., 1864..	Blacktown.....	Richmond.....	16 12	19 Aug., 1884..	Armidale.....	Glen Innes.....	63 51½
1 Mar., 1867..	Picton.....	Mittagong.....	24 0½	2 Sept., 1884..	Nyngan.....	Byrock.....	78 10
11 July, 1867..	Penrith.....	Weatherboard.....	27 10	10 „ 1884..	Rylstone.....	Mudgee.....	81 52
2 Dec., 1867..	Mittagong.....	Sutton Forest.....	8 64	16 „ 1884..	Narrandera.....	Jerilderie.....	64 64½
1 May, 1868..	Weatherboard.....	Mount Victoria.....	15 19	15 Oct., 1884..	Sydney.....	Hurstville.....	8 63½
6 Aug., 1868..	Sutton Forest.....	Marulan.....	29 63½	4 Mar., 1885..	Tarego.....	Bungendore.....	19 20½
19 May, 1869..	Singleton.....	Muswellbrook.....	30 73	26 „ 1885..	Murrumburrah.....	Young.....	17 26
27 „ 1869..	Marulan.....	Goulburn.....	19 08½	26 „ 1885..	Murrumburrah—D.....	mondville fork*.....	0 26
18 Oct., 1869..	Mount Victoria.....	Bowenfels.....	19 48	8 Sept., 1885..	Byrock.....	Bourke.....	43 30
1 Mar., 1870..	Bowenfels.....	Wallerawang.....	7 48	21 Dec., 1885..	Orange.....	Molong.....	22 60
1 July, 1870..	Wallerawang.....	Rydal.....	6 5	26 „ 1885..	Hurstville.....	Sutherland.....	6 8
20 Oct., 1870..	Muswellbrook.....	Aberdeen.....	7 38½	9 Mar., 1886..	Sutherland.....	Waterfall.....	8 74½
17 April, 1871..	Aberdeen.....	Scone.....	8 49	9 „ 1886..	Loftus Junction.....	National Park*.....	1 14½
1 Aug., 1871..	Scone.....	Wingen.....	10 34½	1 June, 1886..	Cootamundra.....	Gundagai.....	38 45½
1 Jan., 1872..	Liverpool.....	Sidings, Colling-wood, &c.....	0 34	1 Sept., 1886..	Glen Innes.....	Tenterfield.....	17 41½
6 April, 1872..	Wingen.....	Murrurundi.....	12 75½	17 „ 1886..	Strathfield.....	Hornsby.....	14 9½
22 „ 1872..	Rydal.....	Locke's Platform.....	13 70	1 Nov., 1886..	Young.....	Cowra.....	46 25
1 July, 1872..	Locke's Platform.....	Macquarie Plains.....	5 49	7 April, 1887..	Hornsby.....	Hawkesbury.....	14 23½
4 Mar., 1873..	Macquarie Plains.....	Raglan.....	5 13	21 June, 1887..	Clifton.....	Wollongong.....	12 27½
4 Feb., 1876..	Raglan.....	Kelso.....	2 62	15 Aug., 1887..	Gosford.....	Waratah.....	49 65
9 Nov., 1875..	Goulburn.....	Gunning.....	30 20	15 „ 1887..	Woodville and Isling.....	ton loop*.....	0 23
4 April, 1876..	Kelso.....	Bathurst.....	1 34	8 Sept., 1887..	Bungendore.....	Queanbeyan.....	17 27½
3 July, 1876..	Gunning.....	Bowling.....	29 31	10 „ 1887..	Kogarah.....	Sans Souci.....	4 71
1 Nov., 1876..	Downing.....	Binalong.....	14 43	9 Nov., 1887..	Wollongong.....	North Klama.....	21 42½
1 „ 1876..	Bathurst.....	Blayney.....	27 70	7 Dec., 1887..	Queanbeyan.....	Michelago.....	30 20½
12 Mar., 1877..	Binalong.....	Murrumburrah.....	21 9	16 Jan., 1888..	Mullet Creek.....	Gosford.....	9 63½
19 April, 1877..	Blayney.....	Orange.....	19 75	16 „ 1888..	Tenterfield.....	Wallangarra.....	11 29½
18 Aug., 1877..	Murrurundi.....	Quirindi.....	24 79	13 Feb., 1888..	Cowra.....	Blayney.....	46 66
1 Nov., 1877..	Murrumburrah.....	Cootamundra.....	23 37	5 Oct., 1888..	Waterfall.....	Clifton.....	11 68½
2 April, 1878..	Newcastle.....	Bullock Island Branch.....	1 45½	1 May, 1889..	Brooklyn.....	Mullet Creek.....	4 67½
5 „ 1878..	Cootamundra.....	Bethungra.....	16 21½	31 „ 1889..	Michelago.....	Cooma.....	40 21½
6 July, 1878..	Bethungra.....	Junee.....	18 23½	1 Jan., 1890..	Hornsby.....	St. Leonards.....	10 29½
3 Sept., 1878..	Junee.....	North Wagga Wagga.....	17 37	1 July, 1890..	Wollongong.....	Harbour*.....	0 74
14 Oct., 1878..	Quirindi.....	Tamworth.....	37 24½	1 „ 1891..	Homebush loop*.....	.....	0 22½
25 Mar., 1879..	Werris Creek.....	Breeza.....	14 30½	20 April, 1892..	Railway Station.....	Yass.....	2 73
1 Sept., 1879..	North Wagga.....	South Wagga Wagga.....	4 49½	1 July, 1892..	Nyngan.....	Cohar.....	81 27½
11 „ 1879..	Breeza.....	Gunnedah.....	26 4½	3 Oct., 1892..	Culcairn.....	Corown.....	47 39
1 June, 1880..	Orange.....	Wellington.....	55 66	1 May, 1893..	St. Leonards*.....	Milson's Point.....	2 78
1 Sept., 1880..	South Wagga.....	Gerogery.....	59 13½	2 June, 1893..	Kiama.....	Nowra.....	22 43½
1 Feb., 1881..	Wellington.....	Dubbo.....	39 25				
3 „ 1881..	Gerogery.....	Albury.....	18 39½				
						Total, 30th June, 1893.....	2,350 65

Single, 2,192m. 60½c.; double, 149m. 42c.; quadruple, 8m. 42½c. Total, 2,350m. 65c.

* Omitted to be shown in past years Differences between this and last year's return are owing to slight corrections owing to remeasurement.

RAILWAY LOAN AND DEBENTURE ACCOUNT—

PARTICULARS.						Outstanding, 30 June, 1892.	RENEWED OR	
Year.	Vic.	No.	Amount authorised.	Debentures and Inscribed Stock issued.	Amount realised.		Paid from Consolidated Revenue	Renewed.
			£	£	£ s. d.	£	£	£
1852	16	39	217,500	217,500	223,936 3 4	.....	.....	17,500 50,000 150,000 264,200
1854	18	40	624,734	666,800	630,105 11 7	2,700	27,600	139,000
1855	19	38 & 40	112,500	112,500	107,821 0 0	.....	112,500	100,000
1856	20	1	200,000	203,000	199,997 10 0	.....	203,000	.....
1856	20	34	300,000	292,000	300,895 12 6	.....	500	298,500
1858	22	22	720,000	722,088	718,472 6 0	.....	1,518	674,341 23,731 22,408
1860	23	5	281,700	281,700	278,627 11 6	.....	.....	281,700
1860	23	10	88,370	88,800	86,495 14 0	.....	80	88,220
1861	24	24	8,320	8,346	8,176 17 0	.....	.....	8,346
1862	25	19	1,476,059	1,476,000	1,405,216 18 0	.....	.....	1,476,000
1862	26	14	29,907	29,938	25,266 15 0	29,938	.....	.....
1864	27	14	552,107	552,100	465,975 10 0	552,100	.....	.....
1865	29	5	139,000	139,000	125,216 15 2	.....	44,489	48,178 46,333
1865	29	9	94,800	94,800	83,597 14 0	94,800	.....	.....
1866	29	23	639,000	639,000	605,991 3 0	639,000	.....	.....
1866	30	23	33,000	33,000	31,045 1 6	33,000	.....	.....
1867	31	11	1,000,000	1,000,000	981,655 7 0	345,700*	673,100	.....
1868	31	27	7,131	7,122	7,148 6 0	.....	.....	.....
1869	32	13	70,000	70,000	69,581 3 6	70,000	.....	.....
1870	34	2	179,000	179,000	177,338 8 0	179,000	.....	.....
1870	34	2	100,000	100,000	99,971 16 4	100,000	.....	.....
1871	Var.	Accts	.....	249,043	243,396 3 2	249,018	.....	.....
1871	35	5	300,124	300,100	300,520 5 0	300,100	.....	.....
1872	36	2	137,257	137,200	142,561 10 0	132,212	4,988	.....
1872	36	2	50,000	50,000	51,953 17 11	50,000	.....	.....
Total, 5 per cents.			7,360,509	7,655,542	7,870,067 19 6	†2,784,720	1,201,075	3,688,547
1873	36	17	1,901,500	1,901,500	1,725,661 6 11	1,901,500	.....	.....
1873	36	21	48,178	50,106	48,178 0 0	50,106	.....	.....
1874	38	2	196,333	196,333	192,035 12 2	196,333	.....	.....
1874	38	2	.....	.....	.....	.....	.....	.....
1876	40	12	2,523,352	2,523,300	2,468,069 5 6	2,523,300	.....	.....
1877	41	4	.....	.....	.....	.....	.....	.....
1877	41	7	6,826,000	6,826,000	6,864,716 2 0	6,826,000	.....	.....
1879	43	11	.....	.....	.....	.....	.....	.....
1875	39	18	75,000	73,825	72,779 0 10	73,825	.....	.....
1880	44	12	412,000	412,000	409,138 17 0	412,000	.....	.....
1881	44	28	315,300	315,300	313,110 9 4	315,300	.....	.....
Total, 4 per cents.			12,297,663	12,298,364	12,093,688 13 9	‡12,298,364	.....	.....
1881	44	28	6,605,700	6,605,700	6,057,451 14 8	6,605,700	.....	.....
1881	45	22	500,000	500,000	449,758 2 0	500,000	.....	.....
1883	46	23	1,245,000	1,245,000	1,119,897 8 0	1,245,000	.....	.....
1884	48	26	2,275,935	2,275,935	2,206,123 0 0	1,496,500	.....	.....
1886	50	28	1,963,000	.....	.....	.....	.....	.....
1888	52	16	972,841	972,841	980,126 6 0	972,841	.....	.....
1888	52	17	875,500	.....	.....	.....	.....	.....
1889	53	23	369,920	.....	.....	.....	.....	.....
1889	53	23	1,920,859	.....	.....	.....	.....	.....
1890	54	33	1,689,550	1,016,145	998,257 15 0	939,764	.....	.....
1890	54	33	1,530,575	1,530,575	1,432,233 8 6	1,530,575	.....	.....
1892	55	35	757,889	.....	.....	.....	.....	.....
1893	56	24	246,550	.....	.....	.....	.....	.....
Total, 3½ per cents.			20,953,819	14,146,196	18,243,897 14 1	13,290,380	.....	.....
Grand total			40,611,491	34,100,102	32,707,654 7 4	†28,373,464	1,201,075	3,688,547

* For the redemption of this loan a sum of £70,000 is annually set apart to pay interest and principal, but the currency of the loan ceases on 1st January, 1898, when it is terminable (Funded Stock). ‡ To make up the total of the 4 per cent. loans the Interminable Debentures under 36 Victoria No. 2

XV.

LINES OPENED FOR TRAFFIC—JUNE 30TH, 1893.

PAID OFF.			IN FORCE.			Due dates of Debentures.			
Vic.	No.	Date.	Outstanding 30 June, 1893.	Rate per cent.	Interest payable Year ending 30 June, 1893.	Vic.	No.	Year.	Amount.
			£		£ s. d.				£
23	5	1860	.....	.....	.....	.....	.....	.....	.....
36	2	1873	.....	.....	.....	.....	.....	.....	.....
38	2	1874	.....	.....	.....	.....	.....	.....	.....
23	5	1860-1	.....	.....	.....	.....	.....	.....	.....
...	...	1860-1	.....	.....	.....	.....	.....	.....	.....
29	5	1886	2,700	5	135 0 0	.....	.....	Permanent.	.....
...	...	1876	.....	.....	.....	.....	.....	.....	.....
34	2	1871	.....	.....	.....	.....	.....	.....	.....
...	...	1876	.....	.....	.....	.....	.....	.....	.....
...	...	1876	.....	.....	.....	.....	.....	.....	.....
52	16	1879-88	.....	.....	.....	.....	.....	.....	.....
...	...	1888	.....	.....	.....	.....	.....	.....	.....
...	...	1879-88	.....	.....	.....	.....	.....	.....	.....
52	16	1888, July	.....	.....	.....	.....	.....	.....	.....
54	33	1891, Jan.	.....	.....	.....	.....	.....	.....	.....
54	33	1891, July	.....	.....	.....	.....	.....	.....	.....
53	23	1890	.....	.....	.....	.....	.....	.....	.....
53	23	1890	.....	.....	.....	.....	.....	.....	.....
54	33	1891, July	.....	.....	.....	.....	.....	.....	.....
54	33	1892, Jan.	.....	.....	.....	.....	.....	.....	.....
...	...	.....	29,938	5	1,496 18 0	26	14	1895	29,938
...	...	.....	552,100	5	27,605 0 0	27	14	1895	552,100
36	21	1873	.....	.....	.....	.....	.....	.....	.....
38	2	1874	.....	.....	.....	.....	.....	.....	.....
...	...	.....	94,800	5	4,740 0 0	29	9	1896	94,800
...	...	.....	639,000	5	31,950 0 0	29	23	1896	639,000
...	...	.....	33,000	5	1,650 0 0	30	23	1897	33,000
...	...	.....	326,900*	5	16,815 0 0	31	11	.....	.....
...	...	.....	7,122	5	356 2 0	31	27	1898	7,122
...	...	.....	70,000	5	3,500 0 0	32	13	1899	70,000
...	...	.....	179,000	5	8,950 0 0	34	2	1900	{ 279,000 249,048
...	...	.....	100,000	5	5,000 0 0				
...	...	.....	249,048	5	12,452 8 0	Var.	Acts	.....	.....
...	...	.....	300,100	5	15,005 0 0	35	5	1901	300,100
...	...	1873-5	182,212	5	6,610 12 0	36	2	1902	182,212
...	...	.....	50,000	5	2,500 0 0				
...	...	.....	† 2,765,920	5	138,766 0 0	.....	.....	.....	2,436,320†
...	...	.....	1,901,500	4	76,060 0 0	36	17	1903	1,901,500
...	...	.....	50,106	4	2,004 4 9	36	21	Interminable.‡	.....
...	...	.....	196,333	4	7,853 6 4	38	2	1908	1,213,561
...	...	.....	2,523,300	4	100,932 0 0				
...	...	.....	.....	.....	.....	38	2	.....	.....
...	...	.....	.....	.....	.....	40	12	1909	1,506,072
...	...	.....	.....	.....	.....	41	4	.....	.....
...	...	.....	.....	.....	.....	41	7	1910	2,307,129
...	...	.....	6,826,000	4	273,040 0 0	43	11	.....	.....
...	...	.....	.....	.....	.....	41	7	1933	4,518,871
...	...	.....	73,825	4	2,953 0 0	43	11	.....	.....
...	...	.....	412,000	4	16,480 0 0	39	18	1906	73,825
...	...	.....	315,300	4	12,612 0 0	44	12	1933	412,000
...	...	.....	.....	.....	.....	44	28	1924	315,300
...	...	.....	§ 12,298,364	4	491,934 11 1	.....	.....	.....	12,248,258§
...	...	.....	6,605,700	3½	231,199 10 0	44	28	1924	6,605,700
...	...	.....	500,000	3½	17,500 0 0	45	22	1924	500,000
...	...	.....	1,245,000	3½	43,575 0 0	46	23	1924	1,245,000
...	...	.....	2,273,935	3½	65,576 18 7	48	26	1924	1,239,909
...	...	.....	.....	.....	.....	48	26	1918	1,036,026
...	...	.....	972,841	3½	34,049 8 8	52	16	1918	972,841
...
...	...	.....	1,016,145	3½	|| 33,337 4 11	54	38	1918	2,546,720
...	...	.....	1,530,575	3½	53,570 2 5				
...
...	...	.....	14,146,196	3½	478,808 4 7	.....	.....	.....	14,146,196
...	...	.....	¶ 29,210,480	.....	1,109,503 15 8	.....	.....	.....	28,830,774 ¶

debentures outstanding will be paid off. † At the end of 1902 the loans raised at 5 per cent. will have been redeemed, with the exception of £2,700 permanent. ‡ Interest must be added. § Interest on £939,764 for twelve months, and £76,831 for two months. ¶ Does not include Tramway loans.

APPENDIX XVI.

RETURN showing the number of LIVE STOCK forwarded from the undermentioned Stations during the year ending 30th June, 1893.

Stations.	Number carried.					Stations.	Number carried.				
	Horses.	Cattle.	Calves.	Sheep.	Pigs.		Horses.	Cattle.	Calves.	Sheep.	Pigs.
Darling Harbour	967	1,023	487	4,506	18,050	Emu Plains	1	1	1	1	1
Ashfield	18	4	1	1	3	Springwood	4	1	1	1	2
Hillbush	8	1	1	1	1	Lawson	4	1	1	1	1
Flemington	405	5,015	97	100,491	119	Wentworth Falls	3	3	3	3	4
Bookwood	1	1	1	1	18	Katoomba	5	1	1	81	62
Granville	7	4	1	1	175	Blackheath	8	1	1	1	1
Fairfield	24	51	41	1	1	Mount Victoria	26	56	23	9,994	12
Cabramatta	1	93	54	1	31	Bell	6	1	1	1	1
Liverpool	6	780	789	87	701	Eskbank	8	1	2	1	1
Glenfield	1	1	1	1	8	Bowenfels	1	673	50	35,789	122
Lyellburn	6	69	1	1	6	Tarana	9	223	17	16,101	1,754
Yriso	7	165	7	1	444	Brewongle	1	1	1	11,480	1
Campbelltown	3	601	1,761	625	424	Raglan	1	2	2	8,377	1
Keenale	2	86	266	178	101	Kelso	64	705	47	41,223	110
Douglas Park	2	2	2	2	883	Bathurst	2	1	1	240	1
Picton	40	334	424	530	87	Perth	1	1	1	6,891	1
Balmoral	2	1	1	1	40	George's Plains	1	303	64	5,344	1
Hilltop	1	1	1	1	300	Newbridge	1	1	1	30,179	93
Mittagong	1	497	58	1,903	514	Blayney	35	200	1	20,601	1
Bowral	45	111	70	1	2,329	Millthorpe	11	1	1	6,051	1
Moss Vale	801	875	224	9,310	109	Spring Hill	1	1	1	82	1
Eveter	1	1	1	1	19	Orange	153	701	46	33,689	90
Dundamon	1	1	1	1	27	Warne	25	13	27	4,146	134
Narulan	53	464	377	16,401	214	Store Creek	1	1	1	1	1
Towrang	1	1	1	1,803	197	Stuart Town	3	1	1	2,944	51
Goulburn	305	2,426	676	98,780	8,555	Mumbil	1	1	1	893	1
Yarra	1	1	1	2,625	424	Springs	1	1	1	1,500	1
Breadalbane	1	811	176	16,726	96	Wellington	146	1,019	155	36,498	88
Cunning	26	361	168	18,123	96	Maryvale	1	1	1	2,207	1
Yass Junction	194	162	23	11,432	428	Genne	4	1	1	3	1
Yass Town	1	8	1	218	43	Dubbo	205	5,611	200	185,759	137
Bowring	15	41	1	8,306	563	Narranmore	21	349	15	31,338	1
Blainong	30	116	24	26,434	4,561	Trangie	35	733	146	37,117	397
Calong	1	1	1	4,561	231	Neverite	46	2,050	142	200,696	953
Harden	40	244	188	23,666	6,049	Mullengudgery	1	1	1	11,373	223
Wallendbeen	1	126	1	6,049	200	Nyngau	76	845	104	61,779	140
Cootamundra	72	181	1	10,434	3,332	Girilambone	1	2,28	1	640	1
Bethungra	7	1	1	3,332	1,235	Coolah	1	1	1	32,909	1
Illabo	1	1	1	1,235	4,447	Lyreux	22	1	1	107,051	1
June Junction	46	143	69	4,447	43	Bourke	207	10,295	1	107,051	1
Bomen	1	1,037	1	2,164	826	Riverstone	68	18	25	30	1,218
Wagga	55	2,223	3	21,077	55	Mulgave	51	51	9	1	173
The Rock	52	46	1	13,681	4,881	Windsor	61	65	71	1	255
Yerong Creek	1	1	1	4,881	100	Clarendon	1	1	2	1	45
Henty	1	1	1	100	11,764	Richmond	27	60	74	1	257
Calcairn	5	183	1	11,764	147	Carcar	2	43	1	12,694	1
Gerogery	1	2	1	147	1,100	Lyndhurst	1	20	1	2,076	1
Yamba	22	4	1	1,100	607	Woodstock	1	106	15	16,307	186
Albury	437	7,332	251	12,532	149	Cowra	92	727	80	70,341	1,375
Tarago	95	1,470	359	32,022	132	Boremore	9	1	1	2,325	1
Dungendore	83	661	234	35,956	85	Moiung	8	80	1	6,303	1
Queanbeyan	83	240	30	15,673	176	Cape Lee	5	1	1	11,343	157
Michelago	68	50	1	1,000	400	Rylstone	166	2,454	876	84,706	345
Cooma	148	936	41	41,292	380	Mudgee	64	2,539	74	80,262	142
Coolac	3	341	33	4,273	2,949	Cobar	6	1	1	1	1
Gundagai	114	911	70	10,542	200	Gosford	12	3	1	1	25
Young	13	1,002	64	68,289	1	Wyong	1	1	1	1	21
Koorawatha	10	19	1	20,859	19	Morissett	1	19	1	1	1
Old Junee	1	243	12	16,294	1	Adamstown	1	1	1	1	1
Coolman	30	18	19	33,110	20	Newcastle	2	6	3	405	1
Grong Grong	1	20	1	230	45,353	Honey suckle Pt.	1	1	1	1	81
Narrandera	32	3	1	45,353	2,127	Warrah	1	20	3	40	34
Walla Walla	1	1	1	2,127	844	Wallsend	1	3	2	1	1
Burrumbuttock	1	1	1	844	184	Hexham	1	3	2	1	1
Brocklesby	1	1	1	184	1,270	Tarro	1	1	1	36	86
Corown	3	1	1	1,270	13,425	East Maitland	32	61	21	1,714	48
Yanko	1	1	1	13,425	17,804	Morpeth	3	1	1	1	1
Whitton	3	1	1	17,804	59,974	West Maitland	250	1,651	491	7,178	9,176
Darlington	3	21	5	59,974	33,228	Farley	767	4,553	231	18,041	124
Bringagee	1	1	1	33,228	64,639	Locumbar	296	2,538	843	220	532
Carathool	1	64	33	64,639	64,748	Allandale	1	1	1	1	1
Hay	80	66	25	64,748	39,554	Branxton	32	53	446	65	439
Morundah	11	46	27	39,554	30,177	Whittingham	69	2,248	140	1,495	204
Jerilderie	6	21	1	30,177	1	Singleton	336	4,339	1,351	5,569	4,453
Marrickville	1	1	3	1	1	Glennie's Creek	1	1	1	278	402
Rockdale	1	1	1	1	1	Ravensworth	6	510	101	5,113	262
Hurstville	1	1	1	1	1	Muswellbrook	265	1,390	1,020	27,038	340
Sutherland	1	4	3	108	1	Aberdeen	3	218	956	10,062	2,582
Helensburgh	2	3	1	1	1	Seone	261	2,537	292	17,805	233
South Clifton	8	1	1	1	1	Wingen	6	100	17	600	1
Bull	1	1	7	1	1	Blandford	1	1	1	1	1
Corrimal	1	1	1	1	39	Murrurundi	14	128	1	5,845	36
Wollongong	52	10	12	236	234	Ardelen (late D'ghby Hill's)	1	1	1	13	1
Unanderra	1	67	223	1	373	Willow Tree	14	3,723	10	58,631	7
Dapto	62	13	197	1	867	Quirindi	69	3,729	264	246,709	14
Albion Park	49	275	532	1	2,146	Werris Creek	55	336	125	14,191	61
Shellharbour	1	8	76	1	151	Breeza	350	6,386	691	100,262	433
Kiama North (late Kiama)	113	56	122	1	1	Curlew	2	1	1	101	161
Kiama	1	3	3	40	90	Gunnedah	99	2,927	637	140,853	104
Berry	2	2	1	90	5,552	Boggabri	31	4,041	46	69,035	1
Camden	23	53	1,080	389	125	Narrabri	121	6,799	150	632,732	120
Ryde	1	5	1	1	88	Currabubula	2	76	24	6,342	1
Eastwood	2	5	1	1	13	West Tamworth	169	1,662	109	41,432	594
Carlingford	1	2	1	1	1	Tamworth	2	1	1	163	1
Thornleigh	1	2	1	1	1	Walcha Road	12	19	1	5,496	208
Hornsby	4	3	1	1	1	Kentucky	1	1	1	600	1
Gordon	1	1	1	1	1	Uralla	31	177	1	8,779	1
Chatswood	1	1	14	1	1	Armidale	40	22	30	344	11
St. Leonards	1	11	1	1	717	Dumaresq	11	13	83	1	1
Parramatta	14	26	7	1	67	Black Mountain	13	21	1	2,300	54
Wentworthville	1	5	4	1	1	Guya	10	1	1	1,291	46
Seven Hills	1	1	1	1	1	Ben Lomond	1	1	1	302	1
Blacktown	10	809	40	373	1	Glencoe	4	8	1	2,061	1
Rooty Hill	98	138	80	1	8	Glen Innes	31	822	1	3,296	51
Mt. Druitt	1	1	11	1	1	Deepwater	1	56	62	422	14
Penrith	451	125	242	52	17	Fenterfield	672	1,027	20	61	217
St. Mary's	34	378	235	43	11	Jannans	107	1,627	1	7,334	1,451
Kingswood	1	1	2	1	1						
Total, year ending 30th June, 1893	10,690	116,255	20,917	3,790,763	33,048						
" " " " " " " " " " " "	13,450	148,953	21,229	3,183,609	33,119						

APPENDIX XVII.

RETURN of the number of Bales of WOOL forwarded on the New South Wales Government Railways, during the years ending 30th June, 1893 and 1892.

Stations.	Number of Bales.		Stations.	Number of Bales.		Stations.	Number of Bales.	
	1893.	1892.		1893.	1892.		1893.	1892.
Sydney		88	Narrandera	17,516	18,399	Mandurama	1,437	1,360
Darling Harbour	4,367	3,185	Yanko	1,429	1,552	Lyndhurst	987	1,066
Rookwood	20		Whitton	4,402	7,192	Woodstock	1,511	1,447
Liverpool	4,568	2,639	Darlington	3,274	4,589	Cowra	21,353	23,347
Ingleburn		3	Bringagee	2,259	1,392	Borenore	9,666	10,172
Minto	29		Carrathool	2,951	3,038	Molong	12,102	10,790
Campbelltown	15		Hay	5,476	2,932	Piper's Flat	30	19
Picton	2		Morandah	2,760	2,581	Capertee	884	766
Mittagong	245	196	Jerilderie	4,711	6,173	Ryistone	1,647	1,351
Moss Vale	486	279	Albion Park		4	Mudgee	18,293	15,986
Marulan	1,153	853	Camden	43	14	Teralba	3	
Towrang	555	794	Parramatta	1	24	Newcastle	63	149
Goulburn	8,469	10,541	Wentworthville		41	Morpeth	20	6
Breadalbane	427	481	Blacktown		1,140	East Maitland		1
Gunning	2,881	2,970	St. Mary's	2		West Maitland	3,263	3,489
Jerrawa	134	140	Mount Victoria	546	407	Lochinvar		2
Yass Junction	2,828	5,923	Eskbank	2		Greta		2
Yass Township	1,839		Bowenfels	127	123	Branxton	229	255
Bowning	2,867	3,619	Wallerawang	1,521	1,357	Whittingham	286	307
Binlong	5,017	4,985	Rydal	94	89	Singleton	378	324
Galong	1,918	1,770	Tarana	910	949	Glenne's Creek	59	80
Harden	1,722	1,698	Locksley	63	84	Ravensworth	752	580
Murrumburrah	344	309	Brewongle	486	458	Muswellbrook	8,188	6,842
Nubba	236	242	Raglan	156	211	Aberdeen	2,186	462
Wallendbeen	2,236	2,121	Kelso	1,585	1,327	Scone	5,947	4,643
Cootamundra	8,094	8,046	Bathurst	2,422	3,228	Wingen	351	395
Bethungra	893	1,216	Perth	1,680	1,735	Blandford	1,896	1,563
Illabo	1,360	1,251	George's Plains	48	63	Murrurundi	257	136
Junee Junction	3,617	3,350	Wimbleton	263	295	Ardglen (late Dough-	751	517
Harefield	478	588	Newbridge	1,698	1,521	boy Hollow).		
Bomen	13	13	Blayney	544	536	Willow Tree	3,015	3,768
Wagga	9,753	9,222	Millthorpe	1,258	899	Quirindi	8,370	8,229
Uranquity	1,292	1,383	Spring Hill	228	296	Werris Creek	727	795
The Rock	5,081	5,285	Orange	1,246	1,076	Currabubula	2,960	2,101
Yerong Creek	3,136	3,497	Mullion Creek	795	835	West Tamworth	16,850	14,762
Culcairn	3,756	3,542	Kerr's Creek	197	166	Tamworth	763	762
Burrumbuttock	671		Warne	1,010	914	Moonbi	1,111	988
Brocklesby	236		Storo Creek	75	63	Woolbrook	722	614
Corowa	36		Stuart Town	310	254	Walcha Road	5,951	4,962
Gerogery	491	318	Mumbil	1,288	1,181	Kentucky	1,702	1,511
Yambla	4		Dripstone	213	203	Uralla	8,162	7,583
Tarago	1,578	1,674	Wellington	2,399	2,163	Armidale	4,756	3,463
Bungendore	2,972	3,086	Mary Vale	365	337	Dumaresq	1,206	1,085
Queanbeyan	5,308	5,192	Geurie	484	318	Black Mountain	462	633
Michelago	2,672	2,523	Murrumbidgee	1,684	2,419	Guyra	2,160	1,613
Cooma	9,715	10,557	Dubbo	16,775	22,477	Ben Lomond	811	622
Menangle	12	20	Narramine	8,991	9,591	Glencoe	363	418
Douglas Park	15		Trangie	10,769	12,954	Glen Innes	13,963	11,992
Bowral	8	7	Nevertire	29,583	26,757	Dundee	1,489	1,180
Exeter		6	Mullengudgery	1,160	4,101	Deepwater	1,421	933
Yarra		2	Nyngan	10,699	20,263	Bolivia	47	21
Coolah		221	Boppy Mountain	1,545		Tenterfield	683	237
Henty	754	679	Cobar	4,255		Jennings	274	442
Coolac	946	808	Girilambona	6,305	7,329	Breza	2,305	1,916
Gundagai	5,244	4,265	Coolabah	2,988	5,415	Curlewis	1,214	882
Demondrille	212	205	Byrock	6,306	10,211	Gunnedah	9,042	9,203
Young	17,813	18,084	Bourke	75,892	87,000	Boggabri	3,195	3,032
Koorawatha	686	1,732	Riverstone	211	126	Bann Bau	356	418
Old Junee	2,981	3,233	Mulgrave	135	401	Narrabri	66,084	68,270
Coolman	5,028	6,954	Windsor	2,072	1,818			
Grong Grong	2,417	2,547	Carecar	94	199			
						Total	638,629	661,893

APPENDIX XVIII.

COMPARATIVE Abstract of the Tonnage and Amount received for the Carriage of
COAL and SHALE from the various Collieries during the years ending 30th June,
 1893 and 1892.

Stations.	1893.		1892.		Increase.		Decrease.	
	Tons.	Freight.	Tons.	Freight.	Tons.	Freight.	Tons.	Freight.
A.A. Company	2,228	93	20,851	879	.....	.....	18,623	786
Anvil Creek	6,152	560	289	26	5,863	534	.....	.....
Abrams (Homeville).....	190	21	9,077	755	.....	.....	8,887	734
Blackwall	1,338	541	1,188	526	150	15	.....	.....
Burwood.....	41,768	1,786	89,347	3,725	.....	.....	47,579	1,939
Burwood Extended	5,242	267	17,295	865	.....	.....	12,053	598
Burwood West	8,780	368	7,966	332	814	36	.....	.....
Burwood No. 3	16,512	701	.....	.....	16,512	701	.....	.....
Burwood Coal Siding .....	.....	.....	99	5	.....	.....	39	5
Co-operative	74,788	3,478	107,721	5,237	.....	.....	32,933	1,759
Curlewis	451	150	470	135	.....	15	19	.....
Dudley (Burwood, South)	62,216	3,908	59,701	3,930	2,515	.....	.....	22
Dulwich	4,166	784	2,192	419	1,974	365	.....	.....
East Maitland	3,692	551	3,523	226	169	325	.....	.....
Elenora	10,661	533	9,768	491	893	42	.....	.....
Ferndale.....	14,989	367	14,173	369	816	.....	.....	2
Gladstone	35	7	.....	.....	35	7	.....	.....
Great Northern	35,764	2,838	64,688	3,941	.....	.....	28,884	1,103
Greta	107,137	9,254	118,114	10,344	.....	.....	10,977	1,090
Greta East.....	1,078	99	.....	.....	1,078	99	.....	.....
Hetton	150,281	4,392	178,017	5,111	.....	.....	27,736	719
Hillside	2,759	118	8	1	2,751	117	.....	.....
Lambton.....	210,332	8,764	209,224	8,512	1,108	252	.....	.....
Lambton East	4,337	209	16,473	855	.....	.....	12,136	646
Lambton South, New	39,602	1,649	56,292	2,331	.....	.....	16,690	682
Minmi (Duckenfield)	240,047	12,055	245,728	12,316	.....	.....	5,681	261
Muswellbrook.....	175	19	.....	.....	175	19	.....	.....
Monkwearmouth (Seaham)	47,937	2,621	313	18	47,624	2,603	60,962	2,662
Newcastle	119,018	5,000	179,980	7,602	.....	.....	.....	.....
Northumberland .....	.....	.....	11	4	.....	.....	11	4
Northern Extended	12,842	698	.....	.....	12,842	698	.....	.....
Purified	11,751	2,201	10,356	2,123	1,395	78	.....	.....
Rix's Creek.....	3,559	1,783	4,672	2,297	.....	.....	1,313	514
Sneddon's (Wallsend)	22,199	925	20,913	945	1,286	.....	.....	20
Thornton	1,526	89	.....	.....	1,526	89	.....	.....
Wallsend	281,742	11,912	323,207	13,778	.....	.....	41,465	1,836
Wallsend South	25,353	1,061	36,806	1,847	.....	.....	11,453	786
Wallsend West	73,951	5,620	77,716	5,103	.....	517	3,762	.....
Wallsend, Young	3,931	220	40,510	2,211	.....	.....	36,576	1,991
Waratah	39,615	1,561	89,901	3,863	.....	.....	50,286	2,302
Wickham and Bullock Island	166,265	4,158	167,651	4,340	.....	.....	1,383	191
Total, North	1,854,408	91,391	2,184,330	105,531	99,526	6,512	429,418	20,652
Austinmer	150	4	182	36	.....	.....	32	32
Bellambi	21,025	4,292	18,702	4,241	2,323	61	.....	.....
Bulli	11,147	4,200	12,430	3,407	.....	793	1,283	.....
Bong Bong	1,566	195	1,517	190	49	5	.....	.....
Curson's Siding	5,838	1,564	8,501	1,543	.....	16	2,663	.....
Corrimal	75,628	1,196	55,521	998	20,107	198	.....	.....
Cox's Siding	143	15	215	24	.....	.....	72	9
Helensburgh (Metropolitan)	96,031	12,666	69,774	9,355	26,257	3,311	.....	.....
Irondale	6,689	1,192	62	34	6,627	1,158	.....	.....
Joadja	3,571	855	376	92	3,195	763	.....	.....
Lathgow Collieries.....	92,676	33,989	141,468	56,440	.....	.....	48,782	22,451
Mittagong Coal Siding	428	58	745	126	.....	.....	317	68
Mount Kembla	2,791	948	913	459	1,878	489	.....	.....
Mount Kiera	668	136	2,020	306	.....	.....	1,352	170
Mount Pleasant.....	4,054	393	993	245	3,061	143	.....	.....
North's Siding	5,935	1,595	10,763	2,798	.....	.....	4,828	1,203
South Clifton	71,131	12,032	40,954	6,038	30,177	5,994	.....	.....
Southern Coal Company .....	.....	.....	1,937	1,036	.....	.....	1,937	1,036
Onkey Park	72	3	257	13	.....	.....	185	10
Total, South, West, and Illawarra	399,543	75,333	367,320	87,386	93,674	12,926	61,451	24,979
Total, Coal	2,253,951	166,724	2,551,650	192,917	193,200	19,438	490,899	45,631
Hartley Vale	15,389	5,959	15,287	5,222	102	737	.....	.....
Joadja	8,181	2,838	12,978	4,167	.....	.....	4,797	1,320
North's Siding	16,244	4,603	5,209	1,640	11,037	2,963	.....	.....
Doughboy Hollow.....	11	9	.....	.....	11	9	.....	.....
Total, Shale	39,827	13,409	33,474	11,029	11,150	3,709	4,797	1,329
Grand Total, Coal and Shale	2,293,778	180,133	2,585,124	203,946	204,350	23,147	495,696	46,960

APPENDIX XIX.
COAL EXPORTED FROM NEWCASTLE.

RETURN of the quantity of **COAL EXPORTED** from Newcastle to Foreign and Intercolonial Ports for the years ending 30th June, 1893 and 1892, showing the increase and decrease in each.

Countries.	1892-93.	1891-92.	Increase.	Decrease.
	Tons.	Tons.	Tons.	Tons.
Victoria	720,845	828,963	.....	99,118
New Zealand	146,977	155,030	.....	8,053
South Australia	131,605	188,099	.....	56,594
Tasmania	70,373	68,509	1,864	.....
Western Australia	23,410	26,520	.....	3,110
Fiji	10,265	10,151	114	.....
Queensland	14,594	18,234	.....	3,640
Total, Intercolonial	1,126,960	1,295,506	.....	168,537
Foreign—				
Sumatra .....	.....	.....	.....	.....
Peru	15,790	33,576	.....	17,786
New Caledonia	13,740	16,406	.....	2,666
India	20,190	28,684	.....	2,494
United States	256,381	313,246	.....	56,865
Hong Kong	21,686	9,200	12,486	.....
China .....	.....	.....	.....	.....
Mauritius	7,539	15,773	.....	8,234
Philippine Islands	45,026	48,004	.....	2,978
Chili	165,915	201,757	.....	35,842
Sandwich Islands	23,680	36,445	.....	7,765
Java	35,301	32,499	2,802	.....
Siam .....	.....	.....	.....	.....
Guam .....	.....	.....	.....	.....
Mexico	6,952	11,439	.....	4,487
New Guinea	540	5,323	.....	4,783
South Sea Islands	1,556	1,913	.....	387
Cape of Good Hope .....	.....	.....	.....	.....
Solomon Islands	520	.....	520	.....
Singapore	12,158	39,271	.....	27,113
Other Countries	17,863	16,698	1,165	.....
Total, Foreign	655,837	810,264	.....	154,427
Grand Total (Intercolonial and Foreign)	1,782,806	2,105,770	.....	322,964

NUMBER of Tons and Value of Coal exported to Foreign and Intercolonial Ports for the years ending 30th June, 1893 and 1892.

1892-93.		1891-92.		Decrease.	
Tons.	Value.	Tons.	Value.	Tons.	Value.
	£		£		£
1,782,806	730,463	2,105,770	1,037,135	322,964	246,672

PORT OF NEWCASTLE.
Foreign and Intercolonial Shipping out of Newcastle.
FROM JUNE TO JUNE.

1892-93.		1891-92.		Decrease.	
No. of Vessels.	Tonnage.	No. of Vessels.	Tonnage.	No. of Vessels.	Tonnage.
1,217	1,319,155	1,377	1,459,957	160	140,802

APPENDIX XX.

RAILWAYS.

PERMANENT-WAY Materials, Rails for Renewals, and Miscellaneous Articles imported for the New South Wales Railways during year ending 30th June, 1893.

Date of Arrival.	Name of Ship.	Description of Material.	Supplied by	Weight.	Rate.	Invoice Cost.	Freight.	English Charges	Colonial Charges	Total Cost.	Cost per ton or Article.
				T. c. q. lb.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
17 June	Baltimore	4 tablet balance cylinders	Stevens & Sons		1 1 6	93 1 0	1 11 2	2 0 2	0 17 1	97 9 5	24 7 4
17 "	"	6 tablet locks for sidings	"		15 0 0						
17 "	Derwent	306 steel bars	The Steel Co. of Scotland	6 0 0 0	9 0 0	52 13 0	6 0 0	1 5 0	1 0 5	60 18 5	10 3 1
14 "	"	1000 rubber springs	The North British Rubber Co.		0 2 10	141 13 4	0 15 5	2 10 8	1 8 6	140 16 11	0 2 11
24 "	Province	4 passenger engines	Beyer, Peacock, & Co.		3450 0 0	14770 0 0		100 7 11		14969 7 11	3742 6 11
17 "	Baltimore	Pig iron	Coltness Iron Co.	0 17 0 4	2 13 0	2 9 4	0 16 8	0 4 7	0 2 4	3 12 11	4 5 7
24 "	Culgoa	Loco. packing	Loco. Packing Co.	4 7 0 0	6 12 0	497 2 0	8 4 2	7 15 2	4 0 9	517 2 1	118 17 6
24 "	"	3 iron plates, B.B.H.	Patent Shaft & Axletree Co.	0 13 1 8	10 15 0	7 3 2	0 10 6	0 8 9	0 2 4	8 4 0	12 7 4
25 "	Yarrowonga	4 charcoal iron dome casings	Isaac Storey & Sons		5 5 0	21 0 0	1 17 4	0 12 3	0 3 10	23 13 6	5 18 4
25 "	"	8 Gresham's injectors	Gresham & Craven		8 8 0	07 4 0	0 10 6	1 6 2	0 11 9	69 12 5	8 14 1
21 July	Miltiades	20 steel ramps	Samuel Osborne	2 3 1 18	3 10 0	101 10 0	1 7 8	1 14 1	1 1 1	105 12 10	8 12 10
"	Glenesslin	2 bogie passenger engines	Beyer, Peacock, & Co.		8660 0 0	7385 0 0		99 14 0		7484 14 0	3742 7 0
22 Aug.	Friar's Crag	6 drifts	C. Tennent, Sons, & Co.	0 0 0 7	0 0 10 4	3 18 1	0 12 6	0 4 10 0	0 1 2	4 16 7	13 5 8
22 "	"	30 bars steel	"	0 7 0 17	9 10 0						
3 "	Pericles	25 back ramps	Thomas Firth & Sons		5 5 0	183 15 0	2 4 8	2 18 2	1 11 9	190 9 7	5 8 10
25 June	Yarrowonga	Rivets, Lowmoor	Lowmoor Co. (Less 2 1/2%)	2 0 0 0	1 5 6	49 14 0	1 8 4	1 7 6	0 11 1	53 0 11	26 10 5 1/2
17 July	Fifeshire	75 B. Channel iron	Patent Shaft & Axletree Co.	9 11 1 26	10 0 0	85 14 10	5 0 2	1 13 3	1 11 7	104 6 4	10 17 3
17 "	"	75 bars B.E. angle iron	"	6 2 0 2	9 10 0	57 19 2	9 4 0	0 19 4	1 1 8	63 4 2	10 7 2 1/2
17 "	"	228 " " bar	"	7 16 2 25	9 0 0	70 10 6	4 2 3	1 3 8	1 7 7	77 4 0	10 9 8
17 "	"	75 B.B. plates	"	2 10 0 21	9 15 0	28 17 1	1 11 0	0 9 11	0 8 4	31 0 4	10 12 2
17 "	"	12 safety-valve springs	George Salter		9 9 0	5 14 0	0 10 6	0 7 9	0 4 0	6 16 3	0 11 4 1/2
17 "	"	1000 brass loco tubes	Elliot's Metal Co.	12 16 3 6	0 14 5 1/2	722 3 6	14 3 9	9 11 3	3 0 2	754 2 10	0 15 1
24 "	Murrumbidgee	Clamp bolts	The Westinghouse Brake Co.	0 2 0 0	6 19 6	13 19 0	0 10 6	0 10 2	0 5 0	15 4 8	132 6 8
24 "	"	2 sets tablet apparatus	Tyer & Co.		50 0 0	100 0 0	1 15 9	1 13 0	1 1 4	104 10 3	52 5 0 1/2
24 "	"	1 block indicator	"		3 10 0	3 10 0	0 1 5	0 1 2	0 0 4	3 12 11	3 12 11
24 "	"	6 " line through switch	"		1 10 0	9 0 0	0 3 5	0 3 7	0 1 1	9 8 1	1 11 4
24 "	"	1 signal repeater	"		3 0 0	3 0 0	0 1 2	0 1 1	0 0 4	3 2 7	3 2 7
24 "	"	1 slot signal repeater	"		4 0 0	4 0 0	0 1 6	0 1 7	0 0 6	4 3 7	4 3 7
24 "	"	3 signal repeaters	"		0 15 0	3 5 0	0 0 10	0 0 10	0 0 6	2 6 11	0 15 8
24 July	Glenogon	4 loco. engines	Beyer, Peacock, & Co.		14770 0 0	14770 0 0		105 17 2		15035 17 2	3758 19 3 1/2
24 "	Murrumbidgee	1 point indicator	Tyer & Co.		4 10 0	4 10 0	0 1 8	0 1 7	0 0 7	4 13 10	4 13 10
24 "	"	1 tablet	"		7 10 0	7 10 0	0 2 8	0 3 4	0 0 11	7 16 11	7 16 11
24 "	"	50 steel carriage axles	Brown, Bayley, & Co.	9 7 0 16	2 15 0	137 10 0	4 18 3	2 7 3	1 18 7	140 14 1	2 15 8 1/2
4 Sept.	Argonaut	10000 fire bricks	Glenboig Union Fireclay Co.		3 5 0	32 10 0	39 7 6	0 14 0	3 18 3	76 7 9	7 12 9 1/2
3 "	Brilliant	25 sets metallic packing	Beyer, Peacock, & Co.		2 10 0	62 10 0	0 10 6	1 1 9	0 12 6	64 14 9	2 11 9 1/2
1 Aug.	Woolloomooloo	200 iron plates	Lalleshall & Co.	19 11 0 0	7 12 6	149 1 4	10 5 3	2 12 8	3 0 6	164 10 9	8 8 9 1/2
28 July	Ormuz	6 sets tablet apparatus	Tyer & Co.		47 0 0	235 0 0			0 1 11	285 1 11	47 10 4
6 Aug.	Rome	24 iron plates	Lowmoor Co.	11 19 1 14	1 6 3	306 6 6	7 17 1	4 17 11	2 9 2	321 10 8	20 16 1
4 "	Indrapura	291 station labels	McCaw, Stevenson, & Orr			39 14 0	1 2 0		0 0 1	40 16 1	0 2 9 1/2
1 "	Woolloomooloo	100 carriage axles	Brown, Bayley, & Co.	18 10 1 22	2 15 0	275 0 0	9 14 6	4 11 11	3 16 6	293 2 11	2 18 7 1/2
4 Sept.	Brilliant	6 sets tablet apparatus	Tyer & Co.		40 0 0	240 0 0	1 7 4	0 3 0	2 6 0	243 16 10	40 12 9 1/2
4 "	"	1 point-lock for siding	"		12 0 0	12 0 0	0 1 3		0 1 9	12 3 0	12 3 0
4 "	"	1 "	"		16 0 0	16 0 0	0 1 8		0 2 4	16 4 0	16 4 0
4 "	"	12 train indicators	"		14 0 0	163 0 0	0 16 0		1 4 6	170 0 0	14 3 4 1/2
4 "	"	2 repeaters for semaphore	"		2 10 0	6 0 0	0 0 7		9 0 9	5 1 4	2 16 5
4 "	"	2 "	"		1 5 0	2 10 0	0 0 4		0 0 5	2 10 9	1 5 4 1/2
6 "	Hubbuck	100 steel carriage axles	Brown Bayley Steel Co.	18 10 2 24	2 15 0	275 0 0	9 14 8	4 10 2	3 16 6	293 1 4	2 18 7 1/2
6 "	"	50 buffers	C. Cunnell & Co.	3 13 1 21	1 13 0	82 10 0	2 8 2	1 10 9	0 19 2	87 8 1	1 14 11 1/2
6 "	"	24 fire-hole plates	Nevill, Druce, & Co.	6 15 0 18	69 2 0	422 8 3	4 18 6	6 12 7	3 14 10	497 9 2	64 15 10
26 Aug.	Gulf of Taranto	Wrought-iron staples	Nettlefold & Sons	1 4 0 0	35 0 0	42 0 0	0 16 5	0 18 7	0 8 6	44 3 6	36 16 6
6 Sept.	Oruba	6 sets tablet apparatus	Tyer & Co.		47 0 0	235 0 0			0 1 11	255 1 11	47 10 4 1/2
19 "	Indrapura	Wrought-iron staples	Nettlefold & Sons	1 10 0 0	35 0 0	42 0 0	1 4 9	1 4 10	0 12 10	66 2 5	38 14 8
19 "	"	12 Fire-hole plates	Nevill, Druce, & Co.	2 11 0 18 1/2	69 2 0	422 8 3	4 18 6	6 12 7	3 14 10	497 9 2	64 15 10
10 "	"	12 "	"	3 8 0 6 1/2	64 13 0	223 19 11	2 18 8	3 19 0	2 3 6	233 1 1	68 10 10
24 Oct.	Earl of Cardigan	20 sets Jerome's packing	Duls & Co.	1 7 1 0	11 0 0	218 12 9	1 17 6	3 9 1	2 3 6	226 2 10	11 6 1 1/2
24 "	Sophocles	2 sets pressed steel bogies	Leads Forge Co.		18 6 4	36 13 0	3 15 7	0 12 6	0 17 8	41 18 9	20 19 4 1/2
24 "	"	2 " wagon underframes	"		29 16 0	59 10 0	7 10 0	0 19 4	0 4 8	63 4 10	34 2 5 1/2
19 Sept. 1893.	Indrapura	50 steel carriage axles	Brown Bayley Co.	9 5 1 12	2 15 0	137 10 0	4 17 4	2 7 3	1 16 11	146 11 0	2 18 7 1/2
28 Jan.	Yarrowonga	14 bars, 2 1/2 x 1 1/2 flat	N. Hingley & Sons	0 18 2 17	9 5 0	6 3 1	0 8 10	0 3 3	0 3 0	6 18 2	10 2 0 1/2
28 "	"	14 " 2 1/2 x 2 1/2 x 1/2 angle	"	0 8 2 0	9 15 0	4 0 10	0 6 0	0 2 9	0 1 2	4 11 3	10 14 5 1/2
28 "	"	26 plates, 5' 10" x 2' 6" x 1/2"	"	1 0 2 4	10 16 0	21 4 10	1 0 4	0 11 3	0 5 8	22 8 1	22 16 8
14 Feb.	Port Denison	12 " 5' 6" x 5' 6" x 1 1/2"	Lowmoor Co.	5 10 3 0	1 5 0	1 5 0	2 1 7 5	5 10 4	2 2 11 3	6 6 0	222 0 6
14 "	"	8 " 6' 3" x 5' 6" x 1 1/2"	"	2 14 0 14	1 5 0	1 5 0	1 9 8	0 15 9	0 10 8	48 2 6	18 14 0
14 "	"	36 bars, 5 x 1 1/2 x 13' 6"	"	2 11 1 14	0 17 0	45 6 5	1 9 8	0 15 9	0 10 8	48 2 6	18 14 0
14 "	"	Rivets, various	"	1 8 2 0	1 2 0	33 3 6	1 0 0				
14 "	"	"	"	2 14 1 0	1 3 0	118 7 9	3 0 0	2 11 0	1 15 1	172 3 5	37 12 10
14 "	"	"	"	0 8 3 0	1 4 0	11 10 0	0 15 7				
23 "	Yarrowonga	Copper, bar	Williams Foster	5 2 2 7	55 0 0	274 10 11	4 2 2	4 8 2	2 3 7	285 18 10	56 14 11
28 "	"	24 copper plates, 5' 6" x 4' 9" x 1/2"	"	6 14 3 10	55 0 0						
28 "	"	12 copper plates, 4' 7" x 3' 2" x 1/2"	"	1 16 3 12	55 0 0	472 3 4	6 14 5	7 4 7	4 3 4	490 6 8	57 2 1 1/2
28 "	"	12 copper plates, firehole	"	2 8 3 22	57 5 0	140 2 2	2 2 10	2 3 0	1 4 11	145 13 5	59 9 2
28 "	"	12 copper tube	"	3 6 3 2		207 10 2	2 11 9	3 3 6	1 16 2	215 1 7	64 8 10 1/2
25 "	Hubbuck	26 bars, angle iron, 12 1/2 x 3 1/2 x 1 1/2"	Farnley Iron Co.	4 1 1 7	1 7 3	103 0 5	2 13 4	1 18 5	1 2 11	118 15 1	27 19 8
25 "	"	12 copper tube plates	Elliot Metal Co.	3 12 3 33	66 10 0	242 0 1	5 14 11	3 18 9	2 1 4	253 15 1	69 15 2 1/2
25 "	"	1 solid steel piston rod	Thwaites Bros.		32 0 0	32 0 0	1 4 2	6 6 8	0 5 7	33 16 5	33 16 5
25 "	"	1000 Hollesen's dry cells	Siemens Bros.		0 2 0	119 0 0	3 11 1	2 1 8	0 17 7	125 10 4	0 2 6 1/2
9 Oct. 1892.	Gulf of Venice	1 set elect. staff insts.	Railway Sig. Co.			29 10 0			0 0 4	29 10 4	29 10 4
1 "	Britannia	304 ticket-punches	Thomas Smith		0 5 6	84 2 0	2 0 2	1 11 2	0 11 10	88 5 2	9 5 9 1/2
20 "	Victoria	Fencing staples	Nettlefold and Sons	0 10 0 0	1 15 0	33 5 6	1 1 0	0 15 11	0 4 4	35 6 3	37 8 1 1/2
29 "	"	12 B.B. plates	Patent Shaft and Axletree Co.	1 7 0 20	11 10 0	21 7 6	1 4 5	0 12 5	0 6 0	23 9 4	17 7 6
10 Nov.	Oceana	10 sets patent train apparatus.	Tyer & Co.		47 10 0	475 0 0			0 3 3	475 3 3	47 10 4
10 "	Yola	3 powerful pass. engines, extra fittings.	Beyer, Peacock, & Co.		3650 0 0	10950 0 0		163 14 0		11417 6 0	8305 15 2

APPENDIX XX—continued.

Permanent-way Materials, Rails for Renewals, and Miscellaneous Articles imported for the New South Wales Railways during the year ending 30th June, 1893—continued.

Date of Arrival.	Name of Ship.	Description of Material.	Supplied by	Weight.	Rate.	Invoice Cost.	Freight.	English Charges	Colonial Charges	Total Cost.	Cost per ton or article.
				T. c. q. lb.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1892.											
26 Nov.	Culgoa	1252 axle-boxes	Adams & Co.		1 10 0	1878 0 0					
20 "	"	1252 lubricating pads	"		0 2 2	112 3 2	48 6 1	31 16 0	10 12 7	2115 19 0	1 13 9½
20 "	"	1252 leather packings	"		3 0 0	20 1 8					
26 "	"	604 lubricating pads	"		0 2 2	40 4 0				46 4 0	0 1 10
26 "	"	28 axle-boxes	"		1 10 0	42 0 0					
26 "	"	28 leather packings	"		3 0 0	0 11 8				42 11 8	1 10 5
12 Dec.	Miworo	12 firehole plates	Nevill, Druce, & Co.	2 9 3 24	58 3 0	145 4 1	1 14 10	2 5 4	1 1 7	160 5 10	60 2 4
12 "	"	12 tube plates	"	3 7 2 64	68 10 0	210 0 4	2 12 3	3 7 7	1 8 5	223 8 7	66 4 0
12 "	Orient	28 ticket punches	Thomas Smith		0 5 6	7 17 6					7 17 6
9 Oct.	Bungaroo	1 set wheels and axles	Beyer, Peacock, & Co.		500 0 0	500 0 0	11 30 5	8 10 2	4 15 0	524 15 7	524 15 7
9 "	"	1 pair cylinders	"		80 10 0	80 10 0	1 14 11	1 4 6	0 10 0	84 1 5	84 1 5
9 "	"	1 set axle-boxes	"		55 10 0	55 10 0	1 5 6	0 14 6	0 3 0	57 12 11	57 12 11
9 "	"	1 radial axle-box	"		30 0 0	30 0 0	0 13 9	0 8 3	0 2 0	31 4 0	31 4 0
9 "	"	1 set of springs	"		45 0 0	45 0 0	1 0 7	0 12 3	0 3 0	46 15 10	46 15 10
9 "	"	300 boiler tubes	"		105 0 0	315 0 0	7 4 4	4 7 0	2 14 4	329 6 8	1 1 11½
9 "	"	1 pair injectors	"		18 0 0	18 0 0	0 8 3	0 4 5	0 1 4	18 14 0	per pair.
9 "	"	2 sets wheels and axles	"		800 0 0	800 0 0	23 19 5	12 11 6	7 14 2	844 6 1	422 2 6½
9 "	"	2 pair cylinders	"		263 0 0	263 0 0	7 8 6	3 17 0	2 1 0	276 0 0	per pair.
9 "	"	2 sets axle-boxes	"		270 0 0	270 0 0	7 10 2	4 2 0	2 2 6	283 14 8	141 17 4
9 "	"	3 " Springs	"		139 0 0	139 0 0	5 6 3	2 17 0	1 11 0	108 14 3	66 4 0
9 "	"	300 boiler tubes	"		118 6 8	355 0 0	9 19 7	5 0 3	2 12 7	373 1 5	1 4 10½
9 "	"	1 pair injectors	"		28 0 0	28 0 0	0 15 2	0 8 0	0 3 0	29 0 0	per set.
5 "	Ophir	6 sets tablet apparatus	Tyer & Co.		47 10 0	285 0 0			0 1 11	285 1 11	47 10 8½
12 Nov.	Cairnbulg	75 sets metallic rings	Beyer, Peacock, & Co.		2 10 0	187 10 0	0 18 2	2 19 3	1 17 8	193 5 1	2 11 6½
23 "	Port Glasgow	9 tyres	Dubs & Co.	3 5 0 10		30 0 0	4 9 5	0 14 6	0 12 10	41 17 0	4 13 0
13 Mar.	Wilcannia	10 sets of Jerome's packing				95 0 0	1 1 0	0 7 0	0 17 1	97 5 1	per set.
27 "	Port Hunter	46 copper plates	Williams, Foster, & Co.	11 18 2 34	58 5 0	695 5 2	8 10 4	14 4 1	6 1 2	724 0 9	60 13 0
27 "	"	20 sets copper bolts, ¼ dia.	"	10 0 0 0	56 0 0	560 0 0	8 0 0	11 10 0	5 0 1	584 10 1	58 9 0
4 April	British General	3 passenger engines	Beyer, Peacock, & Co.		3738 8 6	11275 5 6				202 19 1	11478 4 7
8 "	Bungaroo	15 bogie axles, H.P. 2139 B	Fried Krupp		3 7 3 23	65 8 3	3 6 6	0 10 16	1 5 9	70 11 4	4 14 1
8 "	"	12 " " 2140 C	"		2 14 0 1	51 6 2	2 0 0	0 8 5	0 19 3	54 19 3	4 11 8
8 "	"	6 " " 2142 H	"		1 9 2 8	27 7 2	1 3 0	0 4 5	0 10 11	29 5 3	4 17 6½
8 "	"	50 tender " 2146	"		18 8 0 8	207 15 3	13 13 7	1 16 2	4 8 8	237 18 5	4 11 2
8 "	"	100 tyres, B.P. 1953 A & B	"		31 15 2 7	356 9 7	16 0 0	7 8 7	5 15 9	385 13 11	3 17 ½
17 "	Valetta	24 Gresham & Showard's H.P. 3472 Injectors.	Gresham & Cluon		8 8 0	201 12 0	1 1 0	4 6 7	1 6 10	208 6 5	8 13 7
5 May..	Echuca	60000 sponge cloths	Rigby, Wainwright, & Co.	2 11 1 4	0 10 6	181 14 8	4 10 7	3 16 8	1 10 2	192 0 1	per 100.
17 "	Culgoa	1 plate, 13' 8" x 5' 44" x ½"	Lowmoor Iron Co.	0 13 3 14	1 6 3	17 15 1	0 10 6	0 8 6	0 3 6	18 17 6	0 7 8½
17 "	"	40 w.i. tubes, 2½" int x 2½" x 33½"	John Spencer	6 10 0 0	0 0 8	60 17 9	4 4 0	2 2 4	1 3 0	68 7 10	26 9 2
17 "	"	40 w.i. tubes, 2½" int x 34' 2720' 8"	"								per foot.
25 "	Gulf of Genoa	12 steel driving wheel bodles	Dubs & Co.			536 0 0	7 16 0	7 0 5	3 6 9	354 8 2	0 8 8½
17 "	Culgoa	2 sets wheels and axles	Beyer, Peacock, & Co.		167 5 0	334 10 0	6 7 6	6 15 9	3 3 3	350 16 6	29 10 3
17 "	"	5 " tyres	"		10 9 0 16	1 5 6	200 12 11	5 16 7	5 10 8	220 11 0	per set.
17 "	"	12 train staff instruments	Railway Signal Co.			29 10 0	654 0 0				56 2 2½
17 "	"	6 stroke bells	"			2 1 0	12 6 0	7 7 3	7 17 5	2 16 7	31 1 1½
17 "	"	6 gongs	"			2 1 0	12 6 0				per set.
17 "	"	Locomotive packing	Loco Packing Co.		2 18 0 0	331 12 0	6 0 7	6 18 7	2 10 9	347 1 11	119 13 9
25 "	Gulf of Genoa	13 tube plates, in 7 cases	Nevill, Druce, & Co.	4 12 1 12	65 6 6	361 13 3	6 7 7	4 10 0	2 11 11	316 8 9	68 4 10½
45 "	"	100 coupling ends	Westinghouse Co.	0 2 2 9	0 11 0	55 0 0	0 10 6	1 1 0	0 6 9	57 5 3	0 11 5½
1892.											
2 Dec.	Chipper Kyle	4 loco. engines	Beyer, Peacock, & Co.			14998 2 0				202 9 6	15200 11 6
29 Oct.	Echuca	Wrought-iron staples	Nettlefold & Sons		1 1 0 0	36 15 0	0 14 5	0 17 9	0 7 5	38 14 7	38 17 8½
29 "	"	1248 axle-boxes	Adams & Co.			1 10 0	1872 0 0				63 6 6
29 "	"	1248 leathers for ditto	"			3 0 0	26 0 0				29 5 118 0 5
29 "	"	1248 lubricating pads	" (less 4½%)			0 2 2	111 16 0				111 16 0
31 "	Wairnambool	14 bars iron	Lowmoor Co.		2 7 1 14	0 10 0	46 15 4	1 11 1	1 0 0	0 11 0	49 17 5
31 "	"	12 plates	"		3 10 1 10	1 5 0	90 0 3	2 7 3	2 13 6	1 14 1	160 14 3
31 "	"	12 "	"		2 17 2 14	1 3 0	68 2 0	1 16 9			3 25 0 11
31 "	"	16 Turton's buffers	George Turton			11 10 0	46 0 0	1 3 6	0 19 9	0 10 4	45 13 7
24 "	Orizaba	1 set tracings for engines	Beyer, Peacock, & Co.		110 0 0	110 0 0	1 1 0	1 19 0	0 13 4	113 13 4	per set.
16 Nov.	Commonwealth	16 buffers (Turton's)	George Turton		11 10 0	34 10 0	0 17 5	0 17 1	0 7 9	36 12 8	113 18 4
	"	2 powerful pass. engines.	Beyer, Peacock, & Co.			3650 0 0					3 1 0½
	"	Extra fittings	"			99 10 6	199 1 0			101 4 9	7600 5 9
12 Nov.	Cairnbulg	50000 sponge cloths	Rigby Wainwright	2 11 0 1	0 9 0	166 6 10	2 18 9	2 12 11	1 10 6	163 9 0	per 100.
19 Dec.	1891.	Final instal., Petersham				467 12 3				467 12 3	467 12 3
1893.											
25 Jan.	Fifeshire	10 sets Jerome's packing	Dubs & Co.	0 13 2 14		95 0 0	1 1 0	1 7 0	0 17 1	99 5 1	per cwt.
25 "	"	2232 s.d. brass tubes	J. Wilks and Sons	26 6 3 84	49 0 0	1288 5 6	28 15 1	19 16 7	11 19 8	1348 16 10	7 4 2½
17 "	Port Melbourne	40 bars iron angle	Monkbridge Co.	4 2 0 14	1 1 3	85 2 7	2 18 2	1 10 5	0 19 8	90 5 11	51 5 10
17 "	"	130 " " "	"	3 2 3 11	1 0 3	62 1 7	2 1 8	1 0 7	0 15 0	65 18 10	21 19 9½
17 "	"	46 " " "	"	0 15 0 0	0 10 3	16 18 0	0 11 8	0 5 7	0 4 1	17 17 4	20 19 6
17 "	Astoria	3 powerful pass. engines.	Beyer, Peacock, & Co.			11266 7 6				168 10 9	11435 7 3
17 "	Port Melbourne	6 pairs electric train staff instruments.	Railway Signal Co.	3 13 2 1	78 0 0	438 0 0	5 16 11	0 6 0	3 19 5	448 2 4	3811 15 9
28 "	Yarrawonga	Copper rivets	Broughton Copper Co.	0 9 3 25	0 0 8	36 6 0	0 10 6	0 16 10	0 6 0	37 10 4	per pair.
30 April	Portia	3 powerful pass. engines.	Beyer, Peacock, & Co.			13275 5 6				202 10 1	11478 4 7
Various	Various	150 buffer springs	Thos. Turton & Sons	19 19 1 14	2 0 0	300 0 0	10 0 9	5 2 4	4 3 0	319 15 1	2 2 7½
	"	550 " " "	C. Cammell & Co.	41 4 0 12	1 13 0	907 10 0	27 1 0	15 5 6	13 1 11	963 2 4	1 15 0½
	"	4784 30-ft. s.t. rails, 80lb.	"	1708 11 1 20	4 9 3	7624 10 0	663 0 2	1 15 3	225 0 11	8514 15 4	4 19 8
	"	4625 80lb. rails	Bolekow Vaughan	1650 15 1 10	4 5 0	7015 15 6	630 13 3	3 85 6	3 209 12	17950 7 6	4 16 3½

Indent for Fastenings for 80 lb. T. Rails in Stock.

Date of Arrival.	Name of Ship.	Description of Material.	Supplied by	Weight.	Rate.	Invoice Cost.	Freight.	English Charges	Colonial Charges	Total Cost.	Cost per ton or article.
				T. c. q. lb.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1892.											
10 Nov.	Oceana	12454 fish-plates	Darlington Co.	56 15 3 14	7 0 3	398 5 4	40 17 6	3 5 10	7 9 3	449 17 11	7 18 5
26 "	Arendin	43776 fish-bolts and nuts	Bayliss, Jones, & Bayliss	25 13 0 0	14 0 0	359 2 0	19 6 8	4 3 1	3 15 4	386 7 1	15 1 3
26 "	"	82208 spikes, 3"	"	23 12 0 0	10 1 3	338 2 0	24 1 0	4 0 7	4 7 7	370 19 8	11 0 6½
26 "	"	42379 wood screws, 2"	"	18 18 0 23	12 10 0	226 7 7	13 1 6	2 10 9	2 16 5	265 2 8	13 10 0
1893.											
25 Jan.	Fifeshire	19251 fish-bolts and nuts	"	11 5 3 25	14 0 0	168 3 8	7 8 4	2 1 7	2 5 7	169 19 2	15 0 10
25 "	"	32869 spikes, 2"	"	31 0 1 0	10 1 3	342 5 0	25 3 0	3 13 10	6 1 9	377 4 1	11 1 9½

APPENDIX XXI.
RAILWAYS.

RETURN of the number and nature of the Accidents and Injuries to Life and Limb which have occurred during the year ending 30th June, 1893.

Date of Accident.	Passengers killed or injured.		Servants of the Department or for Contractors killed or injured.		Trespassers, &c.		Causes of Accident.
	Causes beyond their own control.	Their own misconduct or want of caution.	Causes beyond their own control.	Their own want of caution.	Own want of caution.		
1892.	Killed	Injured.	Killed	Injured.	Killed	Injured	
2 July..	1	Pass. run over.
4	1	...	...	...	Pass. run over.
4	1	...	...	Pass. slightly injured by leaving train in motion.
5	1	Pass. knocked down.
8	1	Shunter's hand crushed.
8	1	Porter's foot crushed.
11	1	Porter's hand crushed.
15	1	Head porter crushed between a cart and truck.
15	1	...	...	...	Pass. left train in motion; slightly shaken.
16	1	...	Shunter run over.
16	1	...	Porter crushed between carriages.
18	1	...	...	...	Child run over.
19	1	Shunter's hand crushed.
21	1	...	Trolley run into by a goods train 150 miles west.
22	1	Guard's thumb broken.
24	1	...	...	Pass. fell down a subway.
25	1	...	...	Pass. left train in motion; head and face cut.
28	1	Guard's hand crushed.
30	1	Boy's leg fractured.
30	1	Shunter crushed.
6 Aug	1	...	...	Pass. left train in motion; slightly injured.
8	1	...	Shunter scalded.
8	1	Guard knocked off the step of brake van; slightly injured.
11	1	...	...	Pass. fell off a truck and sustained a slight shock.
19	1	...	...	Pass. left train in motion and was slightly injured.
19	1	Fireman injured whilst punning down a brake.
22	1	...	...	Pass. leg crushed.
27	1	Employee knocked down.
30	1	Porter fell, cut his head, and injured his back.
31	1	Shunter crushed.
1 Sept..	1	1	...	...	Tram collided with a cart at Kogarah.
7	1	Fireman's head came in contact with bridge.
10	1	...	...	Pass. slightly injured his hand.
15	1	Pass. struck by an engine.
16	1	...	Guard injured.
24	1	Shunter's leg injured.
24	2	Driver and fireman slightly injured through derailment near Doughboy Hollow.
24	6	...	...	...	...	Through derailment of a portion of a train near Cartingford points neglected.
1 Oct.	1	Employee fell off truck and sustained a shock.
1	1	...	...	Pass. fell down a subway.
7	1	Man knocked down, slightly injured.
12	1	...	...	Pass. sprained his foot alighting from a carriage.
12	1	Boy knocked down by a coal train.
12	2	...	...	...	Gatekeeper and child run over.
14	1	Signalman struck by engine.
18	1	Woman run over.
19	1	Guard sprained his ankle.
21	1	Guard's arm crushed between buffers.
21	1	Porter knocked down.
24	1	Porter's head cut by truck door falling on him.
24	1	Porter's finger broken.
24	1	Guard fell and fractured his leg.
31	1	Signalman fell down steps.
31	1	...	...	Operator burnt owing to lamp exploding.
31	1	...	...	Pass. left train in motion.
1 Nov.	1	Employee slightly crushed by a bale of wool.
4	1	Ganger's foot injured by trolley running over it.
2	1	Fireman's foot crushed between buffers.
12	1	...	Junior clerk run over.
16	1	...	...	Pass. left train in motion.
16	1	...	...	Pass. left train in motion.
16	1	Lady sprained her ankle.
29	1	...	...	Pass. fell from train and injured his leg.
29	1	...	Station-master's finger crushed.
29	1	...	...	Pass. attempted to join train in motion.
30	1	...	Employee injured loading wool.
2 Dec.	1	Child run over.
8	1	Fetchler fell from shed platform.
9	1	Shunter injured his knee.
9	1	Man run over at 190 miles 63 chains West.
10	1	Porter's leg fractured.
12	1	Man struck by an engine.
12	1	...	Porter injured by bale of wool.
13	1	...	...	...	Pass. left train in motion.
14	1	Man run over.
16	1	...	...	Pass. left train in motion.
15	1	...	Porter fell when loading wool.

APPENDIX XXI—continued.

Date of Accident.	Passengers killed or injured.		Servants of the Department or of Contractors killed or injured.		Trespassers, &c.		Nature of Accident.
	Causes beyond their own control.	Their own misconduct or want of caution.	Causes beyond their own control.	Their own want of caution.	Own want of caution.		
1892.	Killed	Injured.	Killed	Injured.	Killed	Injured.	
20 "	1	...	Gatekeeper struck by a train.
23 "	1	Porter's hand crushed.
23 "	1	Man threw himself in front of a train.
24 "	1	...	...	...	Pass. left train in motion.
26 "	1	...	...	...	Pass. left train in motion.
26 "	1	Woman run over.
31 "	1	...	...	...	Pass. attempted to join train in motion.
1893.							
1 Jan...	...	1	...	1	1	...	Engine left the rails on the Blayney Line near Cowra.
7 "	1	...	Fettler run over.
9 "	1	...	...	...	Pass. jumped from train in motion.
10 "	1	Porter's leg injured while loading wool.
12 "	1	Guard crushed.
12 "	1	Man's foot crushed.
13 "	1	Porter's foot crushed.
14 "	1	...	...	...	Pass. attempted to join train in motion.
3 Feb..	1	Fireman jumped from train in motion.
4 "	1	Carriage examiner run over.
5 "	1	...	...	...	Pass. attempted to enter train in motion.
7 "	1	Watchman's arm fractured.
8 "	1	Car Conductor run over.
8 "	1	Man run over.
11 "	1	Ganger run over.
15 "	1	Porter's foot injured.
17 "	1	...	Engine-driver crushed.
20 "	2	...	Officer and guard injured at Como.
20 "	...	1	...	...	...	...	Pass. hand bruised through brake-van leaving the rails.
20 "	1	...	...	...	Pass. alighted from train in motion.
23 "	1	Shunter's arm crushed between buffers.
24 "	1	Porter injured.
25 "	1	...	...	...	Pass. attempted to enter train in motion.
28 "	1	...	...	...	Pass. fell from train and cut her head.
1 Mar...	1	...	...	...	Pass. injured knee attempting to join train in motion.
1 "	1	Porter's hand crushed while coupling trucks.
2 "	1	Shunter's hand crushed while coupling trucks.
2 "	1	...	...	Employee's hand crushed through sling breaking.
3 "	1	Guard's finger crushed.
3 "	1	Assistant guard's hand crushed at Zig Zag.
7 "	1	Porter's hand crushed during shunting operations.
8 "	1	Man struck by the engine of a coal train.
16 "	1	...	...	Porter had both thighs scalded by steam.
17 "	1	Night officer fell, and injured his lip.
21 "	1	...	...	...	Pass. attempted to join train in motion.
23 "	1	Fireman fell from engine, and fractured his skull.
24 "	1	Porter fell when unshunting a truck.
25 "	2	...	...	...	2 Pass. attempted to enter train in motion.
27 "	1	Shunter's arm crushed.
8 April.	1	Man run over.
9 "	2	...	Contractor's men run over.
12 "	1	...	...	...	Pass. left train in motion.
19 "	1	Man fell from platform.
20 "	1	...	...	...	Pass. sustained slight cut on right hand.
17 "	1	...	Porter crushed between waggons.
17 "	1	Oiler knocked down.
21 "	1	...	...	...	Pass. fell on platform through leaving train in motion.
24 "	1	Shunter's foot crushed.
25 "	1	...	Guard's leg scalded by steam.
1 May...	1	Fettler fell from truck and injured his head.
5 "	1	Porter crushed between buffers.
6 "	1	Shunter fell and was injured.
12 "	1	Employee fell from bridge.
16 "	1	Porter fell from a truck to the ground.
16 "	1	...	...	...	Pass. fell, left train in motion.
21 "	1	...	...	...	Pass. left train in motion.
24 "	1	...	...	Shunter injured through lump of coal falling from truck.
26 "	1	Fettler fell from train in motion.
29 "	1	...	...	...	Pass. left train in motion.
31 "	1	...	...	...	Pass. fell from car platform.
1 June..	1	...	...	...	Pass. attempted to join train in motion.
3 "	1	Shunter fell from a truck.
7 "	1	Fireman's hand caught by open carriage door.
13 "	1	Crane-drivers hand crushed.
16 "	1	Guard fell between a truck and platform.
22 "	1	...	...	...	Pass. attempting to join train in motion.
23 "	1	Porter's wrist injured by case falling on it.
29 "	1	Labourer's collar crushed between truck and loading bank

APPENDIX XXII.

RETURN of REVENUE and EXPENDITURE of each Station for the year ending 30 June, 1893.

Stations.	No. of hands employed including Station-masters.	Total Salaries and Wages Expenditure.		No. of Tickets issued. 1893.	Revenue from Tickets and Coaching Traffic. 1893.		GOODS.		COAL.		Other Minerals.		WOOL.		HAY, STRAW, AND CHAFF.		Revenue from Goods and Live Stock. 1893.	Total Earnings, exclusive of Special Earnings.		Increase. 1893.	Decrease. 1893.	Stations									
		£	s.		d.	£	s.	d.	Out.	In.	Out.	In.	Out.	In.	Out.	In.		Out.	In.				£	s.	d.	£	s.	d.			
Sydney—Bent-st.	10			6,800	325	16	3										£ s. d.	£ s. d.	£ s. d.	£ s. d.			Sydney-Bent-st.								
„ Park-st.				11,370	444	4	6 1/2										308	7	3	40	11	0	„ Park-st.								
„ Elizabeth-st.			1,266	17	0	627	1	7										444	4	5 1/2	468	16	5	„ Elizabeth-st.							
„ Liverpool-st.					20,367	81,700	17	9										688	14	8	38	6	11	„ Liverpool-st.							
„ Central Office					1,827,192	249,982	5	7 1/2										81,700	17	9	84,012	14	2	„ Central Office							
„ Redfern Station.	341	37,028	14	0	30,107												281,751	2	6 1/2	309,469	18	5 1/2	„ Redfern Stn.								
„ Darling Harbour.	151	30,956	14	3	233,706	57,938		13	888	100	15,80						452,249	19	0	446,281	0	7	„ Darling Har.								
Eveleigh	30	3,045	6	9	312,600	5,446	16	4	341	2,296	16	38	111	2			247	8	7	5,694	4	11	6,274	7	6 1/2	Eveleigh.					
Alexandria	2	875	3	10	1,035	19,474			1,035	19,474	36	10,687	10,120	3,699		617	1	4	6,832	4	10	9,447	6	8	434	18	7	Alexandria.			
Macdonaldtown	9	1,250	8	3	114,307	1,800	4	8											1,806	4	8	2,145	2	5	278	17	0	Macdonaldtown.			
Nowtown	14	1,901	16	10	365,854	7,571	11	4	3,948	31,203	57	15,564		2,530					16,368	1	1	23,182	8	3	6,774	2	2	Nowtown.			
Stammore	6	802	16	10	131,262	4,047	0	6 1/2											4,047	0	6 1/2	3,587	11	9	460	8	9 1/2	Stammore.			
Petersham	17	2,834	10	10	393,023	12,406	11	1	1,626	17,159	34	12,435		4,223					7,949	17	1	20,356	8	2	22,270	6	3	Petersham.			
Lewisham	9	1,050	17	0	198,728	7,383	12	6												7,383	12	6	7,280	17	8	102	14	10	Lewisham.		
Summer Hill	13	1,410	8	7	372,709	13,618	17	9	1	14									13,628	10	1	12,870	14	9	687	15	4	Summer Hill.			
Ashfield	18	2,382	15	2	326,314	13,872	2	6	675	11,738	24	4,029								17,768	18	4	18,727	15	2	958	16	10	Ashfield.		
Croydon	10	1,129	17	10	187,469	7,833	14													0	10	1	7,834	3	8	8,119	3	2	Croydon.		
Burwood	14	1,924	7	8	259,096	12,318	0	9	6,510	8,922	977	9,563								16,678	0	6	19,143	1	1	2,470	0	7	Burwood.		
Stratfield	25	3,029	14	3	207,141	13,701	7	7 1/2	87	103										33	16	10	13,755	4	6 1/2	12,959	2	7	Stratfield.		
Homebush	17	2,192	13	2	70,272	3,735	10	10	175	2,255										4,451	5	10	6,940	6	8	1,488	17	10	Homebush.		
Flemington	11	1,448	4	10	15,052	640	6	1	1,030	19										223,176	2	0	232,098	8	1	202,044	14	6	Flemington.		
Rookwood	8	1,181	3	8	77,095	3,711	8	3	837	1,887										438	10	9	4,140	8	0	6,234	14	0	Rookwood.		
Auburn	9	1,106	12	5	90,486	4,677	17	3	14,283	6,746										94	1,830	20	14	9,115	12	0	9,298	6	1	Auburn.	
Clyde	2	806	1	1	35,422	1,249	16	3												690			1,249	16	3	1,413	16	5	Clyde.		
Granville	31	6,359	10	4	180,690	6,988	11	2	29,174	25,396	5	10,478		1,577		65				30,186	2	5	27,164	13	7	26,774	10	14	Granville.		
Merrylands	3	410	0	0	11,837	869	0	5	5,295	1,490										1,045	8	1	1,914	14	0	2,185	12	4	Merrylands.		
Guildford	1	160	0	0	14,834	1,080	17	8	658	610										2	110	3	0	1,191	1	0	1,044	6	0	Guildford.	
Fairfield	5	482	7	0	21,880	1,980	17	10	3,628	3,009											24	717	14	9	2,677	12	7	2,617	4	0	Fairfield.
Canley Vale	1	150	0	0	5,541	583	14	8	286	650												144	0	8	682	14	6	773	1	0	Canley Vale.
Cabramatta	1	140	0	0	4,940	453	13	4	11,309	443												119	14	1	573	7	5	601	14	6	Cabramatta.
Liverpool	12	1,351	17	4	34,267	3,827	16	2	22,800	8,712	5	9,060	1,206	121	4,508	3,995														Liverpool.	
Glenfield	2	150	5	0	1,698	197	7	10	3,282	351																				Glenfield.	
Ingleburn	3	344	1	7	4,148	698	15	7	6,130	847																				Ingleburn.	
Minto	1	170	0	0	3,605	813	15	11	2,216	598																				Minto.	
Campbelltown	12	1,344	17	9	12,991	3,314	11	2	8,704	3,167																				Campbelltown.	
do Trans.					7,922	639	0	5																						do Trans.	
Menangle	2	301	8	4	1,477	803	1	0	1,669	552																				Menangle.	
Douglas Park	19	276	13	4	1,542	375	16	9	2,042	430																				Douglas Park.	
Picton	16	1,825	12	4	5,494	1,797	0	4	6,146	2,821																				Picton.	
Thirlmere	4	371	18	2	1,496	367	19	4	4,061	489																				Thirlmere.	
Picton Lakes	3	292	4	0	479	72	2	9	270	40																				Picton Lakes.	
Balmoral	2	275	0	0	600	109	7	9	13	233																				Balmoral.	
Hill Top	2	309	0	0	403	49	11	5	494	25																				Hill Top.	
Cole Vale	2	300	15	8	474	110	1	1	1,087	65																				Cole Vale.	
Mittagong	12	865	0	3	7,088	2,221	10	10	5,551	2,498	12,245																			Mittagong.	
Bowral	7	754	4	0	11,341	3,948	12	1	2,028	5,906	892	1,322	5,854	221	8															Bowral.	
Moss Vale	12	1,032	9	9	9,789	5,821	5	7 1/2	2,234	7,179	794	718	130	1,799	456															Moss Vale.	
Exeter	2	217	10	0	824	169	0	10	154	312																				Exeter.	
Bundanoon	4	330	14	2	2,180	411	7	9	410	380																				Bundanoon.	
Kareela																														Kareela.	
Wingello	3	808	18	10	1,087	237	1	9	1,134	210																				Wingello.	
Barber's Creek																														Barber's Creek.	
Marulan	3	464	9	0	2,723	959	2	3	2,060	800																				Marulan.	

APPENDIX XXII—continued.

Stations.	No. of hands employed including station-masters.	Total Salaries and Wages Expenditure.			No. of Tickets issued.	Revenue from Tickets and Coaching Traffic.			GOODS.		COAL.		Other Minerals.		WOOL.		HAY, STRAW, AND CHAFF.		Revenue from Goods and Live Stock.	Total Earnings, exclusive of Special Earnings.			Increase.	Decrease.	Stations.							
		£	s.	d.		1893.	1893.	Out. Tons.	In. Tons.	Out. Tons.	In. Tons.	Out. Tons.	In. Tons.	Out. Bales.	In. Bales.	Out. Trucks.	In. Trucks.	1893.		1893.	1892.	1893.				1893.						
Towrang	1	242	10	0	2,046	280	9	4	2,472	267					555	57	1		772	16	11	1,059	6	3	516	10	9	542	15	6	Towrang.	
Goulburn	37	4,156	13	10	26,628	16,193	5	7	26,378	3,967	2	7,644	70	401	3,469	125	93	20	44,738	8	10	60,926	14	5	60,219	7	8½	707	0	8½	Goulburn.	
Yarra	2	216	13	4	503	74	15	0	157	62									30	4	3	110	19	9	130	10	1				Yarra.	
Breadalbane	6	355	4	10	1,805	420	14	5	2,580	325					427				274	8	9	695	3	2	899	5	10				Breadalbane.	
Razorback	3	253	11	7	181	45	13	4	22	108									0	12	8	46	6	0	82	16	8				Razorback.	
Gunning	5	483	2	2	3,144	1,429	13	0½	1,590	1,315				1	2,881	19	6	1		0	12	8	46	6	0	82	16	8				Gunning.
Jerrawa	4	342	0	4	606	133	1	0	232	64					134				27	11	7	140	12	7	159	10	4	1	2	3	Jerrawa.	
Coolah																																Coolah.
Yass Junction	6	528	8	11	4,423	3,019	10	10½	1,279	1,209					2,823	599		8	1,563	6	1	4,603	5	11½	10,036	18	3	6,383	12	3½	Yass Junction.	
Yass Township	2	195	18	4	6,424	744	19	10	699	1,744					1,839	18			4,080	7	8	4,781	7	6	884	15	8½	3,895	11	9½	Yass Township.	
Bowring	3	450	3	5	1,137	408	11	1	1,146	719					2,867	3	1	0	1,013	16	9	1,482	7	10	1,753	16	7				Bowring.	
Goondah	1	147	10	10																											Goondah.	
Binalong	6	536	9	6	2,206	1,482	13	1	1,326	1,392				4	5,017				2,982	14	8	4,465	7	9	5,298	14	10				Binalong.	
Rocky Ponds	3	146	5	11																											Rocky Ponds.	
Galong	2	260	16	6	856	262	8	7	3,107	260					1,918				237	12	10	500	1	5	432	17	1	67	4	4	Galong.	
Cunningar	1	26	0	0																											Cunningar.	
Harden	11	1,271	17	0	7,305	3,102	13	11	1,359	1,543					1,722				2,197	13	4	5,300	7	3	5,021	7	7				Harden.	
Murrumburrah	4	365	18	0	5,124	1,482	16	8	7,150	10,233					344				6,717	14	10	8,200	11	6	6,821	12	1	1,375	19	5	Murrumburrah.	
Demondrille	4	345	3	9	401	66	9	4	853	341					212				74	18	10	141	8	2	180	17	4				Demondrille.	
Nubba	3	178	14	0	479	148	9	6	1,134	122					236				156	7	11	304	17	5	208	8	1	98	9	4	Nubba.	
Wallendbeen	6	503	4	8	1,786	691	2	9	3,505	610					2,236				693	0	5	1,634	3	2	1,540	0	5	144	2	9	Wallendbeen.	
Cootamundra	19	1,397	1	7	18,280	9,237	5	10	13,194	21,177		1,202			8,094				27,240	3	6	30,477	9	4	20,855	11	2½	6,621	18	1½	Cootamundra.	
Bethunga	7	427	15	3	2,115	528	16	9	2,688	633					893				506	18	7	1,634	15	4	1,420	7	9				Bethunga.	
Ilabo	2	294	0	0	1,014	296	19	10	2,504	815					1,360				516	1	2	813	1	2	649	3	5	163	17	7	Ilabo.	
Junee	26	2,357	16	7	11,498	7,712	8	6½	3,894	4,511		22		195	3,617				7,165	6	2	14,877	14	8½	14,778	6	14	104	8	7½	Junee.	
Harefield	4	299	5	3	775	171	11	6	2,225	102					478				120	2	4	291	13	10	412	1	7				Harefield.	
Bomen	4	232	7	8	377	114	8	1	1,114	163					18				103	4	10	223	12	11	524	5	6				Bomen.	
Wagga	20	1,560	8	9	13,480	10,030	1	0½	10,839	11,598		2		1,034	2				29,753	9	1	32,783	2	1½	37,102	8	3	4,819	6	1½	Wagga.	
Urangundy	3	239	0	8	1,577	253	14	7	3,575	286					1,292				155	7	10	409	2	5	488	0	3				Urangundy.	
The Rock	5	450	19	6	2,392	840	3	0	1,850	783					5,081				834	5	8	1,674	8	8	1,855	9	0				The Rock.	
Yerong Creek	3	302	0	0	2,387	830	6	10	2,702	1,048					3,136				944	10	10	1,025	6	8	1,789	5	0½	136	1	7½	Yerong Creek.	
Henty	1	97	10	0	1,663	634	7	5	3,149	619					754				1,100	8	2	1,734	10	7	1,135	7	0	509	3	7	Henty.	
Culcairn	5	465	15	6	3,504	1,733	5	2	3,055	1,933					3,756				2,087	6	10	3,773	12	0	8,400	12	3				Culcairn.	
Walla Walla	1	32	10	0	111	83	5	0	521	80									60	0	7	119	9	0							Walla Walla.	
Burrumbuttock	1	67	7	8	191	69	8	5	1,040	188					671				104	2	11	187	7	11							Burrumbuttock.	
Brooklesby	1	73	18	5	281	124	9	2½	2,590	155					236				89	14	5	214	3	6							Brooklesby.	
Corowra	2	194	3	11	1,220	677	2	7	5,032	846					36				1,231	2	8	2,208	5	3							Corowra.	
Gerogery	11	545	17	10	1,720	467	17	11	1,165	235					491				391	2	8	859	0	7	1,593	9	6				Gerogery.	
Yamba	2	145	0	0	865	303	17	8	1,092	214					4				234	3	2	538	5	10	495	3	5	48	2	5	Yamba.	
Albury	29	2,777	18	7	28,570	14,349	6	2½	10,023	21,915					758				19,778	10	4	34,628	2	6½	62,474	18	10	17,546	16	3½	Albury.	
Tarago	7	504	8	4	3,420	2,368	9	5	2,825	1,556					1,578				1,366	1	1	3,794	10	6	4,636	0	6				Tarago.	
Bungendore	0	408	2	4	2,220	1,962	0	11	3,093	1,621					2,972				5,859	19	11	7,822	0	10	5,363	19	9	2,463	1	1	Bungendore.	
Queanbeyan	18	546	16	11	2,162	2,162	7	2	2,026	2,018					4,501				4,451	0	8	6,618	7	10	7,765	9	7				Queanbeyan.	
Michelago	7	295	18	6	847	692	16	9	975	990					2,672				747	12	7	1,350	9	4	994	5	9	350	3	7	Michelago.	
Cooma	8	558	17	6	4,382	5,161	9	6	2,425	4,452					14				10,019	12	6	15,181	2	0	15,062	6	7½				Cooma.	
Coolah	9	304	4	0	2,095	580	9	0	1,670	1,024					946				938	18	4	1,519	7	4	1,874	19	6	144	7	10	Coolah.	
Gundagai	5	514	0	0	3,673	3,852	15	8	3,625	4,826					20				13,195	1	2	16,887	16	10	17,818	15	0				Gundagai.	
Young	13	960	18	1	12,055	5,373	7	2½	9,239	6,247					688				14,389	4	8	20,277	11	5½	21,319	16	10				Young.	
Koorawatha	6	552	224	1	0	294	2	5	2,027	755					6				380	17	8	631</										

APPENDIX XXII—continued.

Stations.	No. of hants employed including Station-masters	Total Salaries and Wages Expenditure.	No. of Tickets issued.	Revenue from Tickets and Coaching Traffic.	GOODS.		COAL.		Other Minerals.		WOOL.		HAY, STRAW, AND CHAFF.		Revenue from Goods and Live Stock.	Total Earnings, exclusive of Special Earnings.		Increase.	Decrease.	Stations.	
					Out. Tons.	In. Tons.	Out. Tons.	In. Tons.	Out. Tons.	In. Tons.	Out. Bales.	In. Bales.	Out. Trucks.	In. Trucks.		1893.	1892.				1893.	1892.
Milson's Point	5	£ 80 1 0	10,515	£ 882 18 7	40	80	2	12	26	...	...	...	...	...	£ 81 11 8	£ 914 10 3	£ 914 10 3	...	...	Milson's Point.
Harris Park	20	201 8 7	37,507	2,124 1 7	...	...	...	...	...	...	...	...	...	...	2,124 1 7	2,108 10 0	...	...	...	Harris Park.
Parramatta	20	2,767 8 5	216,154	18,236 11 0	12,315	18,112	20	5,330	2,178	160	1	64	7	52	6,122 19 2	21,359 10 2	20,364 17 4	2,065 7 2	21 3 7	Parramatta.	
Wentworthville	4	886 0 9	4,435	806 7 1	1,251	593	...	27	...	...	...	...	...	...	120 6 10	435 18 11	456 17 0	...	...	Wentworthville
Seven Hills	4	607 19 2	9,406	748 15 4	5,945	1,318	...	8	...	98	...	...	...	...	336 13 3	1,125 8 7	1,080 8 0	55 5 1	...	Seven Hills.
Blacktown	2	1,158 9 9	10,484	1,124 8 5	8,744	1,491	5	25	...	137	...	...	...	...	3,471 16 4	4,696 3 9	8,353 0 7	...	3,761 16 10	Blacktown.
Rooty Hill	5	647 0 7	9,725	1,426 12 10	15,231	1,690	...	106	...	353	...	...	...	...	732 12 6	2,158 5 4	2,409 14 5	...	242 9 1	Rooty Hill.
Mount Druitt	1	130 0 0	2,754	323 8 1	4,716	182	...	...	...	...	...	...	...	...	67 2 1	380 10 2	431 14 8	...	41 4 6	Mount Druitt.
St. Mary's	5	614 17 8	9,257	1,526 10 10	22,614	5,449	...	608	124	6	2	...	...	...	1,977 2 2	3,504 2 0	3,985 2 2	...	491 0 2	St. Mary's.
Kingswood	4	482 11 1	1,772	235 1 2	17,169	322	...	79	...	...	...	...	...	...	153 19 10	394 1 0	402 1 3	...	8 0 3	Kingswood.
Penrith	31	3,214 11 9	21,101	4,923 19 8	3,910	6,477	...	1,337	...	802	...	...	...	...	3,437 16 3	8,411 15 11	8,637 9 8	...	255 18 0	Penrith.
Emu Plains	3	670 5 11	2,353	563 15 0	759	451	...	231	20,932	...	...	...	...	...	403 15 11	907 19 11	1,263 0 6	...	230 18 0	Emu Plains.
Glenbrook	7	717 3 10	2,485	498 15 10	295	6,635	7	15	...	333	...	...	...	...	719 0 0	1,213 5 7	3,577 4 5	...	263 18 10	Glenbrook.
Springwood	8	479 9 6	3,927	593 8 7	204	1,606	...	157	...	255	...	...	...	...	635 5 5	1,545 9 0	1,661 8 5	...	148 19 6	Springwood.
Linden	4	323 4 7	744	136 17 2	13	263	...	50	...	...	...	...	...	...	61 7 8	138 4 10	209 9 9	...	11 4 11	Linden.
Lawson	5	485 8 5	4,514	721 12 0	79	1,303	...	189	...	...	...	...	...	...	622 15 0	1,344 7 9	1,666 3 0	...	261 15 3	Lawson.
Wentworth Falls	4	434 7 6	3,323	631 10 4	66	1,147	...	162	144	...	...	...	...	...	639 1 6	1,270 11 10	2,871 8 11	...	1,100 17 1	Wentworth Falls.
Katoomba	9	973 9 2	12,281	2,423 18 11 1/2	565	3,203	22,203	852	7,023 9 0	9,453 7 11 1/2	7,737 14 0	1,715 13 11 1/2	Katoomba.
Blackheath	6	530 11 5	5,779	1,057 17 7	260	2,395	...	478	...	...	...	...	...	...	1,164 10 7	2,262 8 2	2,280 15 6	...	29 7 4	Blackheath.
Mount Victoria	9	936 5 5	5,332	2,211 17 0	311	798	...	480	...	...	...	...	...	...	712 2 0	2,923 19 0	3,558 4 1	...	674 5 1	Mount Victoria.
Hartley Vale	2	140 0 0	1,067	330 16 7	1,154	939	17,540	1,021 13 10	1,352 10 5	1,139 15 8	192 14 9	Hartley Vale.
Bell	4	519 2 7	492	132 2 9	277	95	14	25	...	...	...	...	...	...	120 12 7	272 15 4	380 6 3	...	107 10 11	Bell.
Clarence Siding	4	424 19 10	451	74 13 1	742	68	8	62	1,631	...	...	...	...	...	104 2 10	178 13 11	199 12 4	...	11 16 5	Clarence Siding.
Zig Zag	4	521 2 2	130	11 13 0	...	...	...	...	...	...	...	...	...	...	11 13 0	29 1 4	...	...	17 8 4	Zig Zag.
Esbank	25	2,892 0 2	4,199	1,811 0 0	7,134	7,444	59,250	1,753	...	1,003	2	...	...	...	8,134 16 2	9,945 16 2	10,708 8 7	...	6,762 7 5	Esbank.
Lithgow	3	301 19 7	3,717	1,361 14 1	...	...	...	...	...	...	...	...	...	...	1,321 14 1	1,514 10 9	...	...	162 16 8	Lithgow.
Bowenfels	5	556 8 5	1,525	563 3 5	261	857	1,752	53	...	6	2	...	...	...	751 8 10	1,819 12 8	1,590 10 6	...	279 18 3	Bowenfels.
Wallerawang	16	1,682 12 9	6,568	2,196 10 1	71,091	1,171	11,049	348	13	...	...	...	...	...	1,568 0 9	3,764 10 10	4,351 15 1	...	587 4 3	Wallerawang.
Rydal	6	703 2 10	2,298	591 18 1	541	828	...	68	...	...	...	...	...	...	313 11 10	965 4 11	5,154 13 8	...	4,249 8 4	Rydal.
Tarana	4	467 17 11	2,210	800 11 8	752	759	...	23	...	...	...	...	...	...	924 17 11	1,794 9 7	2,406 16 0	...	612 6 5	Tarana.
Locksley	3	270 0 0	640	136 8 10	1,011	72	...	...	...	23	63	...	...	...	43 16 9	180 5 7	247 16 5	...	67 10 10	Locksley.
Brewongle	5	476 12 4	1,750	395 1 11	3,000	334	...	...	...	78	436	...	...	...	388 19 0	784 0 11	812 9 1	...	25 8 2	Brewongle.
Raglan	4	499 19 5	1,099	188 13 0	1,620	257	...	96	...	20	156	...	...	...	170 10 5	359 0 5	349 14 1	...	0 15 4	Raglan.
Kelso	4	530 19 10	1,012	712 7 10	7,275	1,022	...	304	...	...	...	...	...	...	1,555	4,257 11 2	4,625 11 7	...	369 0 5	Kelso.
Bathurst	31	3,942 14 2	22,583	13,449 16 6 1/2	11,564	21,393	141	12,439	14	87	2,422	412	528	23	26,092 11 6	39,542 8 0 1/2	40,121 0 3	...	578 18 2 1/2	Bathurst.	
Perth	5	311 0 6	2,943	435 3 6	4,470	765	...	77	618	...	1,620	...	...	...	1,036 14 5	1,471 17 11	1,553 16 1	...	81 18 2	Perth.
George's Plains	5	457 8 2	2,036	376 13 10	2,227	381	62	43	158 0 6	533 14 4	522 2 0	11 12 4	George's Plains.
Wimbleton	3	301 2 7	1,321	217 3 3	742	83	...	...	...	...	263	...	...	...	58 16 7	275 19 10	349 18 6	...	79 18 8	Wimbleton.
Newbridge	6	610 1 0	4,487	1,247 2 7	4,307	1,267	...	248	1,698	1,603 3 7	2,910 6 2	2,785 13 11	124 7 8	Newbridge.
Blayney	13	1,121 16 0	8,016	3,547 6 8 1/2	5,293	2,342	...	456	244	12	544	...	...	...	3,071 14 8	6,610 1 4 1/2	6,808 2 4	...	181 0 1 1/2	Blayney.
Multhorpe	10	645 5 1	4,320	1,062 8 4	8,593	2,374	...	589	1,258	2,282 13 8	3,345 2 0	3,321 6 0	23 16 0	Multhorpe.
Spring Hill	10	545 6 8	3,814	570 14 7	4,351	1,159	...	1,770	223	1,698 5 0	2,263 19 7	1,638 12 8	635 0 11	Spring Hill.
Orange	21	2,326 9 7	23,513	11,449 13 1 1/2	13,634	17,902	7	5,206	139	436	1,210	23	683	68	22,455 17 2	33,995 10 3 1/2	34,040 8 8 1/2	...	734 13 5	Orange.	
Mullion Creek	3	309 13 8	1,370	229 16 8	1,593	218	...	...	...	...	705	...	...	...	102 10 8	352 15 11	451 19 7	...	149 8 8	Mullion Creek.
Kerr's Creek	5	279 19 10	763	154 6 1	285	62	...	...	...	...	197	...	...	...	40 2 5	176 8 0	233 4 10	...	36 16 4	Kerr's Creek.
Warne	2	299 13 10	1,256	375 4 9	231	209	...	...	...	...	1,010	...	...	...	211 16 8	587 1 0	733 17 8	...	146 16 8	Warne.
Store Creek	2	281 11 4	471	125 8 1	65	39	75	29 2 0	154 10 10	153 11 5	0 19 5	Store Creek.
Stuart Town	4	400 14 0	2,195	803 5 2	185	722	...	...	...	...	319	...	...	...	1,078 4 2	1,881 9 4	2,110 13 8	...	229 4 4	Stuart Town.
Murrumbidgee	3	286 10 3	974	222 0 2	453	204	...	...	...	...	1,288	...	...	...	290 11 11	512 12 1	676 17 6	...	164 6 4	Murrumbidgee.
Drystone	2	308 0 0	1,231	231 18 0	919	188	...	...	...	...	...	...	...	...	148 15 10	480 13 10	392 15 1	...	12 1 3	Drystone.
Mary Vale	6	392 15 8	824	180 10 4	1,920	165	3	238 18 7	474 8 11	336 10 0	187 15 11	Mary Vale.
Wellington	14	1,013 18 11	6,046	4,242 19 6 1/2	6,221	4,060	...	152	304	4	2,399	8,503 9 3	12,746 7 9 1/2	12,023 13 6	717 14 3 1/2	Wellington.
Genrie	2	260 10 6	1,471	340 17 0	1,334	281	...	...	...	...	190	1,387	...	...	283 14 8	680 12 0	866 2 4	...	235 10 4	Genrie.
Murrumbidgee	4	317 6 4	1,546	435 3 9	2,728	311	...	...	...	...	14	...	...	...	370 19 10	790 8 7	973 17 11	...	177 14 4	Murrumbidgee.
Dubbo	27	2,782 17 11	11,974	12,162 3 1 1/2	7,008	11,688	8	904	461	808	10,775	794	111	44	27,328 16 2	41,490 19 3 1/2	54,315 19 8 1/2	...	12,925 0 5	Dubbo.	

APPENDIX XXII—continued.

Stations.	No. of hands employed including Station-masters.	Total Salaries and Wages Expenditure.	No. of Tickets Issued.	Revenue from Tickets and Coaching Traffic.	GOODS.		COAL.		Other Minerals.		WOOL.		HAY, STRAW, AND CHAFF.		Revenue collected at each Station from Goods and Live Stock Traffic.	Total Earnings, exclusive of Special Earnings.		Increase.	Decrease.	Stations.				
					1893.	1893.	Out. Tons.	In. Tons.	Out. Tons.	In. Tons.	Out. Tons.	In. Tons.	Out. Bales.	In. Bales.		Out. Trucks.	In. Trucks.				1893.	1892.	1893.	1892.
Narramin	6	450 5 0	3,433	1,740 9 10	4,138	2,170	6	1	8,991	110	6	5,485 6 8	7,235 16 6	3,078 7 11	1,149 8 7	193 16 1	Narramin.							
Trangie	4	308 0 8	2,702	1,909 8 5	4,439	2,119	13	10	10,703	6	14	4,025 12 1	5,936 0 6	6,179 16 7	313 12 2	103 16 1	Trangie.							
Neverite	5	635 13 1	4,732	6,978 11 7	5,372	4,095	19	134	29,733	40	20	12,075 5 6	18,053 16 6	17,740 4 33	54 0 8	26,496 9 11	Neverite.							
Mulleungderry	12	1,349 10 0	6,601	6,756 13 3	4,083	2,185	186	60	10,699	717	107	10,310 6 11	17,091 0 2	43,467 10 1	374 1 7	103 10 11	Mulleungderry.							
Nyngan	1	109 2 10	355	178 12 10	968	2,185	25	9	1,515	43	4	7,569 8 10	10,880 9 2	10,880 9 2	10,880 9 2	103 10 11	Nyngan.							
Bobby Mountain	2	315 2 7	2,930	2,325 5 4	1,447	3,811	9	9	4,255	4	4	1,726 11 9	2,602 10 5	2,709 10 4	103 10 11	103 10 11	Bobby Mountain.							
Gobar	4	304 3 10	1,219	875 18 8	1,144	800	7	1,067	6,306	4	4	1,421 10 10	2,420 16 3	4,522 18 2	2,102 1 9	4,280 11 1	Gobar.							
Girilambone	12	293 16 2	935	995 16 7	690	574	6	109	6,306	35	35	3,456 10 6	6,756 12 5	11,087 3 6	4,280 11 1	4,280 11 1	Girilambone.							
Coolahah	4	397 0 7	2,493	3,259 16 0	3,268	1,904	765	825	75,892	637	699	69,284 13 1	78,113 17 5	98,265 0 9	28,151 3 4	28,151 3 4	Coolahah.							
Byrock	15	2,182 11 11	6,141	13,829 4 4	13,852	21,106	35	293	211	2	15	19,478 16 5	20,654 0 4	22,617 19 0	1,963 18 8	1,963 18 8	Byrock.							
Moorilla	4	444 9 0	7,997	1,173 3 11	23,468	2,158	12	12	1,103	7	3	184 15 2	567 2 5	673 10 11	106 14 6	106 14 6	Moorilla.							
Bourke	6	221 16 3	1,940	882 7 3	12,705	456	942	30	2,072	2,689	844	2,171 17 10	4,862 9 8	4,539 5 10	28 3 10	28 3 10	Bourke.							
Riverside	1	504 2 4	13,393	2,690 11 10	5,172	4,622	1	1	1	1	1	121 7 1	528 3 10	500 13 6	21 10 4	21 10 4	Riverside.							
Mulgrave	8	180 0 0	1,072	403 16 9	98	247	237	47	72	94	13	2,239 2 0	5,275 4 1	5,879 16 4	604 12 3	604 12 3	Mulgrave.							
Windsor	4	679 2 0	11,751	3,078 2 1	8,239	5,901	105	72	105	72	4	1,538 17 3	2,106 3 4	2,411 9 0	305 5 8	305 5 8	Windsor.							
Clarendon	2	182 16 9	2,088	597 6 1	504	978	1	14	7	1,437	11	770 3 7	1,108 15 0	934 17 7	173 18 2	173 18 2	Clarendon.							
Richmond	2	178 0 0	876	438 7 2	933	511	8	8	957	40	3	615 2 2	807 18 1	1,215 0 0	487 4 5	487 4 5	Richmond.							
Carcar	3	201 11 0	1,466	292 13 11	1,638	355	812	79	1,511	79	2	1,337 10 0	2,044 0 6	2,243 9 6	204 3 0	204 3 0	Carcar.							
Mandurama	4	288 0 8	2,124	706 7 6	2,323	881	94	13	21,833	1	2	17,031 4 5	22,597 7 11	24,456 19 7	1,360 11 8	1,360 11 8	Mandurama.							
Lynnhurst	11	834 19 3	6,009	4,606 3 6	7,352	7,902	7	7	9,663	257	34	8,625 1 5	8,893 17 10	9,886 0 5	987 2 7	987 2 7	Lynnhurst.							
Woodstock	3	471 5 1	1,551	873 16 5	7,207	3,048	2,591	12,102	30	11	3	22,025 4 5	28,348 0 11	27,023 11 11	424 18 0	424 18 0	Woodstock.							
Cowra	5	545 2 5	6,645	5,423 5 6	6,762	12,076	55	32	881	3	3	1,094 12 3	1,189 16 3	1,610 1 6	420 5 3	420 5 3	Cowra.							
Borenore	2	243 19 2	310	95 4 0	215	1,725	1,182	8,394	56	11	11	699 4 7	853 9 11	941 11 1	41 18 10	41 18 10	Borenore.							
Molong	6	230 3 6	644	284 5 1	2,531	431	293	1,120	32	3	3	1,972 18 3	3,551 5 1	3,484 10 4	25 5 9	25 5 9	Molong.							
Piper's Flat	12	423 19 6	2,150	1,538 6 10	1,023	1,315	113	1,288	1,547	1	1	21,953 4 6	28,895 1 0	20,825 17 9	930 16 9	930 16 9	Piper's Flat.							
Capertee	15	1,065 13 11	6,958	6,011 16 7	9,362	7,129	60	3,471	78,295	424	3	304 19 2	1,190 3 4	1,409 2 2	269 18 10	269 18 10	Capertee.							
Rylstone	8	753 9 2	4,892	894 4 2	364	1,504	411	189	94	1	1	82 18 7	427 17 2	114 4 9	313 6 5	313 6 5	Rylstone.							
Mudgee	2	306 1 1	2,315	394 12 7	189	94	127	6	100	18	5	869 0 11	2,904 10 1	3,278 8 10	313 12 9	313 12 9	Mudgee.							
Hawkesbury	10	887 11 7	6,893	3,068 15 2	807	1,514	6	31	100	18	15	843 17 3	715 9 2	986 0 10	281 0 8	281 0 8	Hawkesbury.							
Woy Woy	7	436 8 11	2,910	871 2 11	4,897	657	31	100	100	18	18	998 5 5	1,933 0 6	2,437 19 3	504 17 9	504 17 9	Woy Woy.							
Gosford	6	440 16 1	4,732	934 15 1	10,103	2,102	475	2,511	41	2 10	807 8 8	744 12 8	801 5 3	307 18 11	90 10 3	90 10 3	Gosford.							
Ournimbah	3	540 12 7	3,225	529 6 3	6,520	475	244	885	127	10 5	5	41 2 10	807 8 8	397 18 11	90 10 3	90 10 3	Ournimbah.							
Wyong	2	276 13 10	2,371	303 13 6	385	373	12	3,727	3	8	8	127 10 5	527 3 11	438 14 3	88 9 8	88 9 8	Wyong.							
Morrissett	2	309 0 0	2,728	303 13 6	385	373	12	3,727	3	8	8	443 8 3	1,180 11 8	1,692 11 2	531 19 5	531 19 5	Morrissett.							
Awaba	4	429 16 4	8,726	717 3 5	573	750	3,315	12	3,727	3	8	323 11 11	1,328 11 4	1,128 3 1	4 11 9	4 11 9	Awaba.							
Fassfern	0	633 17 0	11,233	794 10 5	783	2,082	3,148	147	147	25	25	123 11 10	1,123 6 8	1,190 6 9	66 10 5	66 10 5	Fassfern.							
Teralba	4	457 17 7	15,492	990 11 5	986	2,533	13	147	147	25	25	123 11 10	1,123 6 8	1,190 6 9	66 10 5	66 10 5	Teralba.							
Cockle Creek	111	13,825 6 5	91,663	24,738 3 4	45,684	41,012	80	1,827,653	1,027	2,019	63	70,977	322	947	126,869 17 5	161,608 0 9	169,785 18 2	18,127 17 5	18,127 17 5	Cockle Creek.				
Adamstown	16	2,127 14 11	41,108	3,035 11 3	5,186	8,941	11	828	308	8	197	3,516 5 4	6,551 16 7	6,523 13 8	28 2 11	28 2 11	28 2 11	Adamstown.						
Broadmeadow	43	6,056 13 6	58,245	3,662 4 2	659	3,370	3,482	1,715	18	118	4	731 10 11	4,388 15 2	5,699 13 2	1,265 17 1	1,265 17 1	1,265 17 1	Broadmeadow.						
Newcastle	27	3,130 7 10	58,245	3,662 4 2	659	3,370	3,482	1,715	18	118	4	731 10 11	4,388 15 2	5,699 13 2	1,265 17 1	1,265 17 1	1,265 17 1	Newcastle.						
Honeysuckle Point	1	348 18 0	48,945	3,041 9 9	1,758	2,725	2,930	4	4	1	01	402 12 6	3,444 2 3	4,312 12 7	808 10 4	808 10 4	808 10 4	Honeysuckle Point.						
Bullock Island	11	1,425 0 3	48,945	3,041 9 9	1,758	2,725	2,930	4	4	1	01	402 12 6	3,444 2 3	4,312 12 7	808 10 4	808 10 4	808 10 4	Bullock Island.						
Hamilton	5	716 8 1	9,045	795 3 5	2,961	6,669	4	4	4	17	10	1,222 14 1	2,218 17 6	3,081 14 4	1,462 16 10	1,462 16 10	1,462 16 10	Hamilton.						
Hamilton Weighbridge	9	937 17 2	18,536	1,464 2 8	291	3,127	55	429	249	7	10	677 17 2	2,331 19 11	1,710 4 10	612 15 1	612 15 1	612 15 1	Hamilton Weighbridge.						
Waratah	2	226 10 2	6,304	441 6 8	561	219	1,562	56	15	146	29	60,407	75 10 2	517 5 10	601 10 11	84 6 1	84 6 1	Waratah.						
WallSEND	2	271 9 6	2,879	141 12 9	684	47	1,562	56	15	146	29	60,407	11 15 0	158 7 9	151 3 11	2 3 10	2 3 10	WallSEND.						
Hexham	15	1,362 12 11	32,737	4,277 11 2	2,948	1,625	4,084	3	3,699	8	2,299	1,518 14 10	5,796 0 0	7,413 9 9	1,622 11 9	1,622 11 9	1,622 11 9	Hexham.						
Tarro	16	1,638 0 8	16,447	1,811 3 2	9,566	13,156	3,699	3	2,299	8	2,299	83,075 13 4	35,819 16 6	34,078 0 8	1,741 15 10	1,741 15 10	1,741 15 10	Tarro.						
Thornton	5	486 3 10	20,605	2,801 17 0	1,411	4	4	4	4	101	27	36	2,691 17 0	4,326 8 5	694 11 5	694 11 5	694 11 5	Thornton.						
East Maitland	97	2,938 10 6	32,247	3,182 7 3	12,292	15,131	1,168	292	3,268	2,961	361	191	13,427 13 6	22,610 1 3	21,609 14 2	1,000 7 1	1,000 7 1	1,000 7 1	East Maitland.					
Morpeth	3	399 4 0	1,571	163 19 9	787	402	74	74	74	74	4	9	883 1 9	1,017 1 0	756 6 7	290 14 5	290 14 5	290 14 5	Morpeth.					
High-street																				High-street.				
West Maitland																				West Maitland.				
Farley																				Farley.				

APPENDIX XXII—continued.

Stations.	No. of hands employed including Station-masters.	Total Salaries and Wages Expenditure.	No. of Tickets issued. 1893.	Revenue from Tickets and Coaching Traffic. 1893.	GOODS.		COAL.		Other Minerals.		WOOL.		RAY, STRAW AND CRAFF.		Revenue from Goods and Live Stock. 1893.	Total Earnings, exclusive of Special Earnings.			Increase. 1893.	Decrease. 1893.	Stations.	
					Out. Tons.	In. Tons.	Out. Tons.	In. Tons.	Out. Tons.	In. Tons.	Out. Bales.	In. Bales.	Out. Trucks.	In. Trucks.		1893.	1893.	1892.				
Lochinvar	4	£ 330 3 2	2,517	£ 507 14 10	784	978	.....	5	.....	.....	.....	80	.....	462 16 8	£ 970 11 0	£ 1,271 3 1	.....	.....	.....	300 11 7	Lochinvar.
Allandale	2	202 13 4	2,488	378 4 7	2,158	326	.....	.....	.....	.....	.....	1	1	252 4 1	630 8 8	665 1 6	.....	.....	.....	34 12 10	Allandale.
Greta	4	432 13 0	6,036	1,406 8 4	887	1,071	1,073	41	.....	.....	.....	5	5	790 2 8	2,256 11 0	2,423 0 7	.....	.....	.....	171 9 0	Greta.
Branxton	4	493 9 0	4,106	1,006 19 5	2,442	1,104	.....	83	.....	.....	220	.....	167	1	723 0 11	1,823 0 4	2,127 15 8	.....	.....	504 15 4	Branxton.
Whittingham	2	163 4 0	838	507 8 6	460	497	.....	8	.....	.....	236	.....	27	.....	233 6 9	740 14 8	646 12 7	91 1 8	.....	.....	Whittingham.
Singleton	10	1,806 6 4	15,864	7,910 7 3	5,973	5,863	2,006	1,172	12	140	.....	1	322	16	4,510 15 3	12,481 2 6	13,229 14 11	.....	.....	748 12 5	Singleton.
Nundah	2	296 17 9	3,205	317 0 8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	317 0 8	240 5 5	07 15 3	.....	.....	.....	Nundah.
Glennie's Creek	1	150 0 0	092	215 0 2	836	433	0,609	.....	.....	.....	50	.....	3	.....	177 0 11	392 1 1	434 19 7	.....	.....	42 18 0	Glennie's Creek.
Ravensworth	5	322 0 0	1,437	248 3 3	365	218	.....	.....	.....	.....	752	.....	3	3	186 9 7	334 12 10	642 0 2	.....	.....	167 7 4	Ravensworth.
Muswellbrook	22	1,514 12 8	7,776	4,420 7 1	3,030	5,571	632	131	.....	.....	8,188	.....	11	7	6,465 15 10	10,836 2 11	11,284 8 2	.....	.....	338 5 4	Muswellbrook.
Aberdeen	6	461 0 11	3,492	1,002 15 2	8,729	2,580	.....	4,940	.....	.....	2,186	.....	1	1	16,811 6 2	17,814 1 4	10,753 7 7	7,060 13 9	.....	.....	Aberdeen.
Scone	12	704 0 0	5,368	2,897 8 10	2,160	3,203	.....	247	.....	.....	5,947	.....	5	.....	4,031 0 8	5,063 9 6	7,389 13 2	.....	.....	436 8 8	Scone.
Wingen	5	336 6 10	886	288 16 5	261	223	.....	.....	.....	.....	351	.....	17	.....	213 12 0	602 0 2	640 1 2	.....	.....	137 12 0	Wingen.
Blandford	2	239 6 9	724	257 14 7	543	344	.....	13	.....	.....	1,898	.....	27	.....	336 7 0	594 1 7	638 17 1	.....	.....	64 15 0	Blandford.
Murrurundi	16	1,455 1 7	2,613	2,224 10 8	350	1,763	.....	.....	.....	.....	267	.....	1	5	2,633 0 5	4,877 11 1	4,759 13 0	117 18 1	.....	.....	Murrurundi.
Ardglen (late Doughboy Hollow.)	4	320 0 0	732	163 14 0	132	160	.....	11	.....	.....	731	.....	.....	.....	179 0 7	343 0 7	411 18 1	.....	.....	68 17 0	Ardglen (late Doughboy H.)
Willow-tree	6	466 13 1	1,114	416 6 1	868	665	.....	.....	.....	.....	3,015	.....	23	1	1,403 9 2	1,819 15 3	2,020 0 8	.....	.....	200 5 5	Willow-tree.
Quirindi	12	670 16 7	5,821	3,170 15 8	2,911	3,768	.....	168	.....	.....	8,370	.....	17	5	7,114 5 1	10,235 0 9	10,876 8 10	.....	.....	591 8 1	Quirindi.
Werris Creek	12	1,112 17 8	4,932	2,330 3 7	693	651	.....	50	.....	.....	727	.....	11	1	740 1 11	3,070 5 6	3,120 12 8	.....	.....	59 7 2	Werris Creek.
Breeza	2	371 7 0	790	520 8 8	1,105	223	.....	14	.....	.....	2,305	.....	.....	.....	1,274 10 2	1,703 7 10	1,814 10 1	.....	.....	19 3 8	Breeza.
Carlewis	7	107 4 2	652	314 10 10	496	319	.....	451	.....	.....	1,214	.....	.....	.....	404 2 5	718 19 3	1,049 8 11	.....	.....	830 4 3	Carlewis.
Gunnedah	12	743 5 2	4,224	3,672 7 6	5,189	2,826	.....	35	.....	.....	9,042	.....	7	2	7,731 9 8	11,493 16 9	11,556 2 2	.....	.....	152 5 5	Gunnedah.
Boggabri	0	804 6 0	1,513	1,006 0 9	2,863	994	.....	37	.....	.....	3,195	.....	6	2	1,007 7 3	3,063 8 0	3,238 13 11	.....	.....	223 5 11	Boggabri.
Baan Baa	1	150 0 0	721	251 13 4	497	120	.....	.....	.....	.....	856	.....	18	.....	134 8 5	606 6 9	606 10 3	.....	.....	217 9 6	Baan Baa.
Narrabri	16	1,955 5 10	5,422	3,974 11 7	12,157	10,065	.....	220	.....	.....	63,031	.....	72	81	40,636 17 6	47,611 9 7	51,706 13 4	.....	.....	2,155 4 3	Narrabri.
Currabubula	6	342 4 8	1,412	983 5 7	1,471	506	.....	14	.....	.....	2,000	.....	11	.....	402 7 1	770 12 8	851 18 2	.....	.....	111 6 0	Currabubula.
West Tamworth	10	932 7 10	632	328 7 7	4,400	3,190	.....	.....	.....	.....	16,850	.....	16	.....	6,860 4 9	7,138 12 4	8,003 14 8	.....	.....	318 2 4	West Tamworth.
Tamworth	17	1,273 11 2	8,162	7,839 6 5	8,811	9,151	.....	9	1,030	10	7	.....	.....	.....	17,693 19 11	25,533 6 4	26,565 2 1	.....	.....	1,031 13 9	Tamworth.
Moonbi	8	472 6 7	1,784	410 10 7	900	516	.....	.....	.....	.....	1,111	.....	23	.....	423 0 9	809 0 4	1,124 8 2	.....	.....	258 7 10	Moonbi.
Woolbrook	1	190 0 0	853	136 5 0	141	309	.....	1	.....	.....	722	.....	275	.....	116 2 3	252 7 3	325 12 0	.....	.....	73 4 9	Woolbrook.
Walcha Road	7	531 16 8	1,901	1,591 19 5	1,494	1,703	.....	41	.....	.....	5,951	.....	.....	.....	3,583 4 2	5,175 3 7	7,136 11 8	.....	.....	1,961 8 1	Walcha Road.
Kentucky	3	260 11 5	734	203 14 10	357	187	.....	33	.....	.....	1,702	.....	.....	.....	191 8 11	400 3 0	563 17 0	.....	.....	153 13 3	Kentucky.
Uralla	10	608 9 7	2,560	1,510 5 3	2,243	2,776	.....	82	.....	.....	3,162	.....	12	3	5,246 8 6	6,753 13 9	7,260 1 7	.....	.....	504 7 10	Uralla.
Armidale	24	2,020 16 6	8,232	9,259 3 7	3,827	11,532	.....	3	1,339	1,315	.....	.....	.....	.....	25,370 15 2	34,629 18 9	38,633 7 0	.....	.....	4,033 8 3	Armidale.
Dumaresq	5	217 9 0	697	180 19 4	655	122	.....	.....	.....	.....	1,208	.....	.....	.....	99 4 0	230 3 4	316 5 7	.....	.....	86 5 3	Dumaresq.
Black Mountain	3	199 8 0	570	197 3 5	1,647	264	8	462	273 1 4	470 4 9	419 3 8	51 1 1	243 14 8	Black Mountain.
Guyra	6	403 14 2	1,936	1,093 5 2	2,223	1,214	.....	14	.....	.....	2,160	.....	41	1	1,169 11 10	2,177 17 0	2,421 11 8	.....	.....	143 7 5	Guyra.
Ben Lomond	5	248 13 9	897	261 0 9	564	318	.....	.....	.....	.....	811	.....	.....	.....	277 0 11	538 7 8	630 15 1	.....	.....	0 15 11	Ben Lomond.
Glencoe	7	303 17 4	536	373 14 8	779	130	.....	.....	.....	.....	303	.....	.....	.....	218 15 3	597 9 6	593 5 5	.....	.....	.....	Glencoe.
Glen Innes	17	1,143 16 3	6,022	5,239 7 7	5,043	7,798	.....	107	837	15	13,938	.....	1	49	16,956 1 10	22,195 9 5	25,031 14 2	.....	.....	2,386 4 9	Glen Innes.
Dundee	4	225 8 0	551	197 14 10	2,064	303	.....	.....	.....	.....	1,430	.....	.....	.....	193 11 0	391 6 10	421 12 1	.....	.....	30 6 3	Dundee.
Deepwater	6	317 13 4	2,476	1,689 16 2	579	1,944	.....	21	1,432	37	1,421	.....	.....	.....	4,428 2 9	6,117 13 11	6,072 7 10	.....	.....	554 8 11	Deepwater.
Bolivia	1	210 0 0	613	180 8 0	793	59	47	85 16 2	206 4 2	201 6 8	64 17 11	1,407 13 6	Bolivia.
Tenterfield	10	638 8 9	3,864	2,775 2 1	3,711	2,044	.....	0	100	62	12	.....	.....	.....	6,739 0 6	6,514 8 6	10,632 2 0	.....	.....	1,581 18 9	Tenterfield.
Jennings	.....	.....	2,600	2,000 15 3	1,209	879	.....	13	6	301	53	.....	.....	.....	821 10 0	2,831 9 0	4,413 7 9	.....	.....	.....	Jennings.
Victoria	.....	.....	21,730	25,380 6 4	12,043	6,393	.....	.....	.....	.....	.....	.....	.....	.....	2,722 18 7	28,693 4 11	33,114 18 8	.....	.....	.....	Victoria.
Queensland	.....	.....	2,421	3,293 5 5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	8,293 5 5	10,631 17 1	.....	.....	.....	Queensland.
South Australia	.....	.....	1,049	2,215 9 6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,215 9 6	2,437 17 2	.....	.....	.....	South Australia.
Cook and Sons	.....	.....	1,149	1,621 0 10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,621 0 10	1,710 4 2	.....	.....	.....	Cook and Sons.
Orient S.S. Co.	.....	.....	134	210 12 9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	210 12 9	377 6 9	.....	.....	.....	Orient S.S. Co.
P. and O. S.S. Co.	168	310 8 3	310 8 3	294 0 1	16 8 2	P. and O. S.S. Co.
GRAND TOTAL	2,603	292,280 1 4	8,109,073	1,033,452 1 2	1,279,306	1,279,306	2,228,577	2,228,577	115,846	115,846	638,620	638,620	15,429	15,429	1,827,911 6 7	2,801,363 7 9	3,056,079 4 6	90,087 11 0	235,003 7 9	.....	.....

APPENDIX XXIII.

NEW SOUTH WALES GOVERNMENT RAILWAYS.

RETURN showing the Appointments of Railway Employés from 1st July, 1892, to 30th June, 1893.

Date.	Name.	Position.	Rate.	Remarks.
SECRETARY'S BRANCH.				
1892.				
1 Oct.	Mathieson, Kenneth	Messenger	30/- per week	Transferred from Supernumerary Staff.
1 "	Hayward, John	"	8/- per day	" " " "
1893.				
1 Feb.	Fullwood, Walter S.	Clerk	£180 per annum	From Locomotive Branch.
10 Mar.	Ambler, Percy V.	Messenger to Railway Solicitor.	5/- per day	From Traffic Branch.
CHIEF ACCOUNTANT'S BRANCH.				
1892.				
1 Nov.	Bartholomew, William	Apprentice Clerk	£30 per annum	Transferred from Supernumerary Staff.
1893.				
17 Jan.	Hartigan, Thomas J.	"	£30 "	Vice W. Bartholomew.
TRAFFIC AUDITOR'S BRANCH.				
1892.				
1 Nov.	Wolnski, Ury	Apprentice Clerk	£80 per annum	Transferred from Supernumerary Staff.
1 "	Lacey, James	"	£30 "	" " " "
1893.				
1 Jan.	Bolger, Simeon F.	Clerk	£150 "	Exchanged with J. Fisher, from Traffic Audit Branch.
1 "	Patterson, Thomas	Inspector	£200 "	"
1 Mar.	M'Caulter, John	Apprentice Clerk	£30 "	Transferred from Supernumerary Staff -- Positions retrenched on Supernumerary Staff.
1 "	Furness, Arthur	"	£30 "	"
1 "	Carter, Frederick	"	£30 "	"
14 June	Wuuhop, Joshua	Messenger and Office-cleaner.	48/- per week	From Permanent-way Branch.
ENGINEER-IN-CHIEF FOR EXISTING LINES BRANCH.				
1892.				
15 July	Martin, Joseph	Labourer	7/- per day	From Supernumerary Staff, vice W. Tilly.
15 "	Hutton, James	"	7/- "	" " " " vice P. Coleman
15 "	Smith, Richard	"	6/6 "	" " " " vice R. McBan.
15 "	Ahearn, John	"	6/6 "	" " " " vice J. Moorby.
15 "	Farnsworth, Edwin	Fettler	7/- "	" " " " vice J. Harris.
15 "	Mullins, James	"	6/6 "	" " " " vice M. McDonald.
15 "	Shepherd, Thomas	"	6/6 "	" " " " vice G. Sullivan.
15 "	Riley, John	"	7/6 "	" " " " vice R. Allison.
15 "	O'Shea, Michael	"	6/6 "	" " " " vice R. Greenwood.
15 "	Sedgers, William	"	7/6 "	" " " " vice G. Contes.
15 "	Press, Thomas	"	7/6 "	" " " " vice J. Green.
22 "	Fecnan, Peter	"	6/6 "	" " " " vice J. Gorman.
22 "	Jackson, James	"	6/6 "	" " " " vice F. Mottram.
22 "	Rowlands, William	"	6/6 "	" " " " vice W. Daniels.
22 "	McKenna, Joseph	"	6/6 "	" " " " vice J. Kavanagh.
22 "	Davies, John	"	6/6 "	" " " " vice T. Barker.
22 "	Stewart, William	"	6/6 "	" " " " vice C. O'Brien.
22 "	Campbell, James	"	7/- "	" " " " vice P. Quinn.
22 "	Wilson, Andrew	"	7/- "	" " " " vice J. Badv.
30 "	Morrissey, Patrick	Labourer	6/6 "	" " " " vice S. Williamson.
2 Aug.	Pawley, Daniel	"	6/6 "	Vice D. M'Grath.
8 "	Meadley, Mark	"	6/6 "	Vice J. Spears.
8 "	Ward, John	"	6/6 "	Vice G. White.
12 "	Webber, Thomas	"	7/- "	From Supernumerary Staff.
12 "	Kilt, Michael	"	7/- "	" " " "
15 "	Foster, John	"	6/6 "	Vice J. Steedman.
15 "	Mulheron, Owen	"	6/6 "	Vice A. Bunyan.
16 Sept.	Deveaux, John	Fettler	6/6 "	Vice H. Gray.
16 "	Bradwell, John	"	6/6 "	Vice J. Foreman.
16 "	Whitton, George	"	6/6 "	Vice P. Maher.
19 "	Cartwright, William	Labourer	6/6 "	Vice A. M'Neely.
20 "	Haivey, Andrew	"	6/6 "	Vice R. White.
23 "	Purdon, John	"	6/6 "	From Supernumerary Staff, vice H. Hences.
23 "	Wren, Timothy	"	6/6 "	" " " " vice H. Curry.
23 "	Derley, James	"	6/6 "	" " " " vice E. Lester.
23 "	Miller, Carl	"	6/6 "	" " " " vice G. Castleman.
23 "	Kiehey, James	"	6/6 "	" " " " vice J. Harrison.
23 "	Ross, John	Office-boy	2/- "	From Supernumerary Staff
23 "	Bentley, Alfred	Labourer	7/- "	From Supernumerary Staff, vice C. Rule.
23 "	Dowling, Thomas	Boy	2/3 "	" " " " vice F. Martin.
23 "	Estall, Robert	Labourer	6/6 "	" " " " vice E. Roberts.
23 "	Leit, Frederick	"	6/6 "	" " " " vice T. Fox.
23 "	Mills, Joseph	"	7/6 "	" " " " vice F. Adams.
23 "	Moston, James	"	7/6 "	" " " " vice W. Condon.
23 "	Wilkinson, Richard	"	6/6 "	Vice G. Glover.
7 Oct.	Yates, John	"	6/6 "	Vice J. Clardge.
8 "	Morris, Samuel	"	6/6 "	Vice R. Wilde.
21 "	M'Mahon, James	"	7/- "	Vice C. Conroy
21 "	Shaw, James	"	6/6 "	Vice W. Moore
21 "	Grigg, James	"	7/- "	Transferred from Supernumerary Staff.
21 "	Bailey, Samuel	"	7/- "	" " " "
7 Nov.	Barnes, John	"	6/6 "	Vice John Donnelly.
18 "	Larkins, Patrick	"	6/6 "	Vice J. Hicks.
25 "	Hawthorn, Frank	"	7/- "	Vice E. Rowe
25 "	Hickey, Daniel	"	7/- "	Vice D. Mitchell
25 "	Chaseling, Amos	"	7/6 "	Vice J. Worthington
13 Dec.	Blackett, G. H.	"	6/6 "	Vice J. Jacobs.
16 "	Wilkinson, Edward	"	6/6 "	Transferred from Supernumerary Staff.
16 "	Sweeney, Edward	"	6/6 "	Vice J. Barlow
16 "	Castles, James	"	6/6 "	Vice G. Shaw
16 "	Sullivan, Ernest	"	6/6 "	Vice R. Jeffrey
16 "	Atkins, Thomas	"	6/6 "	Vice J. Sloane
16 "	M'Aviney, James	"	6/6 "	Vice J. Boland
23 "	Bradley, John	"	6/6 "	Vice J. Garner
23 "	Schmeier, Charles	"	6/6 "	Vice P. Collin

APPENDIX XXIII—continued.

Date.	Name.	Position.	Rate.	Remarks.
ENGINEER-IN-CHIEF FOR EXISTING LINES BRANCH—continued.				
1893.				
1 Jan.	Watson, Henry J.	Clerk	£185 per annum	
1 "	Train, William	Apprentice Clerk	£40	
18 "	Pearson, Thomas	Labourer	6/6 per day	Vice E. Furbanks
13 "	Cranney, William		8/6	Vice O. Mulheron
20 "	Gale, Richard	Fettler	7/-	Vice J. Miller
26 "	Tangye, Matthew	Labourer	6/6	Vice G. O'Reilly
27 "	Dunn, William		6/6	Vice J. Milton
9 Feb.	Jansen, Francis		6/6	Vice A. Yeomans
10 "	Dumbrell, Edmond		6/6	Vice A. Rivers
17 "	Madin, Bernard		6/6	Vice R. Mattson
17 "	Taylor, Alfred		6/6	Vice G. Davies
17 "	Trunley, John		6/6	Vice E. Genge
17 "	Moran, Denis		6/6	Vice P. Maher
17 "	Winterbine, Alfred		6/6	Vice W. Walsh
17 "	Hansen, Gerard		7/-	Vice F. Pont
17 "	Williams, Caleb		6/6	Vice J. Purcell
17 "	Sullivan, Timothy	Fettler	6/6	Vice J. Wall
17 "	Jenkins, Daniel		6/6	Vice M. Duggan
24 "	Miler, Thomas P.	Office boy	2/-	
24 "	Reilly, Michael		7/-	
4 Mar.	Broderick, John	Labourer	6/6	Vice W. Hickerton
4 "	Maxwell, James		6/6	Vice D. Kemp
24 "	Pendergast, M.		6/6	Vice J. West
1 April	Abraham, John A.		7/-	Transferred from Supernumerary Staff. Position retrenched on Supernumerary Staff.
1 "	Abel, Lyndsay	Office boy	4/-	" " "
1 "	Robinson, Fredk.		4/-	" " "
7 "	Rody, Michael	Labourer	6/6	Vice G. Shaw.
7 "	Hanbridge, Richard		7/-	Transferred from Supernumerary Staff. Position retrenched on Supernumerary Staff.
10 "	Wilkins, Thomas		6/6	Vice Richard Catio.
14 "	Howe, Michael		6/6	Transferred from Supernumerary Staff, vice Patk. Hill. Position retrenched on Supernumerary Staff.
31 "	Steedman, James		7/6	Reinstated.
24 "	Jones, George		6/6	Vice Wm. Bell.
25 "	Dwyer, Matthew		6/6	Transferred from Supernumerary Staff, vice Saml. Erith.
27 "	Snyers, Wm.		6/6	Vice John Foley.
28 "	Chrystal, George		7/-	Transferred from Supernumerary Staff, vice E. James. Position retrenched on Supernumerary Staff.
28 "	Eather, Thomas		6/6	Transferred from Supernumerary Staff, vice Onton Nelson. Position retrenched on Supernumerary Staff.
23 "	Jones, Griffith		6/6	Transferred from Supernumerary Staff, vice James Droncy. Position retrenched on Supernumerary Staff.
20 "	Barrott, Thomas		6/6	Vice Donald Frampton.
5 May	Smith, John		6/6	Transferred from Supernumerary Staff. Position retrenched on Supernumerary Staff.
9 "	Maloney, Michael		6/6	Vice Wm. Stimpson.
12 "	Lee, Henry	Ganger	9/-	Reinstated.
16 "	Cliff, Fredk.	Labourer	6/6	Vice Wm. Souter.
16 "	Cliff, Wm.		6/6	Vice Wm. Lodge
19 "	Webb, Saml.		6/6	Vice Nicholas Schons.
22 "	Rea, John	Fettler	7/6	From Tramways, vice John Baylis.
CHIEF MECHANICAL ENGINEER'S BRANCH.				
1892.				
1 July	Angus, William G.	Gasman	6/6 per day	From Supernumerary Staff, vice T. Pickering.
1 "	Cambourn, Walter	Cleaner	5/-	vice P. Chamber.
1 "	Higgins, Henry	Storeman	7/-	" " " vice G. Gray.
1 "	Morphy, Edward	Junior clerk	£50 per annum	" " " vice G. Roberts.
1 "	Flook, E. A.	Apprentice clerk	£60	From Supernumerary Staff.
1 "	Donald, James A.	Clerk	£125	" " " "
1 "	Mather, A. J.	Apprentice clerk	£40	" " " "
1 "	Wilson, E. J.		£50	" " " "
1 "	Hines, Frederick	Apprentice	7/10 per day	Vice F. Brunning.
15 "	O'Donoghoe, Phillip	Apprentice clerk	£30 per annum	Vice J. Geekie.
15 "	Webber, William	Oilier	7/6 per day	From Supernumerary Staff, vice J. Fleming.
15 "	Crowe, Daniel	Labourer	7/-	" " " vice A. Ranadge.
15 "	Fiddes, Frederick	Striker	7/-	" " " vice G. Brown.
15 "	Dunstan, Richard	Moulder	10/-	" " " vice E. Burke.
15 "	Loug, Michael	Striker	7/-	" " " vice J. Blake.
15 "	Warton, Charles E.	Cleaner	5/6	" " " re-employed.
15 "	Wythes, James		6/-	" " " vice S. Smith.
15 "	Kilkelly, John		6/-	" " " vice T. Stephenson.
15 "	Blackney, Thomas		5/-	" " " vice E. Baker.
15 "	Clooney, Thomas		5/-	" " " vice D. Wainwright.
15 "	Chapman, George	Fuelman	7/-	" " " vice W. Wilson.
15 "	Cracknell, Frederick	Cleaner	5/6	" " " vice J. Matthews.
15 "	Kitchener, William	Fuelman	7/-	" " " vice W. Ainsworth.
15 "	Freeman, John	Cleaner	5/-	" " " vice M. Donohoe.
15 "	Hauter, James		5/-	" " " vice W. O'Connell.
15 "	Donn, William	Labourer	7/-	" " " vice W. Blanchard.
15 "	Kendrigan, Edward	Cleaner	5/6	" " " vice J. Norton.
10 "	Newton, Frank	Apprentice clerk	£30 per annum	Vice J. Geekie
21 "	Bellerby, John W.	Cleaner	7/- per day	From Supernumerary Staff, vice P. Gallagher.
21 "	Jones, Evan W.		7/-	" " " vice G. Pettitt.
22 "	Worrell, Arthur D.	Labourer	7/-	" " " vice S. Bowlsnd.
29 "	Fenn, John	Car-builder	10/-	" " " vice J. Bend.
29 "	Malarkey, John	Labourer	6/6	" " " vice R. Kull-growth.
5 Aug.	Worrell, Frederick	Cleaner	5/-	From Supernumerary Staff, vice W. Strong.
5 "	Tooker, Herbert F.	Apprentice clerk	£30 per annum	Vice J. Geekie
9 "	King, Mary	Car-maker	8/- per week	Vice Mrs. Gould.
10 "	Nicholas, Josiah	Apprentice clerk	£30 per annum	Vice J. Geekie.
15 "	Dedds, James	Apprentice	5/- per day	Reinstated.
16 "	Vaughn, Arthur	Boy	2/-	Vice J. M'Farlane.
18 "	Powys, C.	Upholsteross	4/-	Vice Miss Leonard.
24 "	Mathews, James	Boy	3/-	Vice T. O'Brien.
30 "	Powys, John	Apprentice	10d.	Vice D. Chapman.
1 Sept.	Fryer, William	Blacksmith	10/6	Vice G. Lutton.
9 "	Kennedy, James	Cleaner	5/6	From Supernumerary Staff, vice F. Baggs.
9 "	Funnell, Frederick		6/-	" " " vice W. Christison.
9 "	Symons, John		6/-	" " " vice J. Moran.
9 "	Corcoran, Peter	Fuelman	7/-	" " " Re-employed.
9 "	Rimes, Henry	Cleaner	7/-	" " " vice W. Nevison.
9 "	Weeks, Joseph	Fuelman	7/-	" " " vice J. Creswick.
9 "	Tarquhar, Alfred	Cleaner	5/-	" " " vice J. Wooley.
26 "	Charlton, James		5/-	Vice F. Aubrey.
1 Oct.	Argent, George	Fuelman	6/6	Vice G. Hill
6 "	M'Farlane, Allen	Gas-fitter's Assistant	5/-	Vice J. Somers
6 "	O'Brien, William	Wagon-builder	10/-	Vice J. Hislop
6 "	Hansen, James	Shunter	7/-	Vice T. O'Brien
6 "	Hunter, Henry	Painter's Assistant	5/-	Vice W. Holmes
6 "	Burdett, Charles	Labourer	6/6	Vice P. Leonard
6 "	Fitzhenry, Fred.	Crane-driver	7/-	Vice H. Reid

APPENDIX XXIII—continued.

Date.	Name.	Position.	Rate.	Remarks.
CHIEF MECHANICAL ENGINEER'S BRANCH—continued.				
1892.				
6 Oct.	Johnston, George W.	Fitter	10/- per day	Vice H. Ingram
6 "	Morris, Francis	Fuelman	7/-	Vice J. Dann
6 "	Wadley, John	"	7/-	Vice J. Crane
6 "	Barton, Fred	Lighter-up	7/-	Vice J. Huchey
6 "	Gilbert, Joseph	Cleaner	6/-	Vice A. Richards
6 "	Peñar, Joseph	"	7/-	Vice H. Sydenham
6 "	Egan, Patrick	"	6/-	Vice T. Ashbury
6 "	Huthnance, Samuel	"	7/-	Vice J. Donald
6 "	Ryan, Edward	"	6/-	Vice G. Lee
7 "	Scott, W. C.	"	4/-	Vice W. Reid
7 "	Landrigan, Patrick	Fuelman	7/-	Vice J. Rawcliffe
13 "	Nixon, Ralph	Cleaner	5/6	Vice F. Aubrey
13 "	Proud, A. B.	Labourer	7/-	Vice J. Byrnes
1 Nov.	Fuilwood, W. S.	Clerk	£180 per annum	Transferred from Supernumerary Staff.
4 "	Moses, George V.	Cleaner	6/- per day	Vice J. Thompson
4 "	Bradwyn, George	Fuelman	7/-	Vice J. Chisolm
4 "	Jones, John	Cleaner	5/6	Vice P. Lechane
11 "	Bell, Thomas	Labourer	7/-	Vice G. Gee
11 "	Scribner, Henry	"	7/-	Vice F. Sutor
11 "	Forgie, James A.	Boilermaker's Assistant	7/6	Vice W. Wills
11 "	Davies, John D.	"	7/-	Vice H. Harrison
11 "	Gleeson, Jeremiah	Striker	7/-	Vice R. Thompson
11 "	Tyson, Richard	Boy	3/6	Vice A. Bailey
11 "	Aitkenhead, Arthur	Coppersmith	10/-	Vice T. Hampton
11 "	McClure, James	Boy	4/-	Vice G. Hutchinson
11 "	Morgan, Joseph	Boilermaker's Assistant	8/-	Vice J. Lervy
11 "	Went, Arthur W.	Fitter	10/-	Vice L. Gutteridge
11 "	Lusk, James G.	"	10/-	Vice C. Wrightson
11 "	Innis, Robert	Labourer	7/-	Vice J. Scott
11 "	Clack, John P.	"	7/-	Vice F. Peters
18 "	Blackwall, Henry	Car builder	10/-	Vice C. Hemmings
18 "	Maerac, Frank	"	10/-	Vice P. Wood
18 "	Congdon, Fred	Wagon builder	10/-	Vice J. Matthews
18 "	Burrows, John	"	10/-	Vice H. Hough
18 "	Baldock, William	Painter	10/-	Vice E. Ireland
18 "	Fritchard, Frederick	Painter's assistant	7/-	Vice A. Calman
18 "	Greatrex, William	Cleaner	5/6	Vice G. Hill
18 "	Laycock, Joseph	Boilermaker's assistant	7/-	Vice W. Peacock
18 "	Woodward, Henry	Fuelman	7/-	Vice D. McKellar
18 "	Sinclair, Albert	Cleaner	4/-	Vice W. Griffen
18 "	Crawford, John	"	5/-	Vice E. Swan
18 "	Goodwin, Patrick	"	6/-	Vice W. Freeman
18 "	Evans, Thomas	"	5/6	Vice J. McMillan
18 "	Schubert, Edwin	"	5/-	Vice J. Moody
18 "	Robertson, John	"	5/-	Vice A. Greaves
18 "	Rose, Edward	"	5/-	Vice E. Funnell
18 "	Price, Nelson	"	6/-	Vice P. Thomas
18 "	Hamilton, Reginald	"	6/-	Vice G. Clapham
1 Dec.	Newman, John G.	Cadet	2/-	Transferred from Supernumerary Staff.
8 "	Holloway, Benjamin	Firman	9/-	Vice J. Smith
8 "	Carruthers, A. J.	Cleaner	5/6	Vice R. Mays
13 "	Abigail, Frank	Clerk	£170 per annum	From Existing Lines Branch.
22 "	Mitchell, Alexander	Cleaner	5/6 per day	Vice J. Thomas
22 "	Bond, James H.	"	7/-	Vice W. Cambourn
22 "	Passfield, John	"	6/-	Vice A. Sheldrick
22 "	Freel, James	"	6/-	Vice J. Kelly
22 "	Watson, Fergus	"	5/6	Vice G. Smith
1893.				
1 Jan.	Mills, Henry C.	Labourer	7/-	Vice E. Leavey
1 "	Partridge, Thomas	Striker	7/-	Vice J. Harris
1 "	Stanton, Jostah	"	7/-	Vice D. Smith
1 "	Vaughan, A. E.	Boy	2/-	Vice R. McFarlane
1 "	Munsell, Stephen	Boilermaker's assistant	7/-	Vice H. Morales
1 "	Newlands, Ernest	Apprentice	3/6	Vice J. Newlands
1 "	Shenstone, Frank	"	3/-	Vice A. Vernon
1 "	Baker, Arthur	"	2/-	Vice J. Wardrop
1 "	McConville, James	Cleaner	5/6	Vice W. Peterkin
6 "	Bentley, Thomas	Fireman	9/-	Vice J. Dodds
6 "	Dearing, Henry	Cleaner	6/-	Vice M. Bourke
6 "	Harper, John	"	6/-	Vice W. Sinclair
6 "	Hall, Henry	"	6/-	Vice R. Stafford
6 "	Ballhouse, James	"	6/-	Vice C. Vinnicombe
6 "	Coffin, Allen	"	6/-	Vice C. Byrne
6 "	M'Cracken, Thomas	"	4/-	Vice G. H. Byrd
6 "	Laxton, Charles	"	6/-	Vice J. A. Smith
6 "	M'Lean, Alexander	"	5/-	Vice P. Cooper
6 "	Saunders, George	"	6/-	Vice H. Dunk
6 "	Cavanagh, Richard	"	5/6	Vice W. Thick
6 "	Salt, E. M.	"	7/-	Vice J. Tickio
6 "	Munday, John	"	7/-	Vice J. Wilson
6 "	Blatch, Arthur	"	7/-	Vice C. Holliday
6 "	Hellyer, Vincent	"	5/-	Vice A. Faulkner
6 "	Brown, Henry E.	"	5/6	Vice T. Blakeney
6 "	Sproule, Leslie A.	"	5/-	Vice U. Jenkins
6 "	Wills, E. A.	"	5/-	Vice A. Farquhar
18 "	Warren, Charles	Blacksmith	10/8	Reinstated. Vice S. William.
31 "	Turnidge, W. S.	Clerk	6/-	
1 Feb.	Nicholls, Fred. H.	Apprentice Clerk	£40 per annum.	
9 "	M'Kinley, William	Fitter	10/- per day	Vice W. Jeffrie
9 "	Guthrie, Robert	Boy	5/-	Vice W. Chandler
16 "	Noon, Fred. W.	Cleaner	5/6	Vice J. Mears
16 "	Amos, William	"	7/-	Vice F. Barker
16 "	Sutton, William	Labourer	7/-	Vice A. Brown
16 "	Bryant, Thomas	Fuelman	7/-	Vice J. Crane
23 "	Sharp, William	Turner	10/-	Vice J. Powys
23 "	Gallopp, Joseph	Apprentice	2/-	Vice S. Morris
2 Mar.	Gamble, William	Turner	10/6	Vice C. Lord
2 "	Watkins, Edward	Boilermaker	10/-	Vice A. Gray
2 "	Sneddon, Richard	Fireman	9/-	Vice G. Orkio
2 "	Jarvie, William	Cleaner	7/-	Vice R. Lightfoot
9 "	Lewis, Fred	"	6/-	Vice W. Brown
9 "	Smith, James	"	5/-	Vice A. J. Cain
20 "	Roberts, F. W.	Clerk	£150 per annum	From Permanent-way Branch—Vice D. Mitchell.
19 April	Argent, George	Labourer	6/6 per day	Vice James Graves.

APPENDIX XXIII—continued.

Date.	Name.	Position.	Rate	Remarks.
CHIEF TRAFFIC MANAGER'S BRANCH.				
1892.				
26 June	Brunderlin, Mrs. L.	Gatekeeper	2/- per day	Vice Mrs. Johnson.
1 July	Hicks, E.	Probationer	2/6 per week	
1 "	Crowley, Mrs. E.	Gatekeeper	7/- per week	Vice Mrs. Pearce.
1 "	Doughan, P.	"	7/-	Vice Mrs. Martin.
1 "	Carey, Mrs. N.	"	7/6 per week	
1 "	Welsh, Daniel	Junior porter	3/4 per day	From Supernumerary Staff, vice L. Richards.
1 "	Graddon, Walter	Junior clerk	£110 per annum	From Supernumerary Staff.
5 "	Crucknell, Mrs.	Gatekeeper	5/- per week	Vice Mrs. Andrews.
6 "	Crowe, Mrs.	"	5/-	Vice Mrs. Leman.
8 "	Hassell, Mrs.	"	Free house	Vice Mrs. Taylor.
8 "	Ryan, James	Junior porter	3/4 per day	Vice F. George.
11 "	Alexander, Charles	"	3/4	Vice J. Hughes.
11 "	Hutton, John	Special Inquiry Officer	8/-	
11 "	Lewis, F. J.	Junior porter	2/6	Vice W. Downie.
11 "	Catford, Thomas E.	"	2/6	Vice R. Paull.
13 "	Montgomery, John	"	2 0	Vice W. Osborne.
16 "	Wills, L. A.	"	3/4	From Supernumerary Staff, vice W. Higgins.
21 "	Bottle, Henry	Porter	7/-	Vice A. Murray.
22 "	Harris, Mrs. R.	Gatekeeper	7 6 per week	Vice Mrs. Harris.
22 "	Stanton, Samuel	Junior porter	5/- per day	Vice H. C. Rose.
25 "	Richards, M.	Carotaker	6/- per week	
26 "	M'Donald, Donald	Porter	7/- per day	From Supernumerary Staff, vice J. Fox.
1 Aug.	Kavanagh, Mrs.	Carotaker	20/- per week	Vice Mrs. Russell.
1 "	Coyne, Charles	Shunter	7/- per day	From Supernumerary Staff.
1 "	Minogue, J.	Junior porter	5/-	" " "
1 "	St. Ledger, T.	Junior clerk	£100 per annum	" " "
1 "	Smith, Frank	Apprentice clerk	£30	" " " vice J. Tate.
1 "	Carr, Henry	"	£30	" " "
1 "	Stanbrook, George	Porter	6/- per day	" " " vice T. White.
1 "	Whitley, E.	Apprentice clerk	£30 per annum	" " " vice J. Asser.
1 "	Howard, A. E.	Junior porter	2/6 per day	" " " vice J. Martin.
1 "	Ellis, Oliver	"	3/4	" " " vice S. Turner.
1 "	Royer, Charles	Porter	7/-	" " " vice F. Selmon.
1 "	Frew, Samuel	Junior porter	3/4	" " " vice A. Gunneen.
1 "	Jones, J. B.	Porter	7/-	" " " vice W. Cooch.
1 "	Hall, Thomas	"	6/-	" " " vice A. Vernecech.
1 "	Gilliard, William	Junior porter	2/6	" " " vice M. O'Connell.
1 "	Moore, George	Junior clerk	£110 per annum	" " "
1 "	Shoobert, H.	Apprentice clerk	£20	" " "
2 "	Maidment, George	"	£30 per annum	From Supernumerary Staff.
3 "	Amersley, Mrs. E.	Gatekeeper	7/- per week	Vice Mrs. Mee.
4 "	Alleson, Mrs. M.	"	7/-	" Mrs. Peachey.
6 "	Peck, Mrs.	"	Free house	" Mrs. Newman.
10 "	Herney, Charles	Junior porter	2 0 per day	From Supernumerary Staff, vice T. Duffy.
13 "	Kirkland, Mrs.	Gatekeeper	7/- per week	Vice Mrs. Amersley.
15 "	Martin, C.	Porter	6/- per day	From Supernumerary Staff.
17 "	Davies, William	"	7/-	From Tramways, vice N. Maffey.
20 "	Markham, Mrs.	Gatekeeper	7/- per week	Vice Mrs. Penfold.
26 "	Moore, Mrs.	"	Free house	" Mrs. M'Grath.
23 "	Barton, Mrs.	"	"	"
20 "	Cross, Thomas	Junior porter	2 6 per day	From Supernumerary Staff, vice J. M'Gulloch.
20 "	Bohme, Gustave	Wool Delivery Inspector	£200 per annum	Transferred from Supernumerary Staff.
1 Sept.	Mulligan, James	Clerk	£165	From Supernumerary Staff, vice J. Byrnes.
1 "	Hogan, E.	Apprentice clerk	£60	" " "
1 "	Brennan, B.	Probationer	2/8 per week	" " "
2 "	Martin, Mrs. T.	Gatekeeper	7/-	Vice P. Doughan.
4 "	Jones, Mrs. M.	"	Free house	" Mrs. Bray.
6 "	Patterson, Chas. D.	Apprentice clerk	£30 per annum	" A. Lewis.
9 "	Wood, Mrs.	Gatekeeper	7/- per week	" Mrs. Boland.
9 "	James, Mrs. M.	"	7/-	" Mrs. Lewis.
9 "	Dunne, George	Probationer	2/6	"
13 "	Johnson, A. R.	Gatekeeper	15/-	" G. Fuz.
14 "	Smith, S.	"	5/- per day	" J. King.
16 "	Bartlett, Mrs.	"	Free house	" Mrs. Hayes.
16 "	Hodgins, A.	"	15/- per week	" W. Mantle.
26 "	Hamer, A. T.	Porter	6/- per day	From Supernumerary Staff, vice E. Fisher.
26 "	Gamble, Robert	Probationer	2/6 per week	Vice A. Flanders.
26 "	Sognles, Ann	Gatekeeper	7/-	Vice S. Wilson.
27 "	Johnson, Mrs.	"	Free house	" Mrs. Gill.
4 Oct.	Witherspoon, J.	"	7/- per week	Vice E. Bruton.
4 "	Dear, Joseph E.	Junior Porter	2 6 per day	Vice J. Ryan.
7 "	Wilson, W. T.	Steam Crane Driver	12/4	From Locomotive Branch.
7 "	George, James	"	10/-	" " "
7 "	Edwards, J.	"	10/-	" " "
10 "	Kenna, M.	Gatekeeper	7/- per week	" " "
14 "	Fairburn, Mrs.	"	17/6	Vice W. Farburn.
14 "	Weatherhead, F.	"	10/-	Vice L. O'Brien.
14 "	Jenkins, Mary	"	7/-	Vice J. Witherspoon.
15 "	Sullivan, Anne	"	Free house	Vice F. Sullivan.
17 "	Messer, Mrs.	"	7/- per week	Vice W. Castles.
17 "	Cole, Eliza	"	Free house	Vice Mrs. Menzies.
20 "	Mills, Henry	Probationer	2 6 per week	Vice J. Harris.
20 "	O'Donnell, W.	Gatekeeper	Free house	Vice Ann Holloway.
20 "	Gazelay, H.	Porter	7/- per day	Reinstated.
20 "	Roberts, Mrs. E.	Gatekeeper	7/- per week	"
24 "	Morgan, Sarah	"	5/-	Vice M. E. Jones.
26 "	Mortlock, Mary	"	7/-	Vice H. Foley.
1 Nov.	Wilson, Henry	Junior Porter	5/- per day	Vice C. Catford. Position retrenched on Supernumerary Staff.
1 "	Hensburgh, Annie	Gatekeeper	7/- per week	Vice L. Brown.
1 "	Hynes, J.	Junior Clerk	£70 per annum	Vice A. Dugdale.
3 "	Simley, Mary	Gatekeeper	Free house	Vice Mrs. McGovern.
4 "	Kelly, Annie	"	"	Vice Mrs. Spears.
7 "	Baker, Robert	"	15/- per week	Vice A. Spillane.
8 "	Corrigan, Kate	"	7/-	Vice J. Collins.
13 "	O'Donnell, Patrick	Probationer	2 6	Vice A. R. Thrift.
14 "	Weaver, Sydney	"	2 0	"
19 "	Cook, G.	"	2 0	"
21 "	Balloy, W. A.	"	2 0	"
1 Dec.	Henson, H. P.	Apprentice Clerk	£40 per annum	Transferred from Supernumerary Staff.
1 "	Taylor, Elizabeth	Gatekeeper	7/- per week	Vice M. Messkill.
12 "	Meikle, Emily	"	Free house	Vice M. Grantham.
14 "	Handley, Edward	"	6/- per day	Vice Mrs. Shaw.
22 "	Doyle, William	"	25/- per week	Vice J. Mackay.
23 "	Connors, M.	"	5/-	Vice E. Cracknell.
31 "	Morris, Amy	"	7/-	Vice C. Ains.
1893.				
1 Jan.	Roberts, A. E.	Junior Clerk	£120 per annum	Transferred from Supernumerary Staff. — Position retrenched on Supernumerary Staff.
1 "	Carney, J.	"	£20	Transferred from Supernumerary Staff, vice R. Tibbs. Position retrenched on Supernumerary Staff.
4 "	Fisher, James A.	Clerk	£150	Exchanged with S. Bolger, from Traffic Branch.
9 "	Goodwin, Mary Ann	Gatekeeper	7/- per week	Vice Mrs. Butts.
9 "	M'Beath, William	Porter	7/- per day	Reinstated.
10 "	Higgins, Ellen	Gatekeeper	Free house	Vice Mrs. Webb.

APPENDIX XXIII—continued.

Date.	Name.	Position.	Rate.	Remarks.
CHIEF TRAFFIC MANAGER'S BRANCH—continued.				
1893.				
13 Jan.	Doyle, M.	Lad wool checker	1/8 per day	Transferred from Supernumerary Staff.—Position retrenched on Supernumerary Staff.
13 "	Hanrahan, J.	"	1/8 "	"
13 "	M'Pherson, J.	"	1/8 "	"
13 "	Davy, David	"	1/8 "	"
16 "	Madden, Julian	Probationer	2/6 per week	"
19 "	Birrell, Alexander	Porter	7/- per day	Reinstated.
23 "	Mullane, Patrick	Junior Porter	3/4 "	"
21 "	Robley, Joseph	Probationer	2/6 per week	Vice A. Elston.
24 "	Hartley, Fanny	Gatekeeper	Free house	Vice Mrs. Moriarty.
30 "	Roberts, George	Lad, wool checker	1/8 per day	Transferred from Supernumerary Staff. Position trenched on Supernumerary Staff.
1 Feb.	Robinson, Francis	Gatekeeper	7/- per week	Vice Mrs. Smith.
2 "	Green, Mary E.	"	Free house	Vice Mrs. Franklin.
3 "	Kerr, J. R.	Postal Assistant	10/- per week	Vice T. Elwood.
9 "	O'Rourke, Frank	Probationer	2/6 "	Vice H. M'Keen.
6 "	Treay, Ellen	Gatekeeper	7/3 "	Vice Mrs. Miller.
10 "	Williams, W. J.	Clerk	£150 per annum	Exchanged with W. Nowland, of Electrical Branch.
17 "	Taylor, Kate	Gatekeeper	7/6 per week	Vice A. Spillane.
21 "	Connell, Andrew E.	Probationer	2/6 "	Vice R. Clarke
22 "	Hartman, A.	"	2/6 "	"
25 "	Mayne, Mrs.	Gatekeeper	15/- "	Vice T. Naylor.
2 Mar.	Lyncham, Christina	"	Free house	Vice Mrs. Coleman.
3 "	Edwards, Margaret	"	"	Vice Mrs. Meikle.
20 "	Fleming, W.	Probationer	2/3 per week	Vice G. W. Cook.
26 "	Gibbons, Mrs.	Gatekeeper	Free house	Vice Mrs. Barton.
23 "	Bell, Susan Ann	"	7/- per week	Vice Mrs. Lyncham.
26 "	Yandall, Ellen	"	7/- "	Vice Mrs. E. Ashford.
2 April	Fairbanks, Emily	"	Free house	Vice Martha Burrell
8 "	Ellis, Kathleen	"	"	Vice Fanny Hartley
13 "	Saddler, Fanny	"	"	Vice Maria Cowan.
13 "	Elliott, Mrs.	"	"	Vice T. Deveny.
21 "	New, W.	Porter	7/6 per day	Vice Wm Carroll.
26 "	Moore, Rachel	Gatekeeper	7/- per week	Vice Elizabeth Porter.
26 "	Clarke, Priscilla	"	7/- "	Reinstated.
27 "	Fox, J. P.	Probationer	2/6 "	"
29 "	Knight, Alice	Gatekeeper	Free house	Vice Mrs. Taylor.
4 May	Fallon, Margaret	"	"	Vice M. A. Wells.
6 "	Smith, Frederick A.	Chief Delivery Clerk	£200 per annum	From Traffic Audit Branch, vice W. H. Tomlinson
16 "	Dowling, A.	Postal Assistant	10/- per week	Vice N. Nicholas.
16 "	Brown, Alice	Gatekeeper	10 - "	"
19 "	Deveny, T.	"	30/- "	Vice Mrs. Moseley and P. Sullivan.
20 "	Rea, Sarah	"	7/- "	Vice Bertha Baylis.
22 "	Walsh, Jane	"	Free house	Vice Honora Carey.
23 "	M'Cluskie, Mrs.	"	"	Vice Mrs. Lawton.
27 "	Fletcher, Elizabeth	"	7/6 per week	Vice Maurice Riley.
30 "	Bryant, Susannah	"	Free house	Vice Budget Connell.
31 "	Roas, Ann	"	"	Vice Thomasina Moore.
31 "	Reading, Jane	"	7/- per week	Vice Joseph Bowen.
1 June	Cummings, Annie	"	10/- "	Vice May Williams.
1 "	Duncan, Jane	"	Free house	Vice Nellie Somers.
2 "	Castles, Mrs.	"	7/- per week	Vice Mrs. Pugh.
2 "	Bassett, Mrs.	"	7/- "	Vice Ellen Wilson.
10 "	Carroll, Catherine	"	Free house	Vice Ellen Higgins.
12 "	Morris, Mrs.	"	"	Vice Kate M'Callum.
14 "	Farnsworth, Matilda	Caretaker	"	Station closed.
14 "	M'Goldrick, Kate	Gatekeeper	"	Vice Johanna Pierce.
14 "	Ryan, Mary	"	7/- per week	Vice Ellen Drinan.
16 "	Bruce, Thomas	Porter	6/- per day	Vice H. Newell.
20 "	Wilson, Maud	Gatekeeper	Free house	Vice Maud Bartlett.
21 "	Shepherd, Mrs.	Caretaker	5/- per week	Station closed.
25 "	Nield, John H.	Station-master	£200 per annum	From Secretary's Branch.
26 "	Jennings, Mary	Gatekeeper	7/- per week	Vice Ann Shepherd.
30 "	Costello, Ada	"	Free house	Vice Mary Brown.
CONTROLLER OF STORES BRANCH.				
1892.				
1 Oct.	Sproule, Wallace C.	Apprentice Clerk	£80 per annum	Vice J. B. Agnew.
17 Nov.	Irvine, Robert F.	"	£80 "	Vice W. Sproule.
1 Dec.	Downing, Daniel J.	"	£30 "	"
1893.				
8 Mar.	Gibbons, Edwin	"	£40 "	Vice Walter Gibbons.
SIGNAL AND INTERLOCKING BRANCH.				
1892.				
23 Sept.	Marshall, Matthew	Tinsmith	9/6 per day	From Traffic Branch.
Oct.	Heaton, John	Blacksmith	10/6 "	Vice T. Parker.
PROPERTY AND ESTATE AGENT.				
1892.				
18 Nov.	Larmour, Alfred W.	Apprentice Clerk	£30 per annum	From Traffic Branch.
1893.				
1 Jan.	Huffman, Arthur	Clerk	£145 "	Transferred from Supernumerary Staff. Positions retrenched on Supernumerary Staff.
1 Mar.	Murray, John	Surveyor	£250 "	
ELECTRICAL ENGINEER'S BRANCH.				
1892.				
2 Sept.	Colless, E. H.	Probationer	£6/10/- per ann.	From Traffic Branch, vice H. Shoobert.
10 Oct.	Elston, A. R.	Apprentice Clerk	£30 "	From Traffic Branch.
1893.				
1 Mar.	Nowland, W.	Operator	£136 "	Exchanged with W. J. Williams, of Traffic Branch.
30 May.	Hickey, Cornelius	Messenger	2/6 per day	From Traffic Branch, vice F. C. Pawley.

APPENDIX XXIV.

NEW SOUTH WALES GOVERNMENT RAILWAYS.

RETURN showing the Removals of Railway Employés from 1st July, 1892, to 30th June, 1893.

Date	Name.	Position.	Rate.	Remarks.
1893. SECRETARY'S BRANCH.				
28 Feb	Burbidge, Alfred J.	Clerk	£170 per annum	Retrenchment.
25 June	Neild, John R.	"	£350 "	To Traffic Branch; position retrenched.
1892. CHIEF ACCOUNTANT'S BRANCH.				
21 Nov.	Bell, P. J.	Junior clerk	£120 per annum	Left the Service.
1893.				
21 Jan.	Bartholomew, William	Apprentice clerk	£30 "	Resigned.
10 June	Waller, Francis A.	"	£60 "	"
1893. TRAFFIC AUDITOR'S BRANCH.				
1 Jan.	Fisher, Jabez A.	Clerk	£150 per annum	Exchanged with S. Bolger, from Traffic Branch.
6 May	Smith, Fredk. A.	Inspector	£295 "	To Traffic Branch; position retrenched.
1 "	McClelland, Thos. H.	"	£305 "	Retrenchment.
14 June	Rowland, Mrs. E.	Office-cleaner	3/- per day; £25 per ann. house allowance.	"
1892. ENGINEER-IN-CHIEF FOR EXISTING LINES BRANCH.				
3 July	Morrison, Charles	Carpenter	10/- per day	Resigned.
4 "	Spears, John	Ganger	9/- "	Discharged.
4 "	Jeffrey, Robert	Labourer	7/6 "	Resigned.
6 "	Williamson, Stephen	Fettler	7/6 "	Discharged.
9 "	M'Grath, Darby	"	7/6 "	Resigned.
9 "	Wall, John	"	7/6 "	"
15 "	Steedman, James	"	7/6 "	Retired.
15 "	White, George	"	7/6 "	"
21 "	Mez, Joseph	"	7/6 "	Deceased.
28 "	Hazlewood, George	Labourer	7/6 "	Resigned.
28 "	White, Robert	Fettler	7/6 "	"
9 Aug.	Runyan, Alfred	Labourer	7/6 "	"
11 "	O'Shea, John	Fettler	7/6 "	Retired.
18 "	Mallard, John	Boy	2/- "	Discharged.
21 "	Brav, John	Labourer	7/- "	Deceased.
23 "	Arthur, Thomas	Ganger	9/- "	Retrenchment.
25 "	Boyle, James	Fettler	7/6 "	Discharged.
26 "	Mehaffey, John	Labourer	7/6 "	Resigned.
1 Sept.	Boland, John	Fettler	7/6 "	"
3 "	Byrnes, Henry	"	7/6 "	"
3 "	Tiekrod, John	Labourer	7/6 "	Discharged.
4 "	M'Neely, Anthony	Fettler	7/6 "	"
6 "	Passfield, John	"	7/6 "	Deceased.
8 "	Rowe, Henry	"	7/6 "	Discharged.
8 "	Barber, Henry	Labourer	7/6 "	"
8 "	Barber, James	"	7/6 "	"
8 "	Milton, John	"	7/6 "	Retired.
8 "	Sionne, John	Fettler	7/6 "	Resigned.
8 "	James, Edward	"	7/6 "	Discharged.
15 "	Moore, William	Labourer	7/6 "	Retrenchment.
15 "	Watkiss, James	"	7/6 "	"
20 "	Geuge, Edward	Fettler	7/6 "	Retired.
20 "	Gray, Henry	"	7/6 "	"
21 "	Foreman, Thomas	"	9/- "	"
22 "	M'Glavin, Patrick	"	7/6 "	"
22 "	Rivers, Arthur	"	7/6 "	"
23 "	Glover, George	Ganger	9/- "	"
24 "	Back, John	Inspector	15/- "	Discharged.
27 "	Maher, Patrick	Fettler	7/6 "	Retired.
27 "	Day, John	Ganger	9/- "	Discharged.
27 "	Hicks, James	Fettler	7/6 "	"
29 "	Duggan, Michael	Fettler	7/6 "	Resigned.
29 "	Donnelly, John	"	7/6 "	"
1 Oct.	Wilde, Richard	Labourer	7/6 "	Retired.
3 "	Matthews, James	Clerk	£150 per annum	Discharged.
6 "	Richards, Henry	Carpenter	9/- per day	Retired.
6 "	Claridge, John	Fettler	7/6 "	"
11 "	Jacobs, James	Labourer	7/- "	Discharged.
12 "	Smith, Walter	"	7/6 "	Retrenchment.
15 "	Fleming, William	"	7/6 "	"
15 "	Payne, Joseph	"	7/- "	"
20 "	Lewis, William	Fettler	7/6 "	Discharged.
25 "	Nugent, William	Labourer	7/6 "	"
29 "	Duffy, James	"	7/6 "	"
31 "	Minus, George	Foreman plumber	£260 per annum	Retrenchment.
11 Nov.	Taylor, Thomas	Carpenter	10/- per day	"
11 "	Devereaux, James	"	9/- "	"
11 "	Wood, Frederick	"	9/- "	"
11 "	Keeyers, Frederick	Bricklayer	9/- "	"
12 "	Lewis, William	Boy	5/- "	"
12 "	Stone, Henry	Plumber	8/6 "	"
12 "	Martin, John R.	Improver	7/- "	"
12 "	Eiver, William	Machinist	8/- "	"
12 "	Hensworth, James	Labourer	7/6 "	"
12 "	Smith, James	"	7/6 "	"
12 "	Dowse, Thomas	Carpenter	8/- "	"
12 "	Davies, Peter	"	10/- "	"
14 "	Cocking, William	Fettler	7/6 "	Retired.
15 "	Fleming, Alfred	Painter	9/8 "	Retrenchment.
15 "	Bruce, Edward	"	9/- "	"
15 "	Burt, William	Bricklayer	10/- "	"
16 "	Burt, Frederick	Labourer	7/- "	"
16 "	Lindsay, Benjamin	Plumber	9/6 "	"
18 "	M'Kay, Alexander	Fettler	7/6 "	Resigned.
19 "	Sweeney, Michael	"	7/6 "	"
22 "	Caunt, Richard	"	7/6 "	"
23 "	Butts, George	"	7/6 "	"
1 Dec.	Carter, Joseph	Labourer	7/6 "	Retrenchment.
1 "	Moster, Overed	Fettler	7/6 "	Resigned.
5 "	Pye, William	Labourer	7/6 "	"
9 "	Blackett, John	"	7/6 "	"
10 "	Shaw James	"	6/6 "	Discharged.
13 "	Abigail, Frank	Clerk	£170 per annum	To Locomotive Branch.
15 "	Stanbridge, Joseph	Labourer	7/6 per day	Discharged.
17 "	Wood John	Carpenter	9/- "	"
22 "	Reading, James	Fettler	7/6 "	Resigned.
23 "	Clark William	"	7/6 "	"
23 "	Elbourne, Arthur	Labourer	7/6 "	Deceased.
24 "	Muroney, Richard	Inspector	12/- "	Retrenchment.
29 "	Elston, William	Labourer	7/6 "	Resigned.
31 "	Higgison, John	Officer in Charge of Ballast Trains.	£156 per annum	Retrenchment.
31 "	Wells, F. B. S.	Draftsman	£125 "	"

APPENDIX XXIV—continued.

Date.	Name.	Position.	Rate.	Remarks.
1893. ENGINEER-IN-CHIEF FOR EXISTING LINES BRANCH—continued.				
5 Jan	Miller, John	Ganger	9/- per day	Resigned.
5	Simpson, William	"	9/-	Deceased.
7	Yeomans, Alfred	Fettler	7/6	"
12	Furhanks, Ernest	Labourer	6/6	Discharged.
12	Mulheron, Owen	"	6/6	"
16	Bickerton, William	"	7/6	Resigned.
16	Trounce, Edward	"	7/6	Retrenchment.
16	Costelloe, Phillip	"	7/6	"
24	Kemp, Daniel	Fettler	9/-	Retired.
25	O'Reilly, George	Labourer	8/-	Discharged.
28	Ferguson, Sydney	Carpenter	11/-	Retrenchment.
28	Burnett, John	Labourer	8/-	"
28	Boddington, Frank	Blocklayer	18/-	"
28	Packman, John	Carpenter	10/-	"
28	Clay, Henry	Blocklayer	13/-	"
28	Morton, James	Rough Carpenter	7/6	"
28	Pawcett, William	Carpenter	9/-	"
31	Wood, Thomas	Draftsman	£140 per annum	"
31	Nixon, William	"	£250	"
31	Breakall, F. H.	"	£225	"
31	Tickle, Samuel	"	£225	"
31	Mothtt, W. T.	"	£210	"
31	Valentine, Henry	"	£125	"
0 Feb.	Jamieson, William	Fettler	7/6 per day	Discharged.
9	Muldoon, Thomas	"	7/6	"
10	Ludden, William	Sub-Inspector	£225 per annum	Deceased.
22	West, John	Fettler	7/6 per day	Discharged.
28	Hedgoc, John	Clerk	£150 per annum	Retrenchment.
28	Blinco, John	Sub-Inspector	£230	"
28	Butler, James	Junior Clerk	£75	"
28	Higgins, R. M.	"	£75	"
28	Thackeray, Charles	"	£75	"
28	Warn, E. J.	"	£80	"
1 Mar.	Denshure, Percy	Office-boy	4/- per day	"
4	Lodge, William	Labourer	7/6	Discharged.
5	Davies, Peter	Carpenter	10/-	Retrenchment.
10	Souter, William	Labourer	7/6	Discharged.
10	Schons, Nicholas	"	7/6	"
10	Bell, William	Fettler	7/6	"
14	Skelly, Henry	"	7/6	Deceased.
15	England, Charles	Carpenter	13/-	Retrenchment.
16	Miller, Carl	Labourer	6/6	"
16	Hoston, James	"	7/6	"
16	Thomas, Jacob	"	7/6	"
16	Atkins, Thomas	"	7/-	"
16	Walsh, James	Fettler	7/6	"
16	Bailey, Thomas	Labourer	7/6	"
16	Perry, Simon	"	7/6	"
17	Christenson, John	Fettler	7/6	Deceased.
18	McMahon, Thomas	Labourer	7/6	Discharged.
18	Chettle, W. A.	Surveyor	£200 per annum	Retrenchment.
20	Ertih, Samuel	Fettler	7/6 per day	Resigned.
20	Catto, Richard	"	7/6	"
29	Roberts, F. W.	Clerk	£150 per annum	To Locomotive Branch, position retrenched
31	Hawkes, James	Inspector	£300	Retrenchment.
31	Light, E. E.	Assistant Engineer	£300	"
31	Cockburn, W. J.	Clerk	£125	"
31	Lee, Henry	Sub-Inspector	£200	"
1 April	Sheridan, J. P.	Clerk	£100	Retrenchment.
1	Nicholl, Alan	"	£200	"
5	Ashford, Isaac	Fettler	7/6 per day	Discharged.
6	Moore, James	"	7/6	Retired.
6	Ganson, David	Clerk	£166 per annum	Retrenchment.
6	Droney, James	Fettler	7/6 per day	Deceased.
8	Brown, George	Labourer	7/6	Resigned.
10	Azzoni, Walter M.	Clerk	£180 per annum	To Tramways.
12	Maloney, Patrick	Fettler	7/- per day	Resigned.
17	Nelson, Onton	"	7/6	"
17	McGrath, Bernard	"	7/6	Retired.
20	Prumpton, Donald	"	7/6	Discharged.
30	Triglore, Ainos	Clerk	£150 per annum	Retrenchment.
30	Watson, H. J.	"	£185	"
30	Hammerton, C.	"	£160	"
30	Simons, Charles	Draftsman	£300	"
30	Moor, F. C.	"	£110	"
30	Doyle, J. A.	Custodian of Plans	£125	"
30	French, A. S.	Draftsman	£150	"
30	Fitzmaurice, W. R.	Sub-Inspector	£250	"
30	De Putson, George	Clerk	7/6 per day	"
17 May	McKenzie, John	Fettler	7/6	Resigned.
20	Jamieson, James	"	7/6	Discharged.
22	Bayls, John	"	7/6	To Tramways.
31	Saunders, Wm.	Labourer	7/6	Retired.
31	Joshing, Arthur	Architectural Draftsman	£375 per annum	Retrenchment.
9 June	Brien, Henry	Fettler	7/6 per day	Deceased.
14	Wauhop, Joshua	Gate-keeper	7/-	To Traffic Audit Branch; position retrenched.
15	Moore, John	Fettler	7/6	Deceased.
15	Few, John	Labourer	7/6	Retrenchment.
15	Kissick, John	"	7/6	"
15	Koster, George	"	7/6	"
15	McKander, James	"	7/6	"
15	Richards, John	"	7/6	"
15	Miller, John	"	7/6	"
15	Smith, John	"	7/6	"
18	Fiehr, Richard	Ganger	9/-	Deceased.
22	Shaw, James	Flagman	7/-	Retired.
22	Gunneen, Daniel	"	6/6	"
26	Ewels, Henry	Fettler	7/6	"
28	Wilkins, William	"	7/6	"
28	Brown, William	Labourer	7/6	"
29	Cockell, James	Carpenter	10/-	Retrenchment.
30	Hazel, Dm.	Labourer	7/6	"
30	Cooling, Chas	"	7/6	"
30	Begine, Joseph	"	7/6	"
30	Corkill, John	"	7/6	"
30	Thompson, William	"	7/6	"
30	Hanulton, George	"	7/6	"
30	Ireland, David	"	7/6	"
30	Osmond, Frank	"	7/6	"
30	Leahy, Patrick	"	7/6	Retired.
30	Penny, Thomas	Flagman	9/-	"
30	Smith, William	Labourer	7/6	"
1892. CHIEF MECHANICAL ENGINEER'S BRANCH.				
6 July	Svdenham, Henry	Cleaner	7/- per day	Resigned.
8	Morgan, James	Labourer	7/-	"
9	Barr, Joseph	Cleaner	6/-	"
11	Chapman, D.	Fitter	10/-	"
11	Donnelly, Bernard	Fueman	10/-	Discharged.
21	Gould, Mrs.	Carotaker	8/- per week	Resigned.

APPENDIX XXIV—continued.

Date.	Name.	Position.	Rate.	Remarks.
1892.				
CHIEF MECHANICAL ENGINEER'S BRANCH—continued.				
23 July	Lee, George	Cleaner	5/- per day	Retrenchment.
1 "	Dempster, Roderick	Clerk	£150 per ann.	Resigned.
6 Aug.	Baker, Jesse	Gasfitter	9/- per day	"
7 "	Lutton, George	Blacksmith	10/2	Deceased.
7 "	Powys, John	Tramway	10/-	"
9 "	McQuade, Henry	Car-builder	8/-	Resigned.
9 "	Moore, Alfred	Fireman	10/-	Discharged.
11 "	Donald, James	"	10/-	Resigned.
13 "	Holmes, Urnah	Painter's assistant	6/8	Discharged.
21 "	Aubrey, Frederick	Fireman	9/-	Deceased.
24 "	Wood, Peter	Wagon-builder	10/-	Resigned.
25 "	Lord, Charles	Boiler-maker	10/-	Discharged.
30 "	Cox, James	Tinsmith	10/6	"
31 "	Stevenson, Arthur	Cleaner	7/-	Resigned.
9 Sept.	Hill, George	Fuelman	7/-	Discharged.
12 "	Clapham, George	Driver	14/-	Resigned.
24 "	South, Henry	Cleaner	7/-	To Tramways.
24 "	Warton, Charles E.	"	6/-	"
24 "	Kendrigan, Ernest	"	6/-	"
24 "	Crawford, Alfred	"	7/-	"
24 "	Lechane, Patrick	"	7/-	"
24 "	Thomas, Phillip	"	7/-	"
24 "	Dawson, Alexander	"	7/-	"
24 "	Connelly, Thomas	Labourer	7/-	Discharged.
25 "	Atkinson, Alfred	Cleaner	7/-	To Tramways.
25 "	Pollock, David	C. and W. examiner	14/-	Deceased.
26 "	Quinn, Henry	Cleaner	6/-	To Tramways.
26 "	Thompson, John	"	6/-	"
29 "	Morris, James	"	6/-	"
30 "	Ritchie, William	Driver	15/-	Retired.
1 Oct.	Mays, Robert	Cleaner	7/-	Discharged.
6 "	Acres, Randall	"	7/-	To Tramways.
6 "	Alexander, Vincent	Dresser	8/-	Discharged.
7 "	Morrison, E.	Apprentice	5/-	"
7 "	Wilson, William	Steam crane driver	12/4	To Traffic Branch.
7 "	Edwards, John	"	10/-	"
7 "	George, James	"	10/-	"
8 "	Galdwell, George D.	Apprentice	5/-	Discharged.
13 "	Johnston, John	"	5/-	"
13 "	Griffin, William	Fireman	10/-	Resigned.
21 "	Smith, James	Driver	14/-	Deceased.
22 "	Whytes, James	Cleaner	6/-	Retrenchment.
22 "	Hill, George H.	"	5/6	"
27 "	Creaves, Arthur	"	5/6	"
27 "	Freeman, John	"	5/6	"
27 "	Moody, John	"	5/-	"
27 "	McMillan, John	"	5, 6	"
27 "	Funnell, William	"	6/-	"
27 "	Swan, E. A.	"	6/-	"
29 "	Quinn, James	"	6/-	"
29 "	Paulkney, Alfred	"	6/-	"
29 "	Blakeney, Thomas	"	5/6	"
29 "	Jenkins, Minn.	"	5, 6	"
31 "	Hariand, Thomas	Fireman	10/-	To Tramways.
5 Nov.	Catt, Samuel	Apprentice	5/-	Discharged.
7 "	Leaney, Edward	Boiler-maker's assistant	7/-	Retrenchment.
8 "	Taylor, Alfred	Fitter	10/-	"
8 "	White, David	Apprentice	5/-	Discharged.
10 "	Watson, William	"	5/-	"
17 "	Wilson, James	Cleaner	6/-	Retrenchment.
17 "	Tickle, Joseph	"	6/-	"
17 "	Campbell, William	"	5/-	"
17 "	Farquhar, Alfred	"	6/-	"
17 "	Vinnicombe, Charles	"	7/-	"
21 "	Dunk, Henry	Head cleaner	8/-	Deceased.
24 "	Sykes, George	Tinsmith	9/-	Retrenchment.
29 "	Smith, James H.	Driver	13/-	Deceased.
30 "	Neale, D. H.	Mechanical Engineer	£550 per annum	Resigned.
30 "	Caubourne, W.	Cleaner	5/- per day	Retrenchment.
1 Dec.	Cooper, Percy	"	7/-	"
1 "	Kelly, James H.	"	5/6	"
1 "	Smith, George D.	"	5/6	"
1 "	Masters, Henry	Driver	13/-	Resigned.
1 "	Lovesey, Thomas	Driller	8/-	"
5 "	Meats, Henry	Fireman	10/-	Deceased.
8 "	Toms, John	Labourer	7/-	Resigned.
9 "	Jeffries, William	Washer out	10/-	"
14 "	Warren, Charles	Blacksmith	10/8	Retrenchment.
15 "	Cathro, W.	Cleaner	7/-	"
16 "	Crane, James	Fuelman	7/6	Retired.
20 "	Brown, A.	Labourer	7/6	Resigned.
20 "	Crawford, Robert	Cleaner	6/-	Retrenchment.
20 "	Watson, John	"	6/-	"
29 "	Barker, Frank	"	3/3	"
29 "	Orknie, George	Fireman	10/-	Discharged.
29 "	Ryan, Edward	Cleaner	7/-	Retrenchment.
29 "	King, Charles	"	7/-	"
29 "	Curran, James	Fuelman	7/-	"
29 "	Brown, W.	Fireman	10/-	Discharged.
31 "	Nichols, John	Travelling Inspector	£280 per annum	Retired.
1893.				
1 Jan.	Willoughby, J. R.	Driver	14/- per day	Deceased.
1 "	Holden, E. A.	Draftsman	£180 per annum	To Secretary's Branch.
5 "	Shaw, Amnon	Labourer	7/- per day	Retired.
7 "	Morris, Sydney	Apprentice	3/-	Resigned.
9 "	Lightfoot, Richard	Fuelman	7/6	Retrenchment.
13 "	Dodds, James	Apprentice	5/-	"
21 "	Rose, Edward	Cleaner	5/-	"
29 "	Snipe, James	Driver	11/-	Deceased.
31 "	Robinson, Henry	Inspector	£3 per week	Retrenchment.
31 "	Thomas, John	Striker	7/6 per day	Resigned.
31 "	Buchanan, James	Fitter	13/-	"
1 Feb.	Houghton, R. H.	Labourer	7/-	"
1 "	Hullwood, W. S.	Clerk	£180 per annum	To Secretary's Branch.
2 "	Wallace, George S.	Cleaner	5/8 per day	Retrenchment.
2 "	Slade, Daniel	Bricklayer	11/-	Resigned.
2 "	Halligan, Edward	Boiler-maker's Assistant	7/-	Deceased.
7 "	Graham, David	"	7/-	Discharged.
9 "	Kearney, David	Cleaner	7/-	Resigned.
15 "	Watson, Fergus	"	5/6	Retrenchment.
15 "	Rose, William	Driver	12/-	Resigned.
15 "	Shearer, Henry	Fuelman	7/-	Retrenchment.
16 "	Preel, James	Cleaner	5/6	"
16 "	Kilkelly, John	"	7/-	"
17 "	McQueen, James	Driver	14/-	Deceased.
28 "	Milroy, Richard	Apprentice	5/-	Resigned.
3 Mar.	Mitchell, D. R.	Clerk	£145 per annum	Discharged.
8 "	Barker, Henry	Boiler-maker's Assistant	7/- per day	Retrenchment.
6 "	King, Mrs	Caretaker	8/- per week	"
10 "	Parry, George	Assistant Storeman	7/6 per day	Deceased.

APPENDIX XXIV—continued.

Date.	Name.	Position.	Rate.	Remarks
1893.				
CHIEF MECHANICAL ENGINEER'S BRANCH—continued.				
10 Mar.	Perkes, Thomas	Fireman	10/- per day	To Tramways.
14 "	Landrihan, Patrick	Fuelman	7/-	Retrenchment.
23 "	King, William	Fireman	9/-	Resigned.
23 "	Crawford, John	Cleaner	5/-	Retrenchment.
24 "	Campbell, John	"	5/-	"
24 "	Hudson, Percy	Fuelman	6/-	Resigned.
2 April	Nield, Thos	Driver	15/-	Deceased; position retrenched.
6 "	Smith, James	Cleaner	6/-	Retrenchment.
6 "	Sproule, Leshe	"	5/-	"
6 "	Brown, H. E.	"	5/6	"
6 "	Egan, Patk.	"	6/-	"
6 "	Tiernan, Richd.	"	7/-	"
8 "	Hill, John	Pumper	8/8	"
12 "	Smith, Thos.	Fitter	10/-	Resigned.
12 "	Sim, Alfred	Wagon builder	10/-	Deceased; position retrenched.
14 "	Goodwin, Pat.	Cleaner	6/-	Retrenchment.
14 "	Evans, Thos.	"	6 -	"
17 "	Fay, Alfred	Labourer	7/8	Deceased; position retrenched.
17 "	McCredie, John	Cleaner	5/6	Retrenchment.
19 "	Greaves, Jas.	Labourer	7/6	Left the Service.
20 "	McCulla, Wm.	Turner	8/-	Resigned.
20 "	Hellver, Vincent	Cleaner	5/6	Retrenchment.
20 "	Schubert, Ed.	"	5/6	"
20 "	Cornack, Peter	"	5/6	"
20 "	Lidden, Hy.	"	5/-	"
20 "	Harrison, Sydney	"	5/-	"
20 "	Eadie, Wm.	Wagon-builder	10/-	Resigned; position retrenched.
22 "	McLean, Alex.	Cleaner	5/-	Retrenchment.
22 "	Gale, Thos.	"	5/8	"
26 "	Donnelly, Ed.	Boilermaker's Assistant.	7/6	Resigned; position retrenched.
29 "	Flint, George	Cleaner	6/-	Retrenchment.
30 "	Cahill, J. B.	Draftsman	£232 per annum	"
1 May.	McMillan, Duncan	Fitter	10/- per day	Discharged; position retrenched.
1 "	Coleman, Geo.	Cleaner	7/-	To Tramways;
2 "	Campy, H. E.	"	5 -	Retrenchment.
3 "	Rinken, Hy.	"	5/6	"
4 "	Robertson, John	"	5/6	"
4 "	McConville, John	"	6/-	"
4 "	Ewels, Hy.	"	6/-	"
4 "	Penfold, Walter	"	6/-	"
4 "	Hallinger, Jno.	"	5/6	"
4 "	Kennedy, Jas.	"	3/6	"
4 "	Lewis, Fred.	"	5/6	"
4 "	Harvey, Rd.	"	5/-	"
4 "	Wills, E. A.	"	5 -	"
4 "	Quinn, Thos.	"	9/-	"
4 "	Kelly, Jno	"	5/6	"
4 "	Perritt, Wm.	"	5/-	"
4 "	Gilbert, Jos.	"	6/-	"
4 "	Moses, G. J. V.	"	6/-	"
4 "	Taylor, Saml.	Labourer	7/8	Deceased; position retrenched
4 "	George, Jas.	Stationary engine-driver	7/6	"
4 "	Horner, Arthur	Cleaner	6/-	Retrenchment.
5 "	Ballhouse, Jos.	"	6/-	"
6 "	Whatley, Jas.	"	7/-	"
6 "	Brown, Thos.	"	6/-	"
6 "	Plarford, Geo.	"	5/-	"
6 "	M'Elhinney, Thos.	"	5/6	"
6 "	Nixon, Ralph	"	5/6	"
6 "	Smith, Wm.	"	6/-	"
6 "	Green, Robt.	"	5/-	"
9 "	Luffan, Mehl.	Carpenter	9/-	"
9 "	Hall, Hy.	Cleaner	6/-	"
10 "	Harris, Thos.	"	6/-	"
10 "	Worroll, Geo.	"	7 -	"
11 "	Rees, Syd.	"	4/-	"
11 "	M'Cracken, Thos.	"	5/-	"
11 "	Carruthers, J. A.	"	5/6	"
11 "	Worroll, F.	"	5/6	"
11 "	Souter, Jno. Chas.	Gasfitter	9/-	"
11 "	Smith, Frank	"	8/-	"
11 "	M'Farlane Allan	"	5/-	"
11 "	McFadyean, Hector	Cleaner	7/-	Discharged; position retrenched
13 "	Multer, Fred.	"	7/-	To Tramways
13 "	Dowling, Jno.	"	6/-	"
13 "	Coffin, Allen	"	6 -	Retrenchment.
13 "	Bretelle, E.	Storeman	7/8	"
15 "	Cavanagh, Rd.	Cleaner	6/-	"
16 "	Corcoran, Peter	Fuelman	7/-	Resigned; position retrenched
16 "	Harper, Jno.	"	6/-	Retrenchment.
17 "	Croal, David	Timber Inspector	10/6	Deceased; position retrenched.
17 "	Darlington, Wm.	Cleaner	6 -	Retrenchment.
17 "	Hunter, Jas.	"	5/6	"
18 "	Hamilton, Regd.	"	6/-	"
18 "	Price, Nelson	"	7 -	"
18 "	Ogilvie, David	Fireman	10/-	Resigned; position retrenched.
19 "	McFayden, Wm.	Cleaner	5/6	Retrenchment.
19 "	Bentley, Wm.	Fitter	10/-	Left the Service.
19 "	Nelson, Wm.	Apprentice	9/-	Resigned; position retrenched.
23 "	Saunders, Geo.	Cleaner	6/-	Retrenchment.
24 "	Mitchell, A.	"	6/-	"
24 "	Parker, Wm.	Gasfitter	9/-	"
25 "	Evans, Jno.	Foreman	14/-	"
26 "	Fornley, Thos.	Boilermaker	10/6	Deceased.
29 "	Jones, Chas.	Cleaner	6/-	Retrenchment
29 "	Laxton, Chas.	"	6/-	"
30 "	Noon, Fred. W.	"	5/6	"
31 "	Ford, A. G. H.	Clerk	£130 per annum	"
31 "	Buchanan, A. W.	Junior Clerk	£70	"
31 "	Lee, Fred.	Cleaner	7/- per day	"
1 June	Huthnance, Sam	"	6/-	"
2 "	Jones, Evan J.	"	7 -	"
3 "	Muir, Wm.	"	7/-	"
9 "	Bourke, Mehl.	Fireman	7/-	"
9 "	Juleff, J. E.	"	7/-	"
10 "	Brown, Wm.	Cleaner	7/-	"
10 "	Gallagher, Jas.	"	7/-	"
10 "	Webb, Albert	"	6/-	"
12 "	Buchanan, Walter	"	7 -	"
15 "	Briggs, Jas	Labourer	7/6	"
15 "	Greatrex, Wm	Cleaner	7/-	"
15 "	Martin, Chas.	Apprentice	3/6	Discharged.
17 "	Arnold, Chas.	Painter	8/-	Left the Service.
17 "	Kitson, Herbert	Driver	14/-	No longer required.
21 "	Hollis, Robt.	"	12/-	Resigned.
22 "	Melnes, Malcolm	Cleaner	7/-	No longer required.
22 "	Fisher, Alex.	Driver	15/-	"
23 "	Matthews, Hy.	"	14/-	"
23 "	Adams, Wm	Fireman	10/-	Resigned; position retrenched.
30 "	Turnidge, W. S.	Junior Clerk	£94 per annum	Retrenchment.

APPENDIX XXIV—continued.

Date.	Name.	Position.	Rate.	Remarks.
1892. CHIEF TRAFFIC MANAGER'S BRANCH.				
1 July	Burdett, D.	Clerk	£150 per ann.	Discharged.
1 "	Rowan, W.	Night officer	£130 "	"
1 "	Harris, J. R.	Clerk	£180 "	"
1 "	Nicholl, Thomas	Station-master	£180 "	Deceased.
1 "	Farlow, W.	Probationer	2/6 per week	Resigned.
1 "	Johnson, Elizabeth	Gatekeeper	2/6 per day	Discharged.
1 "	Pearce, Maggie	"	7/- per week	Resigned.
1 "	Kiss, J.	Operator	£95 per annum	Discharged.
2 "	Plowman, J.	Assistant guard	8/- per day	To Tramways.
2 "	Guthrie, A.	Gatekeeper	45/- per week	Retired.
4 "	Harriot, B. C.	Junior porter	5/- per day	Discharged.
4 "	Andrews, Mrs. M.	Gatekeeper	5/- per week	Resigned.
4 "	Bren, Francis	Porter	8/- per day	Discharged.
5 "	Limon, Mrs.	Gatekeeper	10/- per week	Resigned.
6 "	Ford, Frederick	Porter	7/- per day	Discharged.
8 "	Kenny, J.	"	"	To Tramways.
8 "	Hughes, John	Junior porter	2/6 "	Resigned.
8 "	Taylor, Mrs.	Gatekeeper	Free house	"
9 "	Duffy, Thomas	Porter	7/- per day	Discharged.
10 "	Cowley, John	"	6/6 "	To Tramways.
12 "	Moylan, P.	"	6/6 "	Discharged.
13 "	Osborne, W.	Junior porter	5/- "	Resigned.
13 "	Wilson, Frederick	Porter	6/6 "	Discharged.
14 "	Weekes, J.	"	7/- "	"
13 "	M'Culloch, J.	"	7/- "	Resigned.
13 "	Burrows, Robert	Night officer	£140 per ann.	"
16 "	Murray, Alexander	"	7/6 per day	Deceased.
18 "	Garrard, George	"	6/6 "	To Tramways.
18 "	Hoare, M.	"	7/- "	"
18 "	M'Lean, H.	"	6/6 "	"
18 "	Keene, William	"	7/- "	"
18 "	Humby, A. C.	"	6/6 "	"
20 "	Grothen, William	"	7/- "	Discharged.
20 "	Fox, James	"	7/- "	"
20 "	Lyons, William	"	7/- "	"
21 "	Harris, Mrs. A.	Gatekeeper	7/6 per week	Resigned.
21 "	Love, George	Porter	10/6 per day	Discharged.
22 "	Dollen, Lawrence	Junior porter	5/- "	"
22 "	Redshaw, Alfred	"	2/6 "	Resigned.
23 "	Simon, F.	Porter	6/- "	Discharged.
25 "	Hetherington, J.	"	7/- "	To Tramways.
26 "	Davies, William	"	7/- "	"
27 "	Scott, John	Junior porter	4/2 "	Discharged.
27 "	Gregory, F.	"	3/4 "	"
27 "	Mathews, J.	"	3/4 "	"
28 "	Tilley, Mr.	Barrack attendant	7/6 "	"
28 "	Northwood, Mrs.	Gatekeeper	7/- per week	"
29 "	Cartwright, William	Porter	7/- per day	"
31 "	Russell, Mrs. M.	Barrack attendant	20/- per week	"
1 Aug.	Colles, W. F.	Operator	£80 per ann.	Resigned.
1 "	Tanner, T.	Porter	6/6 per day	To Tramways.
1 "	Derby, J.	"	7/- "	"
2 "	Venables, Frank	Probationer	2/6 per week	Resigned.
3 "	Mea, Mrs.	Gatekeeper	10/- "	"
4 "	Peachy, Mrs. M.	"	10/- "	"
4 "	Croke, M. A.	"	Free house	Discharged.
5 "	Newman, Mrs.	"	"	Resigned.
5 "	Porter, F.	Junior porter	5/- per day	Discharged.
5 "	Pearce, W.	Porter	7/- "	"
5 "	Philson, Mrs.	Gatekeeper	7/- per week	"
7 "	M'Mahon, R.	"	18/- "	"
8 "	Tate, John T.	Clerk	£150 per ann.	Retired.
8 "	Woodcroft, E.	Gatekeeper	Free house	Discharged.
8 "	George, Allen	Junior porter	5/- per day	Resigned.
9 "	Cowan, Thomas	Porter	7/- "	Discharged.
9 "	Wood, T. A.	Junior clerk	£110 per ann.	"
10 "	Garrett, J.	Porter	7/- per day	To Tramways.
11 "	Annersley, Mrs.	Gatekeeper	7/- per week	Resigned.
11 "	Deeley, G. H.	Junior porter	5/- per day	"
11 "	Hartley, Henry	Signal-lighter	10/- per week	Discharged.
12 "	Donnellan, P.	Porter	7/- per day	"
12 "	Cosselin, W.	Junior porter	2/6 "	Resigned.
13 "	Hopkins, Henry	Porter	7/- "	"
15 "	Martin, Edward	"	6/6 "	Discharged.
19 "	Penfold, Mrs. Sarah	Gatekeeper	7/- per week	Resigned.
20 "	Madden, W.	Operator	£85 per ann.	Discharged.
20 "	Gabriel, F.	Porter	7/- per day	Resigned.
25 "	M'Grath, Mrs.	Gatekeeper	Free house	"
26 "	Johnson, Harold	Clerk	£120 per ann.	Discharged.
28 "	Murray Patrick	Operator	£140 "	Deceased.
29 "	Doughan, John	"	£110 "	Discharged.
30 "	White, Thomas	Porter	6/- per day	"
31 "	Lewis, A. T.	Operator	£110 per ann.	Resigned.
1 Sept.	Edmonds, T. D.	Clerk	£200 "	Discharged.
1 "	Doughan, Patrick	Gatekeeper	7/- per week	"
3 "	Bray, Mrs. M.	"	Free house	Resigned.
3 "	Smith, Mrs. T.	"	"	"
5 "	Gazelev, J. H.	Porter	7/- per day	Discharged.
8 "	Boland, Mrs.	Gatekeeper	7/- per week	Resigned.
8 "	Roberts, Emily	"	7/- "	Discharged.
8 "	Lewis, Mrs. B.	"	7/- "	Resigned.
10 "	Lecky, J. R.	Shunter	9/- per day	Discharged.
13 "	Thrift, A. R.	Probationer	2/6 per week	Resigned.
15 "	Haves, Mrs.	Gatekeeper	Free house	"
16 "	Chew, Charles	Porter	7/- per day	Discharged.
19 "	Kerton, Henry	Inspector	£150 per ann.	Resigned.
21 "	Maffey, N.	Porter	7/- per day	To Tramways.
22 "	Dent, E.	"	6/6 "	Discharged.
23 "	Marshall, Matthew	Tinsmith	9/6 "	To Interlocking Branch.
26 "	Gill, Mrs.	Gatekeeper	Free house	Resigned.
26 "	Hoody, W. J.	Night officer	£130 per ann.	"
26 "	Wilson, Sarah	Gatekeeper	7/- per week	"
27 "	Meehan, Michael	Porter	6/6 per day	Discharged.
28 "	Wills, E. A.	Junior porter	3/4 "	To Locomotive Branch.
30 "	Turner, Frank	Operator	£110 per ann.	Discharged.
30 "	Curtain, J. J.	Probationer	2/6 "	Resigned.
1 Oct.	Caplin, J.	Porter	7/- per day	"
1 "	Turner, F.	Operator	£110 per annum	Discharged.
2 "	Middlebrook, G.	Porter	7/- per day	Resigned.
3 "	Brutan, Eliza	Gatekeeper	7/- per week	"
3 "	Robinson, F.	District Superintendent	£500 per annum	Deceased.
8 "	Ryan, James	Junior Porter	3/4 per day	To Locomotive Branch, Tramways.
9 "	Baldry, Thomas	Porter	7/- "	Deceased.
10 "	Elston, A. R.	Probationer	2/6 per week	To Electrical Branch.
10 "	Taylor, E.	Clerk	£150 per annum	Discharged.
11 "	Sullivan, Florence	Gatekeeper	Free house	Resigned.
11 "	Smith, Robert	Station-master	£165 per annum	"

APPENDIX XXIV—continued.

Date.	Name.	Position	Rate.	Remarks.
1892. CHIEF TRAFFIC MANAGER'S BRANCH—continued.				
13 Oct.	Ailen, William	Gatekeeper	10/- per week	Retrenchment
13 "	Fairburn, W.	"	7/6 "	Discharged.
13 "	Jones, Mary Ellen	"	Free house	Deceased.
13 "	O'Brien, Elizabeth	"	10/- per week	Resigned.
13 "	Witherspoon, J.	"	7/- "	Discharged.
14 "	Snelling, Theophilus	Porter	7/- per day	Resigned.
17 "	Buhler, John	"	6/6 "	Deceased.
19 "	Holloway, Anne	Gatekeeper	Free house	Resigned.
20 "	Long, J.	Lamp lighter	8/- per week	Discharged.
21 "	Payne, C.	Officer cleaner	4/2 per day	Retrenchment.
21 "	Bell, Elizabeth	Gatekeeper	7/- per week	Discharged.
21 "	Jones, Walter	Junior Porter	5/- per day	"
25 "	Foley, Harriett	Gatekeeper	7/- per week	Resigned.
31 "	Brown, Louisa	"	7/- "	"
1 Nov.	Catford, C. E.	Junior Porter	2/6 per day	To Tramways.
1 "	Ogden, J.	"	5/- "	Resigned
1 "	M'Kean, R.	Probationer	2/6 per week	"
2 "	Toohy, T.	Apprentice Clerk	£60 per annum	Discharged
3 "	Sirkett, E.	Junior Porter	4/2 per day	Resigned.
4 "	Spens, Mrs.	Gatekeeper	Free house	"
4 "	M'Govern, Mrs.	"	"	"
5 "	Standen, T. G.	Porter	7/- per day	Retrenchment.
6 "	Spillane, Agnes	Gatekeeper	7/6 per week	Resigned.
7 "	Jackson, Percy	Porter	6/- per day	Discharged.
8 "	O'Connor, B.	"	7/- "	Retrenchment.
8 "	Clay, A.	"	6/6 "	"
8 "	Griffiths, John	"	8/6 "	"
8 "	M'Namara, M.	"	7/- "	"
8 "	Collins, Jane	Gatekeeper	Free house	Resigned
9 "	Thomson, Charles	Porter	6/6 per day	Retrenchment
9 "	Heddall, Joseph	"	6/6 "	"
9 "	Stanbrook, G.	"	6/6 "	"
9 "	Smith, E. L. C.	Shunter	7/6 "	"
9 "	Clarke, Gordon	Porter	7/- "	Discharged.
10 "	Glover, John	"	7/6 "	Retrenchment
10 "	Brown, Harold	Junior Porter	4/2 "	"
10 "	M'Closkey, Owen	Porter	7/6 "	"
10 "	Gooch, W.	"	6/6 "	"
10 "	Finlay, George	Signalman	11/- "	Retired.
11 "	Blackett, George	Porter	6/- "	Retrenchment.
12 "	Sorrell, A.	"	6/6 "	"
12 "	Wilson, James	"	6/6 "	"
15 "	Hill, Arthur H.	Junior Porter	5/- "	Resigned
16 "	Paul, Joseph	Porter	7/6 "	Deceased.
15 "	Menzies, Mary	Gatekeeper	30/- per week	Retired.
16 "	Bernasconi, V.	Porter	6/6 "	Resigned
16 "	Irvine, Robert	Apprentice Clerk	£30 per annum	To Stores Branch
16 "	Griffiths, Edward	Porter	7/- per day	Retrenchment.
17 "	Packer, W.	"	6/6 "	"
17 "	Harper, H. J.	"	6/6 "	"
17 "	Middleton, A.	Coal Guard	8/6 "	Deceased
17 "	Gould, Albert	Porter	6/6 "	Discharged.
18 "	Larmour, Alfred W.	Apprentice Clerk	£30 per annum	To Property and Estate Branch
18 "	Montgomery, John	Junior Porter	2/6 per day	To Tramways.
18 "	Castles, W.	"	5/- "	Retrenchment.
18 "	Kamane, James	Shunter	7/- "	Discharged.
21 "	Penhonor, J.	Porter	6/6 "	Retrenchment.
22 "	Taney, M.	"	7/- "	"
22 "	Quinn, John	"	7/- "	Resigned.
23 "	Furby, E.	"	7/- "	Retrenchment.
23 "	Reid, Thomas	Junior Porter	4/2 "	"
23 "	Dugan, William	"	4/2 "	Resigned.
23 "	Ward, Martin	Porter	7/- "	Retrenchment
23 "	Timewell, Thomas	"	6/6 "	"
23 "	Johnstone, S.	"	7/- "	"
24 "	Hutton, J.	Junior Porter	5/- "	Retrenchment.
24 "	Blake, John	Porter	7/- "	Discharged
24 "	Rutley, F.	"	7/- "	Retrenchment.
25 "	M'Beath, W.	"	7/6 "	Discharged.
26 "	Mullens, Mrs.	Caretaker	12/6 per week	"
26 "	Parker, Clara	"	12/6 "	"
26 "	Grantham, Mary	Gatekeeper	Free house	Resigned.
26 "	De Lockie, C.	Station-master	£232 per annum	Discharged.
27 "	Dennison, O.	Porter	7/- per day	Retrenchment.
25 "	Madden, F.	"	7/- "	"
29 "	Rice, W.	"	7/- "	"
30 "	Haner, A. T.	"	6/6 "	"
30 "	Twyman, Albert	"	7/- "	"
30 "	Meakill, Michael	Gatekeeper	15/- per week	Discharged.
1 Dec.	Dyer, J.	Porter	6/- per day	Retrenchment.
1 "	Airs, C.	Gatekeeper	7/- per week	Resigned.
1 "	Bartlett, F.	Porter	6/- per day	Retrenchment.
1 "	Downing, Daniel J.	Apprentice Clerk	£30 per annum	To Stores Branch.
1 "	Birrell, Alexander	Porter	7/- per day	Discharged
1 "	Osg, John S.	Junior Clerk	£120 per annum	Retrenchment.
2 "	Foggan, J. M.	Porter	7/- per day	Discharged.
2 "	Tate, Robert	Shunter	7/6 "	"
2 "	Arnold, E.	Porter	7/- "	Retrenchment.
5 "	M'Namara, M.	"	6/6 "	Discharged.
10 "	Davies, Edgar	Junior Porter	5/- "	Resigned.
12 "	O'Connor, M.	Porter	7/- "	Retrenchment.
12 "	Thompson, H.	Junior Porter	5/- "	Discharged.
13 "	Mullane, P.	"	3/4 "	Retrenchment.
15 "	Dwyer, Henry	"	5/- "	"
16 "	Shaw, Mrs.	Gatekeeper	Free house	Resigned.
16 "	Lynch, J.	Porter	7/- per day	Discharged.
18 "	Benson, J.	Junior Porter	4/2 "	Resigned
19 "	St. Ledger, T.	Junior Clerk	£100 per annum	Discharged.
19 "	Mackay, James	Gatekeeper	20/- per week	Deceased.
20 "	Turner, Walter	Porter	7/6 per day	Resigned.
20 "	Guthrie, Peter	"	7/- "	Deceased.
23 "	O'Donnell, M.	Apprentice Clerk	£40 per annum	Resigned.
23 "	Cracknell, E.	Gatekeeper	5/- per week	"
23 "	Crawford, J.	Porter	7/- per day	"
1893.				
1 Jan.	Rolston, Mrs.	Gatekeeper	20/- per week	"
1 "	Puss, Samuel	Station master	£260 per annum	Retired.
1 "	Roach, A.	Operator	£30 "	Retrenchment.
1 "	Clarke, Richard	Probationer	2/6 per week	Discharged.
1 "	Holger, Simeon	Clerk	£150 per annum	Exchanged with J. Fisher from Traffic Audit Branch
2 "	Elwood, T.	Postal Assistant	10/- per week	Discharged.
3 "	Ewing, E.	Apprentice Clerk	£30 per annum	Retrenchment.
4 "	Lawton, Ellen	Barrack Attendant	7/6 per week	"
5 "	Marsh, A. W.	Porter	6/6 per day	"
5 "	Davies, Henry C.	Junior Clerk	£120 per annum	Resigned.
5 "	Reilly, Martin	Porter	6/6 per day	Retrenchment.

APPENDIX XXIV—continued.

Date.	Name.	Position	Rate.	Remarks.
CHIEF TRAFFIC MANAGER'S BRANCH—continued.				
1893.				
6 Jan	Swift, Ruth	Caretaker	5/- per week	Retrenchment.
7 "	Lucas, A.	Apprentice Clerk	£70 per annum	"
8 "	Fairhall, H. H.	Junior Clerk	£120	"
6 "	Butts, J.	Gatekeeper	7/- per week	Resigned.
10 "	O'Connell, Michael	Porter	7/- per day	Retrenchment.
10 "	Webb, Mrs	Gatekeeper	Free house	Resigned.
11 "	Morgan, E.	Porter	6/6 per day	Retrenchment.
18 "	Edwards, George	Guard	10/6	Resigned.
23 "	Tarrant, James	Porter	7/-	Retrenchment
23 "	Blakie, J.	"	7/-	"
23 "	Morinarty, Mrs.	Gatekeeper	Free house	Resigned.
24 "	O'Connor, William	Night Officer	£140 per annum	Retrenchment.
24 "	Johnson, John	Junior Porter	5/- per day	"
31 "	Smith, Annie	Gatekeeper	7/- per week	Resigned.
1 Feb.	Doherty, D.	Clerk	£200 per annum	Retrenchment.
1 "	Franklin, Mary	Gatekeeper	Free house	Resigned.
6 "	Readon, J. J.	Night Officer	£120 per annum	Retrenchment.
7 "	Cock, George W.	Probationer	2/6 per week	Resigned.
10 "	Nowland, W.	Clerk	£130 per annum	Exchanged with W. J. Williams, of Traffic Branch.
10 "	Clark, Priscilla	Gatekeeper	7/- per week	Retrenchment.
11 "	Kullingley, Alfred	Porter	7/6 per day	"
11 "	Usher, Joseph	"	6/6	"
12 "	Tulp, Mrs.	Gatekeeper	10/- per week	"
12 "	Brain, Thomas	Station-master	£225 per annum	Retired.
12 "	Tomlinson, W. H.	Clerk	£250	Deceased.
18 "	Farrham, Joseph	Junior Clerk	£110	Retrenchment.
18 "	Taylor, Mary Ann	Gatekeeper	10/- per week	Resigned.
21 "	Langdown, C. H.	Printer	11/- per day	Retrenchment.
21 "	Hickey, John	Officer-in-charge	£130 per annum	"
24 "	New, W.	Shunter	7/6 per day	"
25 "	Usher, James	Porter	7/-	"
21 "	Naylor, Thomas	Gatekeeper	15/- per week	Resigned.
28 "	Cowan, James	Head Porter	9/- per day	Retrenchment.
28 "	Kirkman, John	Junior Clerk	£90 per annum	"
28 "	Rhynhardt, George	"	£120	"
2 Mar.	Meikle, Emily	Gatekeeper	Free house	Resigned.
2 "	Willis, Clarence	Apprentice Clerk	£40 per annum	Retrenchment.
2 "	Coleman, Eleanor	Gatekeeper	Free house	Resigned.
5 "	Colthard, R.	Signalman	8/6 per day	Retrenchment.
6 "	Egan, Patrick	Porter	7/-	To Tramways.
6 "	Barton, Mrs.	Gatekeeper	Free house	Resigned.
10 "	Ambler, F.	Junior Conductor	5/- per day	To Secretary's Branch.
10 "	Huxtable, J. P.	Guard	19/6	Deceased.
24 "	Lyncham, Christina	Gatekeeper	7/- per week	Resigned.
26 "	Rather, Herbert	Junior Clerk	£100 per annum	Retrenchment.
28 "	Hubbard, James	Porter	7/6 per day	"
30 "	Campbell, William	"	7/-	"
31 "	Murphy, S. C.	Apprentice Clerk	£40 per annum	"
31 "	Blain, David	Officer-in-charge	£140	"
1 April	Smith, Thomas	Clerk	7/- per day	"
1 "	Regan, W.	Gatekeeper	30/- per week	"
1 "	Burrill, Martha	"	Free house	Resigned.
1 "	Birrell, A.	Porter	7/- per day	Retrenchment.
1 "	Simpson, Edward	Station-master	£200 per annum	"
1 "	Ashford, Mrs. E.	Gatekeeper	7/- per week	Resigned.
4 "	Grono, Thos.	Porter	7/- per day	Retrenchment.
6 "	Carroll, Wm.	"	7/-	Discharged.
6 "	Ross, Henry	Junior porter	3/4	Retrenchment.
7 "	Walker, Fred.	"	5/-	"
7 "	Coombe, D. C.	Porter	7/6	"
7 "	Hartley, Fanny	Gatekeeper	Free house	Deceased.
12 "	Lorrimer, Peter	Porter	7/6 per day	Discharged.
13 "	Hubert, A. J.	Junior porter	2/6	Retrenchment.
14 "	Cowan, Marian	Gatekeeper	Free house	Resigned.
14 "	Holland, Henry	Junior porter	5/- per day	Retrenchment.
15 "	Potter, George	Porter	7/-	"
18 "	Coles, Thos. H.	Junior porter	2/6	"
18 "	Irvine, John	Porter	7/-	"
19 "	Gray, Wm.	"	8/-	Deceased; position retrenched.
22 "	Guerin, John	"	7/-	Retrenchment.
22 "	Devenoy, T.	Gatekeeper	30/- per week	Discharged.
24 "	Cavanagh, Chas.	Probationer	2/6	Resigned; position retrenched.
25 "	Porter, Eliz.	Gatekeeper	7/-	Resigned.
29 "	Freeman, Wm.	Porter	7/- per day	Retrenchment.
28 "	Taylor, Mrs.	Gatekeeper	Free house	Resigned.
30 "	Mulligan, Thos. J.	Clerk	£165 per annum	Retrenchment.
30 "	Jones, Jas.	Junior Clerk	£108	"
30 "	Hynes, Frank	Clerk	£130	"
31 "	McCarthy, J.	Station-master	£206	"
1 May.	Donovan, D.	Clerk	£180	"
2 "	Sulter, James	Junior porter	5/- per day	"
2 "	Freeman, Wm.	Porter	7/-	"
3 "	Hill, W. H.	"	7/-	"
3 "	Boag, James	"	7/-	"
4 "	Clarke, John	Guard	10/6	"
4 "	Wells, Mary Ann	Gatekeeper	2/6 per week	Deceased
5 "	Porter, Michael	Porter	7/- per day	Retrenchment.
6 "	Evans, F. J.	Night Officer	£130 per annum	Left; position retrenched.
6 "	King, Patrick	Porter	7/- per day	Retrenchment.
8 "	Marlow, George	Shunter	7/-	"
8 "	McDonald, Donald	Conductor	7/6	"
8 "	Shirtley, W.	Porter	7/-	"
9 "	Mitchell, J.	"	7/-	"
9 "	Dymond, John	"	7/-	"
9 "	Frost, John	"	7/-	"
9 "	Masten, Stephen	"	7/-	"
10 "	Mulheon, J.	"	7/-	"
13 "	Nicholls, Norman	Postal assistant	£80 per annum	Discharged.
13 "	Rielly, Maurice	Porter	7/- per day	Retrenchment.
13 "	Gleeson, Thomas	"	7/-	"
13 "	Mitchell, J.	Gatekeeper	30/- per week	"
13 "	Hall, Richard	Porter	7/- per day	"
13 "	Cowan, James	"	7/-	"
13 "	Arnold, Edward	"	7/-	"
13 "	McGlew, Sid.	"	7/-	"
15 "	Lowe, George	"	7/-	"
16 "	McBeath, Wm.	"	7/-	"
15 "	Nash, Jas.	Apprentice clerk	£50 per annum	"
16 "	Ryan, J.	Junior porter	4/2 per day	"
16 "	Moore, Thomsina	Gatekeeper	Free house	Resigned.
16 "	Wright, John E.	Attendant	5/7 per week	Retrenchment.
17 "	Price, J.	Shunter	7/- per day	"
18 "	O'Hare, W.	Porter	7/-	"
19 "	Baylis, Bertha	Gatekeeper	7/- per week	Resigned.
20 "	Cambridge, John	Porter	7/- per day	Retrenchment.
20 "	Karlbrunner, Jas.	"	7/-	"
20 "	Geldard, Richard	"	7/-	"

APPENDIX XXIV—continued.

Date.	Name.	Position.	Rate.	Remarks.
1893. CHIEF TRAFFIC MANAGER'S BRANCH—continued.				
20 May	Hicks, Jas.	Porter	7/- per day	Retrenchment.
20 "	Perrin, Fred.	"	7/- "	"
20 "	Ruhan, Jas.	"	7/- "	"
20 "	Pierce, Jos. H.	"	6/- "	"
20 "	Henderson, Robt.	"	6/- "	"
20 "	Mosley, Mrs. S.	Gatekeeper	Free house	Discharged.
20 "	O'Donnell, John	Junior porter	5/- per day	Retrenchment.
20 "	Rourty, Hugh	"	2/6 "	"
20 "	Lloyd, George	"	5/- "	"
22 "	Burnett, Jas.	Porter	7/- "	"
22 "	Carey, Honoral	Gatekeeper	7/6 per week	Discharged.
22 "	Guilfoyle, Jas.	Porter	7/- per day	Retrenchment.
23 "	Edwards, C.	"	7/- "	"
23 "	Lawton, Mrs.	Gatekeeper	Free house	Resigned.
24 "	Penhaligon, Chas.	Junior porter	2/6 per day	Retrenchment.
25 "	Gubhins, H.	Porter	6/- "	"
27 "	Deveney, Mrs.	Gatekeeper	Free house	"
30 "	Connell, Bridget	"	"	Resigned.
30 "	Hickey, Cornelius	Junior porter	2/6 per day	To Electrical Engineer's Branch.
30 "	Drinan, Ellen	Gatekeeper	7/- per week	Resigned.
1 June	Atkins, Joseph	Guard	12/- per day	Retrenchment.
1 "	Pier, Hy.	"	10/6 "	"
7 "	Lock, John	"	12/- "	"
1 "	Williams, Mary	Gatekeeper	3/- per week	Discharged.
1 "	Somers, Nellie	"	Free house	Resigned.
1 "	Thompson, J.	Clerk	£150 per annum	Retrenchment.
1 "	Simpson, R.	Station-master	£250 "	"
2 "	Coll, Peter	Porter	7/- per day	"
2 "	Roman, M.	"	7/6 "	"
2 "	Wilson, Ellen	Gatekeeper	5/- per week	Discharged.
3 "	Clissold, A.	Guard	12/- per day	Retrenchment.
3 "	Wills, Alfred	Shunter	7/6 "	"
10 "	Higgins, Ellen	Gatekeeper	Free house	Resigned.
12 "	McCallum, Kate	"	"	"
13 "	Newell, Henry	Porter	7/6 per day	Discharged.
14 "	Bates, W. H.	Guard	10/- "	"
14 "	Fulton, John	Porter	7/- "	Retrenchment.
14 "	Cannon, R.	"	7/- "	"
14 "	Pierce, Johanna	Gatekeeper	2/6 per week	Resigned.
14 "	Dymond, F.	Junior porter	4/2 per day	Retrenchment.
15 "	Barday, S.	"	3/4 "	"
15 "	Conroy, N. B.	Clerk	£140 per annum	"
15 "	Holloway, Chas.	Porter	7/- per day	"
15 "	Crowley, Elizabeth	Gatekeeper	7/- per week	"
16 "	Bartlett, Maud	"	Free house	Resigned.
17 "	Dunne, Michael	Porter	7/- per day	"
17 "	Croan, George	"	7/- "	"
18 "	Cook, R.	"	7/- "	"
20 "	Brown, James	"	7/- "	Retrenchment.
20 "	Tansy, M.	"	7/- "	"
20 "	Heddy, Michael	"	7/- "	"
21 "	Brown, A.	"	7/- "	"
21 "	Harburn, W.	"	7/- "	"
21 "	Michael, H.	"	7/- "	"
21 "	Burke, M.	Junior porter	3/4 "	"
22 "	Cross, Thomas	"	2/6 "	"
23 "	Wilson, J. H.	Porter	7/- "	"
23 "	Bulmer, John	Gatekeeper	6/- "	"
23 "	Higgenson, E.	Porter	7/- "	"
23 "	Rowlandson, Leslie	"	7/- "	"
23 "	Griffiths, E.	"	7/- "	"
23 "	Whitely, Grace	Gatekeeper	15/- per week	"
24 "	Shepherd, Ann	"	7/- "	Resigned.
27 "	Lynch, J. J.	Porter	7/- "	Retrenchment.
27 "	Read, Michael	Gatekeeper	7/- per day	"
28 "	Peening, Isiah	Junior porter	2/6 "	"
28 "	Horner, Robt.	"	3/4 "	"
28 "	Herbert, John	"	4/2 "	"
28 "	Pryke, Ernest	"	4/2 "	"
29 "	Carpenter, Wm	Porter	6/- "	"
29 "	Brown, Mary	Gatekeeper	3/- per week	Resigned.
30 "	Ellis, Wm.	Car-conductor	7/- "	Retrenchment.
1892. CONTROLLER OF STORES BRANCH.				
4 Aug.	Agnew, James B.	Clerk	£225 per annum	Deceased.
1 Oct.	Dobson, K. J.	Storekeeper	£250 "	Left the Service.
12 Nov.	Sproule, Wallace C.	Apprentice Clerk	£30 "	Deceased.
1893.				
31 May	Gibbons, Walter	Apprentice clerk	£40 "	Resigned.
1892. SIGNAL AND INTERLOCKING BRANCH.				
2 July	Socoll, Thomas	Draftsman	£248 per ann.	Retrenchment.
6 Aug.	Bromell, William	Driller	8/2 per day	"
18 "	Smith, William	Labourer	7/6 "	"
18 "	Heaton, John	Blacksmith	10/6 "	"
18 "	Traynor, James	"	10/- "	"
18 "	Gillies, Andrew	Striker	7/6 "	"
18 "	Reidy, Martin	"	7/6 "	"
18 "	Emmett, William	"	7/6 "	"
18 "	Smith, James	Carpenter	10/- "	"
13 Dec.	Parker, Thomas	Blacksmith	11/2 "	Retired.
21 "	Parish, John	Bolt maker	8/2 "	Resigned.
1893.				
5 Jan.	Sydenham, C.	Painter	7/- "	Retrenchment.
5 "	Banyard, C.	Carpenter	10/- "	"
5 "	Bewes, H.	"	10/- "	"
1892. PROPERTY AND ESTATE BRANCH.				
26 Oct.	Flanders, Amos	Bill poster	7/- per day	Resigned.
1893.				
30 April	McIntosh, R.	Gardener	9/- "	Retrenchment.
1892. ELECTRICAL ENGINEER'S BRANCH.				
20 Oct.	Quinn, J.	Operator	£30 per annum	Discharged.
31 "	Hastings, H.	"	£100 "	"
1893.				
1 Mar.	Williams, W. J.	"	£150 "	Exchanged with W. Nowland, of Electrical Branch
11 May.	Fulton, C.	Probationer	2/6 per week	Retrenchment.
31 "	Thomas, R.	Operator	£100 per annum	"
31 "	Maddelford, J. H.	"	£110 "	"
30 June	Munro, C. B.	"	£120 "	"
30 "	Young, John	"	£80 "	"
30 "	Young, Thomas	"	4/80 "	"
30 "	Brown, George	"	4/80 "	"
30 "	Dwyer, J.	Line-man	£180 "	"

APPENDIX XXV.

SECTIONAL EARNINGS—SYDNEY TO KIAMA, 71 miles 53 chains.

Years ending 31st December, 1890, 1891, and 1892.

1890. CAPITAL, £2,064,802.				1891. CAPITAL, £2,152,610.				1892. CAPITAL, £2,180,167.								
EXPENDITURE.				EARNINGS.				EXPENDITURE.				EARNINGS.				
Department.	Amount.	Cost per Train Mile.	Percentage to Earnings.	Department.	Amount.	Train Miles Run.	Earnings per Train Mile.	Department.	Amount.	Cost per Train Mile.	Percentage to Earnings.	Department.	Amount.	Train Miles Run.	Earnings per Train Mile.	
Expenses.	£	d.	%	Receipts.	£	d.		Expenses.	£	d.	%	Receipts.	£	d.		
Locomotive..	46,419	21-11	39-95	Coaching..	77,040	348,416	53-06	Locomotive	61,259	22-56	44-53	Coaching	85,458	394,902	51-93	
Per-way ..	35,144	15-99	30-25	Goods ..	39,146	179,194	52-43	Per-way .	22,936	8-44	16-68	Goods ...	52,092	256,792	48-68	
Traffic	26,401	12-01	22-72					Traffic	27,478	10-12	19-97					
General	3,925	1-78	3-38					General ...	4,486	1-65	3-26					
	£ 111,859	50-89	96-30	£ 116,186	527,610	52-85		£ 116,159	42-77	84-44		£ 120,002	44-50	86-00	£ 139,530	
Balance, profit on working, exclusive of interest.	4,297							Balance, profit on working, exclusive of interest.	21,391				19,528			
	£ 116,186			£ 116,186				£ 137,550				£ 139,530			£ 139,530	
					£										£	
Interest on Capital, at 3½ per cent.					72,258			Interest on Capital, at 3½ per cent.							76,305	
Cost of working the line					111,889			Cost of working the line							120,002	
Total cost for the year					184,157			Total cost for the year							196,307	
Total traffic for the year					116,186			Total traffic for the year							139,530	
LOSS ON THE YEAR'S WORKING					£67,971			LOSS ON THE YEAR'S WORKING							£56,777	

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SECTIONAL EARNINGS—JUNEE TO HAY, 167 miles 35³/₄ chains.
Years ending 31st December, 1890, 1891, and 1892.

1890. CAPITAL, £1,025,174.								1891. CAPITAL, £1,034,072.								1892. CAPITAL, £1,042,483.							
EXPENDITURE.				EARNINGS.				EXPENDITURE.				EARNINGS.				EXPENDITURE.				EARNINGS.			
Department.	Amount.	Cost per Train Mile.	Percentage to Earnings.	Department.	Amount.	Train Miles Run.	Earnings per Train Mile.	Department.	Amount.	Cost per Train Mile.	Percentage to Earnings.	Department.	Amount.	Train Miles Run.	Earnings per Train Mile.	Department.	Amount.	Cost per Train Mile.	Percentage to Earnings.	Department.	Amount.	Train Miles Run.	Earnings per Train Mile.
Expenses.	£	d.	%	Receipts.	£		d.	Expenses.	£	d.	%	Receipts.	£		d.	Expenses.	£	d.	%	Receipts.	£		d.
Locomotive	17,503	21 11	33·82	Coaching	21,193	54,572	93·20	Locomotive	14,360	22 56	26 30	Coaching..	22,651	51,337	105·89	Locomotive	15,259	22·74	27·54	Coaching..	22,236	53,127	100·67
Per-way ...	11,310	13 64	21·85	Goods ...	30,566	144,378	50 80	Per-way ...	14,247	22 30	26·09	Goods ...	31,952	101,860	75·64	Per-way .	15,051	22·48	27·17	Goods ...	33,114	107,920	73 64
Traffic	5,008	6·04	9·68					Traffic	6,175	9·71	11·31					Traffic	6,303	9·39	11·38				
General ...	1,480	1·79	2·85					General ...	1,051	1·65	1·92					General ...	1,410	2·10	2·54				
	£ 35,301	42·58	68·20		£ 51,750	198,950	62·44		£ 35,833	56·31	65·62		£ 54,603	152,717	85·81		£ 38,023	56·66	68 63		£ 55,400	161,047	82·56
Balance, profit on working, exclusive of interest.	10,458							Balance, profit on working, exclusive of interest.	18,770							Balance, profit on working, exclusive of interest.	17,377						
	£ 51,759				£ 51,759				£ 54,603				£ 54,603				£ 55,400				£ 55,400		
					£																		
Interest on Capital at 4 per cent.					41,007			Interest on Capital at 4 per cent.					41,362			Interest on Capital at 4 per cent.					41,699		
Cost of working the line					35,301			Cost of working the line					35,833			Cost of working the line					38,023		
Total cost for the year					76,308			Total cost for the year					77,195			Total cost for the year					79,722		
Total traffic for the year					51,759			Total traffic for the year					54,603			Total traffic for the year					55,400		
LOSS ON THE YEAR'S WORKING					£ 24,549			LOSS ON THE YEAR'S WORKING					£ 22,592			LOSS ON THE YEAR'S WORKING					£ 24,322		

APPENDIX XXV—continued.

SECTIONAL EARNINGS—NARRANDERA TO JERILDERIE, 64 miles 54³/₄ chains.

Years ending 31st December, 1890, 1891, and 1892.

1890. CAPITAL, £419,880.								1891. CAPITAL, £424,143.								1892. CAPITAL, £424,175.							
EXPENDITURE.				EARNINGS.				EXPENDITURE.				EARNINGS.				EXPENDITURE.				EARNINGS.			
Department.	Amount.	Cost per Train Mile.	Percentage to Earnings.	Department.	Amount.	Train Miles Run.	Earnings per Train Mile.	Department.	Amount.	Cost per Train Mile.	Percentage to Earnings.	Department.	Amount.	Train Miles Run.	Earnings per Train Mile.	Department.	Amount.	Cost per Train Mile.	Percentage to Earnings.	Department.	Amount.	Train Miles Run.	Earnings per Train Mile.
Expenses.	£	d.	£	Receipts.	£		d.	Expenses.	£	d.	%	Receipts.	£		d.	Expenses.	£		%	Receipts.	£		d.
Locomotive..	2,757	21.12	85.67	Coaching..	3,615	10,128	85.66	Locomotive.	2,352	22.56	25.74	Coaching..	3,764	11,005	82.09	Locomotive	2,212	22.74	24.91	Coaching..	3,746	10,945	82.14
Per.-way ...	4,063	31.12	52.57	Goods....	4,114	21,206	46.56	Per.-way ...	4,546	43.62	49.75	Goods	5,374	14,008	92.07	Per.-way ...	3,808	39.15	42.88	Goods.....	5,134	12,399	99.37
Traffic	882	6.75	11.41					Traffic	1,474	14.14	16.13					Traffic	1,227	12.61	13.82				
General.....	233	1.78	3.01					General.....	172	1.65	1.88					General ...	204	2.10	2.30				
	£ 7,935	60.77	102.66		£ 7,729	31,334	59.20		£ 8,544	81.97	93.50		£ 9,138	25,013	87.68		£ 7,451	76.60	83.91		£ 8,880	23,344	91.29
				Balance, loss on working, exclusive of interest.	206			Balance, profit on working, exclusive of interest.	594			Balance, profit on working, exclusive of interest.	1,429			Balance, profit on working, exclusive of interest.							
	£ 7,935				£ 7,935				£ 9,138				£ 9,138				£ 8,880				£ 8,880		
						£									£								£
Interest on Capital at 4 per cent.					16,795			Interest on Capital at 4 per cent.					16,965			Interest on Capital at 4 per cent.					16,967		
Cost of working the line					7,935			Cost of working the line					8,544			Cost of working the line					7,451		
Total cost for the year					24,730			Total cost for the year					25,509			Total cost for the year.....					24,418		
Total traffic for the year					7,729			Total traffic for the year					9,138			Total traffic for the year					8,880		
LOSS ON THE YEAR'S WORKING					£17,001			LOSS ON THE YEAR'S WORKING					£16,371			LOSS ON THE YEAR'S WORKING					£15,538		

SECTIONAL EARNINGS—WALLERAWANG TO MUDGEES, 85 miles 6 chains.

Years ending 31st December, 1887, 1891, and 1892.

1887.					1891.					1892.													
CAPITAL, £1,002,517.					CAPITAL, £1,035,021.					CAPITAL, £1,042,815.													
EXPENDITURE.			EARNINGS.			EXPENDITURE.			EARNINGS.			EXPENDITURE.			EARNINGS.								
Department.	Amount.	Cost per Train Mile.	Percentage to Earnings.	Department.	Amount.	Train Miles Run.	Earnings per Train Mile.	Department.	Amount.	Cost per Train Mile.	Percentage to Earnings.	Department.	Amount.	Train Miles Run.	Earnings per Train Mile.	Department.	Amount.	Train Miles Run.	Earnings per Train Mile.				
Expenses.	£	d.	%	Receipts.	£	d.		Expenses.	£	d.	%	Receipts.	£	d.		Expenses.	£	d.	%	Receipts.	£	d.	
Locomotive	7,373	19 84	26 72	Coaching..	9,157	33,936	94 23	Locomotive	11,552	22 56	33 39	Coaching..	11,554	30,597	90 63	Locomotive	9,659	22 74	26 01	Coaching..	11,177	40,192	66 74
Per-way ...	18,020	51 11	68 82	Goods	18,439	55,248	80 10	Per-way ...	11,467	22 41	33 14	Goods ...	23,046	92,237	60 95	Per-way ...	10,078	23 72	27 14	Goods ...	25,955	61,756	100 86
Traffic	5,694	15 32	20 63					Traffic	4,731	9 24	13 67					Traffic	4,457	10 49	12 00				
General ...	1,129	3 04	4 09					General ..	816	1 65	2 44					General ...	893	2 10	2 41				
	33,189	89 31	120 26		27,596	89,184	71 26		28,596	55 86	82 64		34,600	122,854	67 59		25,087	59 06	67 36		37,132	101,948	87 41
				Balance, loss on working, exclusive of interest	5,593			Balance, profit on working, exclusive of interest.	6,004							Balance, profit on working, exclusive of interest.	12,045						
	£ 33,189				£ 33,189				£ 34,600				£ 34,600				£ 37,132				£ 37,132		
Interest on Capital at 4 per cent.	40,100							Interest on Capital { 30,000 at 3½ per cent. }	41,250							Interest on Capital { 30,000 at 3½ per cent. }	41,562						
Cost of working the line	33,189							Cost of working the line { 1,005,021 at 4 per cent. }	28,596							Cost of working the line { 1,012,815 at 4 per cent. }	25,087						
Total cost for the year	73,289							Total cost for the year	69,846							Total cost for the year	66,649						
Total traffic for the year	27,596							Total traffic for the year	34,600							Total traffic for the year	37,132						
LOSS ON THE YEAR'S WORKING	£ 45,693							LOSS ON THE YEAR'S WORKING	£ 35,246							LOSS ON THE YEAR'S WORKING	£ 29,517						

APPENDIX XXV—continued.

SECTIONAL EARNINGS—COOTAMUNDRA TO GUNDAGAI, 33 miles 45½ chains.

Years ending 31st December, 1890, 1891, and 1892.

1890. CAPITAL, £241,751				1891. CAPITAL, £248,611.				1892. CAPITAL, £252,291.								
EXPENDITURE.		EARNINGS.		EXPENDITURE.		EARNINGS.		EXPENDITURE.		EARNINGS.						
Department.	Amount.	Cost per Train Mile.	Percentage to Earnings.	Department.	Amount.	Train Miles Run.	Earnings per Train Mile.	Department.	Amount.	Cost per Train Mile.	Percentage to Earnings.					
Expenses.	£	d.	%	Receipts.	£		d.	Expenses.	£	d.	%	Receipts.	£		d.	
Locomotive..	2,308	21-11	33-17	Coaching..	3,638	11,472	77-15	Locomotive	2,404	22-56	35-26	Coaching..	4,093	12,266	80-08	
Per.-way ..	2,938	25-97	41-15	Goods .	3,208	14,758	52-17	Per.-way ..	2,950	28-06	43-84	Goods ...	4,540	12,091	90-12	
Traffic	1,211	11-09	17-56					Traffic	1,418	13-31	20-80					
General	195	1-78	2-83					General ..	176	1-65	2-58					
	£	6,552	59-95	95-01	£	6,893	26,230	63-09	£	6,057	65-53	102-48	£	6,062	65-64	77-17
Balance, profit on working, exclusive of interest.		311						Balance, loss on working, exclusive of interest.		169			Balance, profit on working, exclusive of interest.		1,971	
	£	6,896		£	6,896			£	6,987			£	8,633		£	8,633
						£									£	
Interest on Capital at 3½ per cent.						8,461		Interest on Capital at 3½ per cent.							8,830	
Cost of working the line						6,552		Cost of working the line							6,662	
Total cost for the year						15,013		Total cost for the year							15,492	
Total traffic for the year						6,896		Total traffic for the year							8,633	
LOSS ON THE YEAR'S WORKING						£8,117		LOSS ON THE YEAR'S WORKING							£6,859	

APPENDIX XXV—continued.

SECTIONAL EARNINGS—GOULBURN TO COOMA, 130½ miles.

Years ending 31st December, 1890, 1891, and 1892.

1890. CAPITAL, £1,454,418.				1891. CAPITAL, £1,456,991.				1892. CAPITAL, £1,462,359.															
EXPENDITURE.		EARNINGS.		EXPENDITURE.		EARNINGS.		EXPENDITURE.		EARNINGS.													
Department.	Amount.	Cost per Train Mile.	Percentage to Earnings.	Department.	Amount.	Train Miles Run.	Earnings per Train Mile.	Department.	Amount.	Cost per Train Mile.	Percentage to Earnings.	Department.	Amount.	Train Miles Run.	Earnings per Train Mile.								
Expenses.	£	d.	%	Receipts.	£		d.	Expenses.	£	d.	%	Receipts.	£		d.								
Locomotive..	11,261	21·11	33·63	Coaching..	16,046	39,616	97·21	Locomotive	12,224	22·56	35·25	Coaching..	16,152	42,140	91·10								
Per-way ..	8,838	16·57	26·39	Goods ...	17,440	88,386	47·35	Per-way ...	11,777	21·75	33·96	Goods ...	18,524	87,860	50·60								
Traffic	3,149	5·91	9·40					Traffic	5,001	9·23	14·42												
General.....	952	1·78	2·84					General ...	895	1·65	2·58												
	£	24,200	45·37	72·26	£	33,486	128,002	62·78	£	29,897	55·19	86·21	£	30,074	57·08	84·81							
Balance, profit on working, exclusive of interest		9,286						Balance, profit on working, exclusive of interest		4,779			Balance, profit on working, exclusive of interest		5,386								
	£	33,486			£	33,486			£	34,676				£	35,460								
				£								£											
Interest on Capital at 3½ per cent.				50,904				Interest on Capital at 3½ per cent.				50,994				Interest on Capital at 3½ per cent.				51,182			
Cost of working the line				24,200				Cost of working the line				29,897				Cost of working the line				30,074			
Total cost for the year.....				75,104				Total cost for the year				80,891				Total cost for the year.....				81,256			
Total traffic for the year				33,486				Total traffic for the year				34,676				Total traffic for the year				35,460			
LOSS ON THE YEAR'S WORKING				£ 41,618				LOSS ON THE YEAR'S WORKING				£ 46,215				LOSS ON THE YEAR'S WORKING				£45,796			

APPENDIX XXV—continued.

SECTIONAL EARNINGS—ORANGE TO MOLONG, 22 miles 60 chains.

Years ending 31st December, 1890, 1891, and 1892.

1890. CAPITAL, £282,623.				1891. CAPITAL, £282,976.				1892. CAPITAL, £286,870.								
EXPENDITURE.		EARNINGS.		EXPENDITURE.		EARNINGS.		EXPENDITURE.		EARNINGS.						
Department.	Amount.	Cost per Train Mile.	Percentage to Earnings.	Department.	Amount.	Train Miles Run.	Earnings per Train Mile.	Department.	Amount.	Cost per Train Mile.	Percentage to Earnings.					
Expenses.	£	d.	%	Receipts.	£	d.		Expenses.	£	d.	%	Receipts.	£	d.		
Locomotive..	1,716	21-11	22-57	Coaching..	3,563	8,622	97-59	Locomotive	1,834	22-58	23-36	Coaching..	3,816	9,831	98-16	
Per.-way ...	1,839	22-63	24-18	Goods ...	4,098	10,882	90-88	Per.-way ...	2,407	29-62	30-66	Goods ...	6,745	11,017	146-04	
Traffic	1,488	18-25	19-50					Traffic	2,288	28-16	29-13					
General	145	1-79	1-91					General ...	134	1-65	1-71					
	£ 5,183	63-78	68-16		£ 7,604	19,504	93-57		£ 6,663	81-99	84-86		£ 6,725	77-42	63-67	
Balance, profit on working, exclusive of interest.	2,421							Balance, profit on working, exclusive of interest.	1,188					3,836		
	£ 7,604				£ 7,604				£ 7,851				£ 10,561			£ 10,561
Interest on Capital at 3½ per cent.....							£ 9,892	Interest on Capital at 3½ per cent.....								£ 10,040
Cost of working the line							5,183	Cost of working the line.....								6,725
Total cost for the year.....							15,075	Total cost for the year.....								16,765
Total traffic for the year							7,604	Total traffic for the year								10,561
LOSS ON THE YEAR'S WORKING							£7,471	LOSS ON THE YEAR'S WORKING								£6,204

APPENDIX XXV—continued.

SECTIONAL EARNINGS—HORNSBY TO ST. LEONARDS, 10 miles 29½ chains.
Years ending 31st December, 1890, 1891, and 1892.

1890. CAPITAL, £215,504.							1891. CAPITAL, £215,146.							1892. CAPITAL, £219,252.									
EXPENDITURE.				EARNINGS.			EXPENDITURE.				EARNINGS.			EXPENDITURE.				EARNINGS.					
Department.	Amount.	Cost per Train Mile.	Percentage to Earnings.	Department.	Amount.	Train Miles Run.	Earnings per Train Mile.	Department.	Amount.	Cost per Train Mile.	Percentage to Earnings.	Department.	Amount.	Train Miles Run.	Earnings per Train Mile.	Department.	Amount.	Cost per Train Mile.	Percentage to Earnings.	Department.	Amount.	Train Miles Run.	Earnings per Train Mile.
Expenses.	£	d.	%	Receipts.	£		d.	Expenses.	£	d.	%	Receipts.	£		d.	Expenses.	£	d.	%	Receipts.	£		d.
Locomotive	2,267	21-11	110-27	Coaching..	1,288	16,590	18-63	Locomotive	2,568	22-56	100-98	Coaching..	1,491	20,488	17-35	Locomotive	2,616	22-74	91-89	Coaching.	1,799	21,279	20-29
Per.-way ...	3,928	36-26	189-39	Goods	786	9,410	20-04	Per.-way ...	1,318	11-59	51-83	Goods ...	1,062	6,822	37-36	Per.-way ..	1,785	15-52	62-70	Goods ...	1,048	6,327	39-75
Traffic ...	780	7-20	37-61					Traffic ...	1,000	8-79	39-32					Traffic ...	1,158	10-07	40-67				
General ...	193	1-78	9-30					General ..	188	1-65	7-39					General ..	242	2-10	8-50				
	£ 7,188	66-35	316-57		£ 2,074	26,000	19-14		£ 5,074	44-59	199-52		£ 2,543	27,310	22-35		£ 5,801	50-43	203-76		£ 2,817	27,606	24-75
				Balance, loss on working, exclusive of interest.	5,114							Balance, loss on working, exclusive of interest.	2,331							Balance, loss on working, exclusive of interest.	2,954		
	£ 7,188				£ 7,188				£ 5,074				£ 5,074				£ 5,801				£ 5,801		
						£																	£
				Interest on Capital at 3½ per cent.		7,543		Interest on Capital at 3½ per cent.			7,530		Interest on Capital at 3½ per cent.		7,673		Interest on Capital at 3½ per cent.			7,673			
				Cost of working the line		7,188		Cost of working the line			5,074		Cost of working the line		5,801		Cost of working the line			5,801			
				Total cost for the year		14,731		Total cost for the year			12,604		Total cost for the year		13,474		Total cost for the year			13,474			
				Total traffic for the year		2,074		Total traffic for the year			2,543		Total traffic for the year		2,817		Total traffic for the year			2,817			
				LOSS ON THE YEAR'S WORKING		£12,657		LOSS ON THE YEAR'S WORKING			£10,061		LOSS ON THE YEAR'S WORKING		£10,627		LOSS ON THE YEAR'S WORKING			£10,627			

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Since the extension of the line from St. Leonards to Milson's Point on the 1st of May last, the earnings for the two months ending 30th June, 1893, were:—£1,457 19s. 3d. as against £394 0s. 5d. for May and June, 1892, but the capital has been increased by £197,464, and working expenses largely increased.

SECTIONAL EARNINGS—ARMIDALE TO JENNINGS, 132 miles $42\frac{3}{4}$ chains.

Years ending 31st December, 1890, 1891, and 1892.

1890. CAPITAL, £1,529,395.				1891. CAPITAL, £1,533,068.				1892. CAPITAL, £1,539,868.							
EXPENDITURE.		EARNINGS.		EXPENDITURE.		EARNINGS.		EXPENDITURE.		EARNINGS.					
Department.	Amount.	Cost per Train Mile.	Percentage to Earnings.	Department.	Amount.	Train Miles Run.	Earnings per Train Mile.	Department.	Amount.	Cost per Train Mile.	Percentage to Earnings.	Department.	Amount.	Train Miles Run.	Earnings per Train Mile.
Expenses.	£	d.	%	Receipts.	£		d.	Expenses.	£	d.	%	Receipts.	£		d.
Locomotive..	13,577	21·12	36·25	Coaching..	19,570	82,632	56·84	Locomotive	13,670	22·56	38·53	Coaching..	19,015	84,664	54·05
Per.-way ...	17,183	26·72	45·87	Goods ...	17,887	71,685	59·89	Per.-way ...	16,240	26·81	45·77	Goods.....	16,435	60,814	64·86
Traffic	6,420	9·98	17·14					Traffic	7,253	11·98	20·44	Traffic	7,310	9·36	19·63
General.....	1,148	1·78	3·06					General ...	1,001	1·65	2·82	General ..	1,640	2·10	4·41
	£	59·60	102·32		£	154,317	58·25		£	63·00	107·56		£	51·02	107·28
				Balance, loss on working, exclusive of interest	871			Balance, loss on working, exclusive of interest	2,634			Balance, loss on working, exclusive of interest	2,707		
	£				£				£				£		
	38,328				38,328				38,164				39,857		
Interest on Capital at 4 per cent.					01,175			Interest on Capital— { 127,756 at 3½ per cent. }					60,683		
Cost of working the line					38,228			Cost of working the line					39,857		
Total cost for the year					99,503			Total cost for the year					100,808		
Total traffic for the year.....					37,457			Total traffic for the year					37,150		
LOSS ON THE YEAR'S WORKING					£ 62,046			LOSS ON THE YEAR'S WORKING					£ 63,658		

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APPENDIX XXV—continued.

SECTIONAL EARNINGS—MURRUMBURAH TO BLAYNEY, 110 miles, 63 chains.

Years ending 31st December, 1890, 1891, and 1892.

1890. CAPITAL, £1,129,778.				1891. CAPITAL, £1,135,592.				1892. CAPITAL, £1,141,553.															
EXPENDITURE				EARNINGS.				EXPENDITURE.				EARNINGS.											
Department.	Amount.	Cost per Train Mile.	Percentage to Earnings.	Department.	Amount.	Train Miles Run.	Earnings per Train Mile.	Department.	Amount.	Cost per Train Mile.	Percentage to Earnings.	Department.	Amount.	Cost per Train Mile.	Percentage to Earnings.	Department.	Amount.	Train Miles Run.	Earnings per Train Mile.				
Expenses.	£	d.	%	Receipts.	£	d.		Expenses.	£	d.	%	Receipts.	£	d.	%	Expenses.	£	d.	%				
Locomotive..	19,416	21 11	44 91	Coaching..	16,319	77,292	50 77	Locomotive	22,354	22 56	60 07	Coaching..	16,567	77,788	51 14	Locomotive	16,286	22 74	42 80	Coaching..	15,714	70,719	49 14
Per-way ...	12,292	13 37	29 43	Goods ...	26,897	143,402	15 01	Per-way ..	12,327	12 45	33 45	Goods ...	20,278	159,945	30 43	Per-way ...	13,168	18 39	34 61	Goods ...	22,313	95,140	56 34
Traffic	6,958	7 56	16 00					Traffic	6,834	6 89	18 52					Traffic	6,240	8 71	16 40				
General ...	1,612	1 79	3 79					General ...	1,637	1 05	4 45					General ...	1,505	2 10	3 96				
	£ 40,368	43 83	93 22		£ 43,236	220,694	17 02		£ 43,142	43 55	117 00		£ 36,845	237,733	37 19		£ 37,193	51 94	97 77		£ 38,047	171,880	53 12
Balance, profit on working, inclusive of interest.	2,923							Balance, loss on working, exclusive of interest.	6,297				Balance profit on working, exclusive of interest.	818									
	£ 43,236				£ 43,236				£ 43,142				£ 38,017					£ 38,047					
						£																	
Interest on Capital at 3½ per cent						39,542		Interest on Capital at 3½ per cent															39,954
Cost of working the line						40,303		Cost of working the line															37,199
Total cost for the year						79,850		Total cost for the year															77,153
Total traffic for the year						43,236		Total traffic for the year															38,017
LOSS ON THE YEAR'S WORKING						£36,614		LOSS ON THE YEAR'S WORKING															£39,106

APPENDIX XXV—continued.

SECTIONAL EARNINGS—BLACKTOWN TO RICHMOND, 16 miles, 12 chains.
Years ending 31st December, 1891 and 1892.

1891.							
CAPITAL, £194,296.							
EXPENDITURE.				EARNINGS.			
Department.	Amount.	Cost per Train Mile.	Per-centage to Earnings.	Department.	Amount.	Train Miles Run.	Earnings per Train Mile.
Expenses.	£	d.	%.	Receipts.	£		d.
Locomotive	4,021	22 56	31·93	Coaching.....	6,495	26,823	58·11
Permanent-way	2,522	14·15	20·02	Goods	6,100	15,956	91·75
Traffic	3,234	18·14	25·63				
General.....	294	1·65	2·33				
Balance—Profit on working— exclusive of interest.....£	10,071	56·50	79·96		£ 12,595	42,779	70·66
	2,524						
	£ 12,595				£ 12,595		
Interest on Capital at 5 per cent.							£9,714
Cost of working the line							10,071
Total cost for the year.....							19,785
Total traffic for the year							12,595
							LOSS ON THE YEAR'S WORKING. £7,190

1892.							
CAPITAL, £196,125.							
EXPENDITURE.				EARNINGS.			
Department.	Amount.	Cost per Train Mile.	Per-centage to Earnings.	Department.	Amount.	Train Miles Run.	Earnings per Train Mile.
Expenses.	£	d.	%.	Receipts.	£		d.
Locomotive	3,955	22·74	31·35	Coaching	6,311	26,106	£8·02
Permanent-way	2,580	14·55	20·06	Goods	6,303	15,638	96·73
Traffic	3,438	19·76	27·26				
General.....	365	2·10	2·89				
Balance—Profit on working— exclusive of interest.....£	10,288	59 15	81 56		£ 12,614	41,744	72·52
	2,326						
	£ 12,614				£ 12,614		
Interest on Capital at 5 per cent.							£9,806
Cost of working the line							10,288
Total cost for the year.....							20,094
Total traffic for the year							12,614
							LOSS ON THE YEAR'S WORKING £7,480

APPENDIX XXV—continued.

SECTIONAL EARNINGS—WERRIS CREEK TO NARRABRI, 96 miles 48 chains.

Years ending 31st December, 1887, 1891, and 1892.

1887. CAPITAL, £610,234.				1891. CAPITAL, £649,681.				1892. CAPITAL, £677,182.								
EXPENDITURE.		EARNINGS.		EXPENDITURE.		EARNINGS.		EXPENDITURE.		EARNINGS.						
Department.	Amount.	Cost per Train Mile.	Percentage to Earnings.	Department.	Amount.	Train Miles Run.	Earnings per Train Mile.	Department.	Amount.	Cost per Train Mile.	Percentage to Earnings.	Department.	Amount.	Train Miles Run.	Earnings per Train Mile.	
Expenses.	£	d.	%	Receipts.	£		d.	Expenses.	£	d.	%	Receipts.	£		d.	
Locomotive	8,142	18 23	19 90	Coaching..	13,626	33,411	97 88	Locomotive	10,120	22 56	18 70	Coaching..	13,511	30,048	107 91	
Per-way ..	11,816	26 53	28 88	Goods ...	27,299	73,469	89 18	Per-way ..	11,689	26 06	21 50	Goods ...	40,611	77,617	125 57	
Traffic	9,853	22 12	24 07					Traffic	4,699	10 47	8 68					
General ..	1,651	3 71	4 03					General ...	741	1 65	1 37					
	£ 31,462	70 64	76 88		£ 40,925	106,880	91 90		£ 27,249	60 74	50 34		£ 30,651	50 43	45 64	
Balance, profit on working, exclusive of interest.	9,463							Balance, profit on working, exclusive of interest.	26,873				Balance, profit on working, exclusive of interest.	36,510		
	£ 40,925				£ 40,925				£ 54,122				£ 67,161			£ 67,161
Interest on Capital at 4 per cent.					£			Interest on Capital at *3½ per cent. and 4 per cent.	25,966			Interest on Capital at *3½ and 4 per cent.	27,067			£
Cost of working the line					24,409			Cost of working the line	27,249			Cost of working the line	30,651			
Total cost for the year... ..					55,871			Total cost for the year.....	53,215			Total cost for the year.....	57,718			
Total traffic for the year.....					40,925			Total traffic for the year	54,122			Total traffic for the year.....	67,161			
LOSS ON THE YEAR'S WORKING					£14,946			PROFIT ON THE YEAR'S WORKING	£907			PROFIT ON THE YEAR'S WORKING	£9,443			
								*£645,680 at 4 per cent.				*£673,182 at 4 per cent.				
								£3,991 at 3½ per cent.				£4,000 at 3½ per cent.				

APPENDIX XXV—continued.

SECTIONAL EARNINGS—DUBBO TO BOURKE, 225 miles 45 chains.

Years ending 31st December, 1890, 1891, and 1892.

1890. CAPITAL, £1,508,175.							1891. CAPITAL, £1,602,001.							1892. CAPITAL, £1,602,480.									
EXPENDITURE.				EARNINGS.			EXPENDITURE.				EARNINGS.			EXPENDITURE.				EARNINGS.					
Department.	Amount.	Cost per Train Mile.	Percentage to Earnings.	Department.	Amount.	Train Miles Run.	Earnings per Train Mile.	Department.	Amount.	Cost per Train Mile.	Percentage to Earnings.	Department.	Amount.	Train Miles Run.	Earnings per Train Mile.	Department.	Amount.	Cost per Train Mile.	Percentage to Earnings.	Department.	Amount.	Train Miles Run.	Earnings per Train Mile.
Expenses.	£	d.	%	Receipts.	£		d.	Expenses.	£	d.	%	Receipts.	£		d.	Expenses.	£	d.	%	Receipts.	£		d.
Locomotive..	29,936	21-12	22-64	Coaching..	31,376	99,842	75-42	Locomotive	32,699	22-56	18-60	Coaching..	40,908	70,703	138-86	Locomotive	24,336	22-74	15-43	Coaching..	40,849	110,741	87-45
Per.-way ..	45,868	32-29	34-61	Goods ..	101,134	241,104	100-67	Per.-way ..	24,650	17-02	14-02	Goods	134,909	277,050	116-87	Per.-way ...	25,530	23-86	16-19	Goods ...	117,300	146,105	192-70
Traffic	13,180	9-27	9-95					Traffic	14,748	10-18	8-39					Traffic	13,145	12-28	8-34				
General	2,537	1-78	1-91					General ..	2,394	1-65	1-36					General ...	2,247	2-10	1-43				
	£ 91,581	64-46	69-11		£ 132,510	340,946	93-28		£ 74,491	51-41	42-37		£ 175,817	347,753	121-34		£ 65,258	60-98	41-39		£ 157,658	256,846	147-32
Balance, profit on working, exclusive of interest. }	40,929							Balance, profit on working, exclusive of interest. }	101,326							Balance, profit on working, exclusive of interest. }	92,400						
	£ 132,510				£ 132,510				£ 175,817				£ 175,817				£ 157,658				£ 167,658		
<p>Interest on Capital at 4 per cent 60,327</p> <p>Cost of working the line 91,581</p> <hr/> <p>Total cost for the year 151,908</p> <p>Total traffic for the year 132,510</p>							<p>Interest on Capital— { £20,050, at 3½ per cent. } 63,979</p> <p>{ £1,581,951, at 4 per cent. }</p> <p>Cost of working the line 74,491</p> <hr/> <p>Total cost for the year 138,470</p> <p>Total traffic for the year 175,817</p>							<p>Interest on Capital— { £29,160, at 3½ per cent. } 63,952</p> <p>{ £1,573,320, at 4 per cent. }</p> <p>Cost of working the line 65,258</p> <hr/> <p>Total cost for the year 129,210</p> <p>Total traffic for the year 157,658</p>									
<p>LOSS ON THE YEAR'S WORKING £19,398</p>							<p>PROFIT ON THE YEAR'S WORKING £37,347</p>							<p>PROFIT ON THE YEAR'S WORKING £28,448</p>									

APPENDIX XXVI.

Report of the Tramway Locomotive Superintendent.

To the Secretary to the Railway Commissioners,—

Sir,

I have the honor to submit the following report as to the condition of the workshops, machinery, rolling stock, &c., for the year ending 30th June, 1893.

CITY AND SUBURBAN STEAM LINES.

Workshops and Machinery.

These have been efficiently maintained, and are now in a satisfactory condition.

Locomotive Engines.

No addition has been made to the stock during the past year. The following motors have been repaired during the year:—General overhaul, 55; intermediate overhaul, 100; repairs ranging from two to six days, 143; repainted and varnished, 119; and ten boilers were removed, two of which were renewed and eight thoroughly repaired; six new boilers have been completed out of working expenses, and ten more are in hand. The whole of the stock has been maintained in good order and the demands of traffic fully met, 77,104 train miles more than in the previous year having been run.

Cars, Trucks, &c.

Twelve additional cars have been supplied, and the following repairs have been executed during the year:—Repainted, 95; repaired and partially repainted, 201; thirty-two trucks have been passed through the shops and been thoroughly repaired. One sample Trail Car for the Ocean-street Cable Tramway, one Standard Car (Renewal), and one road watering tank have also been constructed.

NORTH SHORE CABLE TRAMWAY.

The cable referred to in my former report continued in service up to the 3rd December, 1892, and during the time it was in use (371 days) 74,926 train miles were run; a new cable was brought into use on the 4th December, and is now in excellent running condition.

The whole of the plant and rolling stock has been maintained in good condition. Eight cars (three dummies and five trailers) have been added to the stock to meet the expected increase of traffic from the extension of the present line, and the Military road section shortly to be opened.

PLATTSBURG TRAMWAY.

The engines on this line have been considerably improved, and the cars kept in fair working order. Four new cars have been added to the stock.

SANS SOUCI TRAMWAY.

The locomotive branch of this line was placed in my charge on the 1st May. The motors have been overhauled, and the traffic requirements fully met.

I have, &c.,

GEO. DOWNE,

Locomotive Superintendent.

Randwick, 22nd July, 1893.

APPENDIX XXVII.

Report of Tramway Engineer.

Tramway Department,
Office of Engineer for Tramways, July, 1893.

To the Secretary to the Railway Commissioners,—

Sir,—

I have the honor to submit my annual report on the condition of the Existing Tramways for the year ending 30th June, 1893.

During the year an extension of the Balmain line from Merton-street along Darling-street to Gladstone Park, a distance of 1 mile 8 chains, has been opened for traffic.

A portion of the Forest Lodge line, from the junction to the Glebe Town Hall, has been duplicated the length being 28 chains.

The roads have generally been well maintained, and less difficulty is now experienced in keeping the macadam in good repair since the adoption of hand-broken in preference to machine-broken metal.

In Devonshire-street 16 chains of single track has been re-cubed, and 42lb. rail-guards substituted for those originally laid down.

Phillip-street has also received special attention, the road having been re-spiked and having guard-rails put in.

Oxford-street, Paddington, from Dowling-street to Point Piper Road, a distance of 74 chains, has been relaid, and wood-paved from kerb to kerb, the whole of the work being carried out by this Branch, a proportion of the cost being borne by the Works Department and the Municipal Council. The levels of the street have been much improved, and advantage has been taken to lower the grades, and cut out or increase the radii of the curves.

In Moore Park, on the Randwick line, 62 chains of single track has been relaid with 60lb. T rails. This completes the relaying through the park, and we now have a first-class double track from the entrance to the park at Park Road to the Randwick Racecourse, a distance of 1 mile 52 chains.

Glebe Point Junction has also been relaid.

The aggregate length of sharp curves, &c., renewed is 20 chains.

Although a great deal has been done to relay and generally improve the condition of the Permanent-way, more will require to be done, especially in George-street West, and on the Newtown Road between Forbes-street and the Enmore terminus. Approval having already been given for this work, it will be carried out during the ensuing year.

On the North Shore cable line the work of strengthening the slot-rails has been extended. When completed, this line will be in very good order.

During the year a modification of the railway interlocking and electrical signalling apparatus has been brought into operation at the Newtown, Glebe, and Forest Lodge Junctions, the facing-points at all three junctions being controlled from one signal-box.

The appliance is working very satisfactorily, and a considerable saving is being effected over the previous method of working.

I have, &c.,
G. R. COWDERY,
Engineer for Tramways.

STATEMENT OF ACCOUNT OF THE EXPENDITURE AND REVENUE FOR YEAR 1893, WITH COMPARISONS FOR 1892 AND 1888.
DR. TRAMWAYS. CR.

EXPENDITURE.	YEAR ENDING JUNE 30, 1893.	CORRESPONDING PERIOD IN		REVENUE.	YEAR ENDING JUNE 30, 1893.	CORRESPONDING PERIOD IN	
		1892.	1888.			1892.	1888.
CITY AND SUBURBAN.	£	£	£	CITY AND SUBURBAN.	£	£	£
To MAINTENANCE OF WAY, WORKS, AND STATIONS	38,630	52,016	29,002	By PASSENGERS—			
LOCOMOTIVE POWER	102,388	110,080	116,367	FARES	271,026	279,315	215,355
CARS AND WAGGONS	19,514	10,718	13,678	MISCELLANEOUS RECEIPTS	15	186	5,705
TRAFFIC EXPENSES	45,934	46,666	41,469				
COMPENSATION	1,899	3,606	603				
GENERAL CHARGES	6,459	6,059	4,108				
	214,824	229,145	204,227		271,041	279,321	221,060
NORTH SHORE CABLE.				NORTH SHORE CABLE.			
To MAINTENANCE OF WAY, WORKS, AND STATIONS	1,007	910	920	By PASSENGERS—			
LOCOMOTIVE POWER	4,046	4,554	4,031	FARES	10,635	11,123	7,232
CARS AND WAGGONS	371	621	459	MISCELLANEOUS RECEIPTS			16
TRAFFIC EXPENSES	1,601	1,655	1,202				
COMPENSATION	25						
GENERAL CHARGES	148	162	221				
	7,198	7,902	6,833		10,635	11,123	7,248
NEWCASTLE AND PLATTSBURG.				NEWCASTLE AND PLATTSBURG.			
To MAINTENANCE OF WAY, WORKS, AND STATIONS	904	1,111	750	By PASSENGERS—			
LOCOMOTIVE POWER	5,824	5,499	4,136	FARES	12,549	13,691	8,085
CARS AND WAGGONS	678	702	287	MISCELLANEOUS RECEIPTS		5	126
TRAFFIC EXPENSES	2,500	2,487	2,843				
COMPENSATION		148					
GENERAL CHARGES	118	90	120				
	10,024	10,037	8,136		12,549	13,696	8,211
ASHFIELD TO ENFIELD.				ASHFIELD TO ENFIELD.			
To MAINTENANCE OF WAYS, WORKS, AND STATIONS	360	310		By PASSENGERS—			
LOCOMOTIVE POWER	982	726		FARES	1,142	950	
CARS AND WAGGONS	57	10					
TRAFFIC EXPENSES	311	233					
COMPENSATION	30	216					
GENERAL CHARGES	22	12					
	1,762	1,507					
TOTAL WORKING EXPENSES £	233,808	248,591	219,196				
BALANCE, NET PROFIT £	61,559	56,499	17,323				
GRAND TOTAL £	295,367	305,090	236,519	GRAND TOTAL £	295,367	305,090	236,519

THOMAS HALL,
Chief Accountant.

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APPENDIX XXIX.

SCHEDULES under Working Expenses for the Year ending 30th June, 1893, with comparisons for 1892 and 1888.

CITY AND SUBURBAN TRAMWAYS.

Branches.	Year ending June 30,			Branches.	Year ending June 30,		
	1893.	Corresponding period in			1893.	Corresponding period in	
	£	£	£		£	£	£
Maintenance of Way and Works.				Traffic Expenses.			
Salaries, office expenses, and general superintendence.....	1,014	1,303	580	Traffic Manager's office and staff	1,958	1,713	2,131
Maintenance and renewals of permanent way, viz. :	£23,138	31,418	17,304	Clerks	1,209	1,212	922
{ Wages		19,005	9,332	Staffmen, pointsmen, and flagmen	6,085	6,176	5,833
{ Materials	14,096			Conductors	23,915	24,001	19,433
Repairs, &c., of bridges, culverts, and other works.....	45	82	464	Car-cleaners, shunters, and lamp-trimmers	4,856	5,100	5,393
Repairs, &c., of waiting-sheds and buildings.....	272	207	1,045	Stores	2,414	2,824	1,833
Sundries.....	65	1	277	Advertising, printing, and stationery	1,422	1,276	317
				Travelling and incidental.....	328	273	215
	£ 38,630	52,016	29,002	Sundries	3,747	4,091	5,392
Locomotive Power.				Compensation.			
Locomotive superintendence and clerks	£1,925	1,680	3,925	For personal injury	1,070	2,918	603
Locomotive foremen and Clerks	1,729	1,723	860	For damage to vehicles, &c.....	229	683	.....
Locomotive drivers and firemen	45,079	44,307	37,528		£ 1,899	3,606	603
Locomotive cleaners, coalmen, and labourers.....	9,164	8,867	10,724	General Expenses.			
Locomotive sundries	2,352	2,471	7,007	Commissioners	624	643	207
Coal, coke, and wood	10,737	16,059	11,818	Secretary's office.....	640	303	553
Water	1,644	2,139	1,104	Accountant's office.....	921	590	553
Oil, tallow, and waste	2,716	3,681	2,270	Audit office	1,563	1,512	1,040
Stores for cleaners	551	562	469	Stores office	378	560	1,196
Repairs and renewals of engines.....	£21,448	23,069	32,350	Sundries†	2,333	2,361	559
{ Wages		5,210	7,312		£ 6,459	6,059	4,108
{ Materials	5,043				£ 214,824	229,145	204,227
Repairs, electric motors and machinery { Wages		230	.....	GRAND TOTAL.....			
{ Materials		82	.....		£ 214,824	229,145	204,227
	£ 102,388	110,080	115,367				
Cars and Waggons.							
*Greasing and oiling { Wages	256	220	236				
{ Materials	213	153	121				
Car repairs..... { Wages	6,685	5,922	9,604				
{ Materials	12,244	4,317	3,559				
Waggon repairs { Wages	72	75	97				
{ Materials	44	31	61				
	£ 19,514	10,718	13,678				

* Traffic Charge. † Includes commission on sale of tickets which was formerly deducted from earnings, amounting to £2,115 in 1892, and £2,007 in 1893.

APPENDIX XXX.

SCHEDULES under Working Expenses for the Years ending 30th June, 1893 and 1892.

ASHFIELD TO ENFIELD TRAMWAY.

BRANCHES.	Year ending June 30, 1893.	From 23rd September, 1891, to 30th June, 1892.	BRANCHES	Year ending June 30, 1893	From 23rd September, 1891, to 30th June, 1892.
Maintenance of Way and Works.			Traffic Expenses.		
Salaries, office expenses, and general superintendence.....	9	6	Traffic Manager's office and staff	15	13
Maintenance and renewals of permanent way, viz. : { Wages..... £293	.....	244	Staffmen, pointsmen, and flagmen .....	.....	2
Materials.. 58	351	60	Conductors	279	207
			Stores	7	5
			Advertising, printing, and stationery	6	2
			Sundries	4	4
	£ 360	310		£ 311	233
Locomotive Power.			Compensation.		
Locomotive superintendence and clerks	15	7	For personal injury	30	6
Locomotive drivers and firemen	494	363	For damage to vehicles, &c. ....	.....	210
Locomotive cleaners, coalmen, and labourers.	112	84		£ 30	216
Locomotive sundries	5	12			
Coal, coke, and wood	150	128			
Water	24	20			
Oil, tallow, and waste.....	26	30			
Stores for cleaners	10	7			
Repairs and renewals of engines	{ Wages £112	50			
	{ Materials.. 34	16			
	146				
	£ 982	726			
Cars and Waggon.			General Expenses.		
Greasing and Oiling { Wages.....	1	.....	Proportion of General Expenses	19	10
Materials	3	Stores office	3	2
Car repairs..... { Wages..... £15	5		£ 22	12
Materials	38	5			
	53				
	£ 57	10			
			GRAND TOTAL.....	£ 1,762	1,507

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APPENDIX XXXI.

SCHEDULES under Working Expenses for the Year ending the 30th June, 1893, with Comparisons for 1892 and 1888.

NORTH SHORE CABLE TRAM.

	Year ending	Corresponding period in			Year ending	Corresponding period in	
	June 30,	1892.	1888.		June 30,	1892.	1888.
	1893.				1893.		
	£	£	£		£	£	£
Permanent Way Branch.				Cars and Waggon.			
Maintenance of Way:—				Repairs and Renewals to Carriages and Dummies	266	560	414
Superintendence and Office Expenses	21	24	12	Repairs and Renewals of Grippers	105	61	45
Repairs and Renewals of Buildings .....	.....	2	159	£	371	621	459
Repairs and Renewals of Line, Sidings, &c.	985	884	749				
Sundries .....	.....	.....	.....	Traffic Branch.			
£	1,007	910	920	Management and Office Expenses	60	85	.....
Locomotive Branch.				Repairs and Renewals of Furniture, Fittings, Implements, and Stores	18	10	4
GENERAL EXPENSES.				Fuel and Lighting	53	54	27
Superintendence and Office Expenses	367	364	43	Wages of Clerks, Conductors, &c	1,231	1,260	1,071
Repairs and Renewals of Machinery, Tools, and Implements	7	4	68	Sundries	147	131	20
Lighting Buildings and Depôts	57	64	84	Cleaning Grooves	92	115	80
Sundries	240	147	79	£	1,601	1,655	1,202
£	671	579	274	Compensation.			
RUNNING EXPENSES.				For personal injury	25	.....	.....
Wages of Grippemen and Stationary Engine-drivers	1,491	1,481	1,359	General Charges.			
Wages of Cleaners, Firemen, Pulley-oilers, and Running Shed Labourers	175	150	278	Proportion of General Establishment	74	50	38
Cost of Fuel	540	622	676	Store Expenses	14	23	63
Running Stores for Engines or Cables, exclusive of Fuel	123	159	160	Sundries	60	75	120
Cost of Water	80	81	38	£	148	162	221
Sundries	77	70	.....	GRAND TOTAL.....			
£	2,486	2,563	2,541		7,198	7,902	6,833
REPAIRING EXPENSES.							
Repairs and Renewals of Stationary Engines	28	43	74				
Repairs and Renewals of Cable	584	1,180	885				
Repairs and Renewals of Running Gear and other Cable Fittings	277	186	175				
Repairs and Renewals of Water-supply Pipes, &c. ....	.....	3	3				
£	889	1,412	1,137				
Total, Locomotive Expenses	£	4,046	4,554	4,031			

APPENDIX XXXVII.

SCHEDULES under Working Expenses for the Year ending the 30th June, 1893, with comparisons for 1892 and 1888.

PLATTSBURG TRAMWAY.

BRANCHES.	Year ending June 30, 1893.	Corresponding period in		BRANCHES.	Year ending June 30, 1893.	Corresponding period in	
		1892.	1888.			1892.	1888.
Maintenance of Way and Works.	£	£	£	Cars and Waggon's.	£	£	£
Salaries, office expenses, and general superintendence	55	38	1	*Greasing and oiling { Wages	23	21	..
Maintenance and renewals of permanent way, viz.: { Wages	792	951	582	{ Materials	11	17	28
{ Materials	45	108	131	Car repairs { Wages	501	502	175
Repairs, &c., of bridges, culverts, and other works .....	.....	.....	27	{ Materials	143	162	84
Repairs, &c., of waiting-sheds and buildings.....	12	14	3	£ 678	70	287	
Sundries.....	.....	.....	6	Traffic Expenses.			
£ 904	1,111	750		Traffic Manager's office and staff	96	135	160
Locomotive Power.				Clerks	306	296	.....
Locomotive superintendent and clerks	95	119	47	Staffmen, pointsmen, and flagmen	512	457	1,218
Locomotive foreman	277	240	.....	Conductors	1,187	1,168	673
Locomotive drivers and firemen	2,189	2,108	1,422	Car-cleaners, shunters, &c.	101	118	517
Locomotive cleaners, coalmen, and labourers	613	544	677	Stores	127	155	72
Locomotive sundries	74	51	26	Advertising, stationery, and printing	16	32	8
Coal, coke, and wood	571	664	791	Travelling and incidental	6	7	.....
Water	49	65	13	Sundries	149	119	195
Oil, tallow, and waste.....	127	179	94	£ 2,500	2,487	2,843	
Stores for cleaners	25	31	43	Compensation.			
Repairs and renewals of engines { Wages.....	1,476	1,149	940	Personal injury .....	.....	148	.....
{ Materials	323	259	83	General Charges.			
£ 5,824	5,499	4,136		Proportion of general establishment	106	71	50
				Store expenses	11	19	66
				Sundries	1	4
				£ 118	90	120	
				GRAND TOTAL.....	£ 10,024	10,037	8,136

* Traffic charges.

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APPENDIX XXXIII.
City and Suburban Lines.—Rolling Stock Tramways.

Year ending	Total Stock.				RENEWALS OUT OF WORKING EXPENSES.			
	Motors.	Cars.	Goods trucks.	Water tanks.	Motors.	Cars.	Goods trucks.	Water tanks.
31 December, 1879.....	4	6	.....	.....	Nil.	Nil.	.....	.....
31 " 1880.....	10	20	.....	.....	"	"	.....	.....
31 " 1881.....	29	47	.....	.....	"	"	.....	.....
31 " 1882.....	46	83	4	.....	"	"	Nil.	.....
31 " 1883.....	57	99	4	.....	"	"	"	.....
31 " 1884.....	75	108	13	2	"	"	"	Nil.
31 " 1885.....	95	108	16	2	"	"	"	"
31 " 1886.....	96	127	16	2	"	1	"	"
31 " 1887.....	88	114	14	3	"	Nil.	"	"
30 June, 1888.....	88	125	14	3	"	"	"	"
30 " 1889.....	88	129	14	3	"	10	"	"
30 " 1890.....	88	146	14	4	"	31	"	1
30 " 1891.....	95	180	14	5	4	15	"	"
30 " 1892.....	108	193	14	5	.....	.....	.....	.....
30 " 1893.....	108	205	14	5	.....	20	.....	.....

TOTAL Electric Rolling Stock, 30th June, 1893.

Year ending	Motor Cars.
30 June, 1892	3
30 " 1893	3

North Shore Cable Tramway.

Year ending	Total Stock.		
	Dummies.	Cars.	Total.
31 December, 1886	8	8	16
31 " 1887	8	8	16
30 June, 1888	8	8	16
30 " 1889	8	10	18
30 " 1890	8	14	22
30 " 1891	8	14	22
30 " 1892	10	18	28
30 " 1893	13	23	36

Plattsburg Tramway.

Year ending	Motors.	Cars.	Trucks.	Total.
30 June, 1889	8	18	2	28
30 " 1890	8	18	2	28
30 " 1891	11	18	2	31
30 " 1892	13	20	2	35
30 " 1893	13	24	2	39

APPENDIX XXXIV.

RETURN of the total Amount paid for Wages on the different Branches of the Tramways, year ending 30th June, 1893, 1892, and 1888.

Branches.	1893.	1892.	1888.
TRAMWAYS.—	£	£	£
Maintenance Branch	25,323	35,246	30,824
Locomotive "	95,524	93,778	97,751
Traffic "	36,805	40,341	31,087
TOTAL, TRAMWAYS.....£	157,652	169,365	159,662

NOTE.—Includes all wages paid by the Department, whether on maintenance or new works.

APPENDIX XXXV.

STATEMENT showing the cost of Construction and cost per Mile open on different Sections of the City and Suburban Tramway Lines on the 30th June, 1893.

Particulars.	Length in Miles.	Total Cost.	Cost per Mile.
Railway Station to Bridge-street	1½	£ 94,917	£ 54,238
Liverpool-street to Randwick and Coogee.....	5½	112,671	21,461
Darlinghurst Junction to Waverley and Woolshra	4½	58,891	13,857
Waverley to Bondi Beach	1½	25,419	14,525
Waverley to Randwick.....	1½	11,525	7,683
Crown-street Junction to Cleveland-street	¾	16,069	21,425
Railway Station to Glebe and Forest Lodge	2½	39,749	17,666
Newtown (Glebe Junction) to Dulwich Hill	4½	58,284	13,714
Forest Lodge Junction to Leichhardt and Five Dock	5	56,030	11,206
Railway Station Junction to Botany	6½	90,787	13,450
Forest Lodge to Balmain.....	1½	23,686	13,535
Newtown Bridge to St. Peters.....	¾	12,336	16,448
Rudfern to Moore Park	1	18,524	18,524
Balmain (Merton-street) to Gladstone Park.....	1	4,660	4,660
Average cost of Construction	38	623,518	16,400
Tramway Workshops		£55,261	
Rolling Stock.....		253,703	
Machinery		13,150	
Furniture		2,113	
		324,227	
	38	947,775	24,941

APPENDIX XXXVI.

RETURN of the Number of Passenger Fares collected, Earnings and Working Cost, Total and per train mile, Percentage Working Cost to Earnings, Capital Invested, and Interest on Capital returned by the City and Suburban Tramways for each year from 1879 to 1893 inclusive.

Year.	Length of Line.	Number of Passenger Fares collected.	Car mileage.	Total Earnings.	Working Expenses.	Earnings per Car Mile.	Working Cost per Car Mile.	Percentage of Working Cost to Gross Earnings.	Net Earnings.	Capital invested on lines open.	Interest on Capital.
1879*	Miles. 1½	443,341	13,270	£ 4,416	£ 2,278	70.87	41.10	51.59	£ 2,138	£ 22,269	33.00
1880	4	2,086,897	84,074	18,980	13,444	54.18	38.38	70.83	5,536	60,218	12.34
1881	9½	7,090,125	296,906	62,549	52,107	50.56	42.12	83.31	10,442	169,450	6.16
1882	22	15,269,100	670,649	126,202	103,136	45.16	36.91	81.72	23,066	412,561	6.80
1883	25	25,684,285	1,076,096	190,699	178,877	42.53	39.80	93.80	11,822	544,105	2.22
1884	27½	30,202,303	1,242,491	219,942	215,167	42.48	41.56	97.83	4,775	643,111	0.76
1885	27½	39,594,753	1,220,500	223,340	207,995	43.91	40.90	93.13	15,345	708,109	2.17
1886	27½	52,977,578	1,222,043	226,367	201,737	44.42	39.59	89.12	24,630	742,113	3.37
1887	29½	50,108,256	1,220,026	214,125	201,468	42.12	39.63	94.08	12,657	731,582	1.76
1888	29½	51,563,197	1,246,543	221,060	204,227	42.56	39.32	92.38	16,833	742,555	2.22
1889	29½	52,810,026	1,338,386	225,833	206,092	40.49	36.95	91.25	19,741	771,255	2.56
1890	30½	57,463,650	1,474,616	249,508	207,517	40.60	36.46	83.17	41,991	790,555	5.31
1891	33½	62,676,636	1,553,048	270,365	221,505	41.78	34.23	81.92	48,860	857,455	5.74
1892	37	65,299,063	1,613,443	279,321	229,145	41.55	34.09	82.04	50,176	932,907	5.54
1893	38	63,588,885	1,681,232	271,041	214,824	38.60	30.67	79.26	56,217	947,775	5.94

* The line was opened for three and a half months only in 1879, and for part of this period was worked with horse-power.
 † Up to the year 1885, 3d. cash fares and 2d. tickets were counted as single fares; from 1886, inclusive, all tickets issued were at 1d. values, and cash fares paid are in this Return calculated at same rate.

APPENDIX XXXVII.
TRAMWAYS.

RETURN of the number and nature of Accidents, and the Injuries to Life and Limb, which occurred on the Tramways from 1st July, 1892, to 30th June, 1893.

Date.	Servants of Department.		Passengers.		Other than Passengers.		Nature of Accident.
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	
1892.							
4 July				1			Passenger's arm broken; leaving car in motion.
6 "				1		1	Man injured; wheel of cab caught in rail groove.
16 "				1			Passenger's toes crushed; leaving car in motion.
26 "				1			Passenger's arm broken; leaving car in motion.
2 August				1			Passenger's arm injured; fell from car.
10 "					1		Trying to enter car in motion.
20 "				1			Passenger slightly injured; fell from car.
4 September				1			Passenger's foot crushed; leaving car in motion.
11 November				1			Passenger's leg cut off; entering car in motion.
15 "					1		Child killed; ran in front of car.
2 December				1			Passenger slightly injured—leaving tram in motion.
4 "						4	Slightly injured; buggy collided with tram.
14 "						1	Man slightly injured; cab broke down on line.
27 "						1	Man slightly injured; cab broke down on line.
1893.							
14 January						1	Man's arm broken; knocked down by motor.
18 March	1						Fireman killed; shunting cars, Moore Park.
3 May					1		Man killed; trying to enter car in motion.
25 "				1			Passenger's toes crushed; leaving car in motion.

APPENDIX XXXVIII.
TRAMWAYS.

PERMANENT-WAY Materials, Rails for Renewals, and Miscellaneous Articles Imported for the Tramways during year ending 30th June, 1893.

Date of Arrival.	Name of Ship.	Description of Material.	Supplied by	Weight.	Rate.	Invoice Cost.	Freight.	English Charges	Colonial Charges	Total Cost.	Cost Per Ton or Article.
1892.											
17 Aug.	Granite State	500 diaphragm rubbers	Eames Vacuum Co.	T. c. q. lb.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
17 "	"	500 rubber gaskets	"	"	"	833 18 11	1 0 3	24 3 0	0 2 8	850 4 10	1 14 4½
17 "	"	24 standard steam mufflers	"	"	"	"	"	"	"	"	"
24 "	Murrumbidgee	2 pressure cylinders	R. Herbert Lapage	1 8 3 12	75 0 0	150 0 0	1 7 1	2 11 0	1 4 9	155 2 10	77 11 5
4 Sept.	Hubbuck	112 motor taps	Joseph Whitworth & Co.	"	26 0 0	0 10 0	0 10 0	0 10 0	0 9 1	37 16 4	0 6 9
"	Belliant	6 firchole plates	William Foster & Co.	0 12 0 0	60 7 6	36 4 0	0 4 6	0 11 0	0 6 9	37 6 9	62 4 7
"	"	6 wrapper	"	0 18 0 2	66 7 6	59 15 11	0 12 0	0 18 9	0 12 2	61 18 10	68 16 6
"	"	6 tube	"	1 14 0 2	60 7 6	97 13 5	1 12 0	1 11 4	1 0 5	101 17 2	50 18 4
"	"	1200 S.D. brass tubes	J. Wilks, Son, Mapplebeck	6 14 0 14	0 0 6½	353 7 0	4 14 3	5 18 8	3 17 9	397 18 2	0 6 7½
24 Oct.	Sophocles	87 iron plates	Shelton Steel Co.	6 10 3 18	8 5 0	54 0 0	3 7 1	1 2 2	1 2 1	69 11 4	0 1 11
8 "	Britannia	Hob-nails	Nettlefold & Son	2 0 0 0	0 14 6	29 0 0	1 7 11	0 15 5	0 6 1	31 0 5	15 14 8½
8 "	Earl of Cardigan	85 bars steel	The Steel Co., Scotland	2 0 1 0	9 10 0	18 12 0	2 0 9	0 11 7	0 7 0	21 11 7	10 15 10
31 "	Warnambool	24 plates to tracing	Williams, Foster, & Co.	4 8 3 8	57 12 0	253 18 5	2 14 0	4 1 0	2 15 7	265 9 0	59 16 6
31 "	"	12 "	"	1 14 2 12	63 12 6	130 1 11	1 7 0	1 34 9	1 10 11	114 14 7	66 10 4
20 "	Victoria	Hob-nails	Nettlefold & Son	6 0 0 0	0 14 6	87 0 0	4 3 10	1 12 1	1 19 3	94 15 2	16 15 10½
1893.											
25 Jan.	Fifeshire	54 B.O. plates	The Steel Co., Scotland	12 2 0 14	9 7 6	110 13 2	7 19 0	1 19 0	4 1 8	124 12 10	10 5 9
27 Mar.	Port Hunter	15600 ft. wire rope for cables	T. W. Smith	"	"	"	"	"	"	"	"
27 "	"	1000 ft. "	"	"	"	"	"	"	"	"	"
18 "	Wilcannia	50 wheels and tyres—motor	Vickers & Sons	11 13 1 4	32 16 0	379 1 10	7 13 1	7 17 7	5 19 2	400 11 8	per pair.
13 "	"	1200 loco brass tubes 3½ qual 1½ x 10/11 x 5' 5"	Allen Everett	0 13 1 6	0 0 6½	333 16 1	8 12 2	8 15 7	4 15 4	500 16 4	0 6 6½
13 "	"	600 loco. brass tubes 3½ qual. 1½ x 10/11 x 5' 5"	"	2 16 0 21	0 0 6½	176 19 10	2 17 4	"	"	"	"
13 "	"	100 steel plates	Shelton Iron Co.	7 7 3 10	8 2 6	60 1 2	4 17 0	1 10 0	1 3 7	67 11 0	0 2 1½
27 "	Port Hunter	2 casks copper rivets ¾" x 2"	Williams, Foster	0 10 0 0	82 0 0	41 0 0	0 10 6	1 2 5	0 7 4	43 0 3	80 0 6
9 April	Thermopylae	100 cast-steel tyres, 2' 5½"	Vickers & Sons	13 15 2 11	1 12 0	447 16 11	9 1 0	8 15 1	4 9 0	470 2 0	4 14 0
8 "	Bungaree	100 "	"	13 14 0 19	32 10 0	445 16 6	8 19 11	9 4 2	6 15 5	470 10 0	4 14 1½
8 "	"	19 tube plates	Nevill, Druce, & Co.	1 9 0 2½	62 13 6	91 11 3	1 1 10	2 2 7	1 1 2	96 10 9	66 15 9
Various dates.	Various	406 cast-steel wheels	Hadfield Co.	26 5 2 7	9 14 6	972 5 0	14 13 4	15 16 3	14 4 0	1,017 3 7	2 10 10½
"	"	700 "	"	46 1 3 10	9 0 0	1,575 0 0	30 5 2	233 6 0	25 8 8	81,663 19 10	2 7 6½

Indent for Material for 42-lb. S.T. Tramway Rails.

1892.	27 Oct.	Echuca	35000 fish-bolts	Patent Nut and Bolt Co.	9 7 0 0	18 0 0	168 6 0	6 15 8	1 19 7	2 4 7	179 5 10	19 3 5
"	9 "	Gulf of Venice	5000 steel fish-plates	Darlington Co.	14 1 3 19	9 9 3	133 7 8	10 6 11	0 28 7	2 10 2	147 2 4	10 8 8

Indent for Material for 71½-lb. Tramway Rails.

1893.	17 May.	Culgoa	6000 Ibbotsons nuts and fish-bolts, 7½" x 3½"	Ibbotson Bros.	8 10 1 6	1 1 0	73 16 5	2 8 3	0 13 8	0 15 8	77 14 0	23 4 0
"	17 "	"	4000 intermediate bolts and nuts, 7½" x 2½"	"	2 0 1 17	1 1 0	42 8 5	1 8 6	0 7 10	0 9 11	44 14 8	22 7 4

Indent for Material for 60-lb. Tramway Rails.

1893	17 May.	Culgoa	8000 nuts and fish-bolts, 12" x 3½"	Ibbotson Bros.	8 15 1 23	1 4 0	90 10 11	2 18 0	0 16 10	0 19 11	95 6 2	23 8 3½
"	17 "	"	4000 intermediate bolts, 12" x 2½"	"	1 12 0 0	1 4 0	38 8 0	1 4 0	0 7 2	0 8 3	40 7 5	25 4 7½
"	17 "	"	20000 intermediate bolts, 12" x 4½"	"	10 14 1 5	1 4 0	257 3 1	7 10 0	3 0 11	2 0 6	270 4 3	25 5 0½
"	22 "	Austral	96 c.-s. or 4000 fish-plates	Darlington Co.	18 9 2 16	6 14 0	123 16 7	12 10 6	1 2 0	2 11 8	140 9 0	7 12 3½

APPENDIX XXXIX.

NEW SOUTH WALES GOVERNMENT TRAMWAYS.

RETURN showing the Appointments of Tramway Employés from 1st July, 1892, to 30th June, 1893.

Date.	Name.	Position.	Rate.	Remarks.
1892. TRAMWAYS—LOCOMOTIVE BRANCH.				
12 July	Lamont, John B.	Cleaner	4/6 per day	Vice J. Pollitier.
12 "	McNamara, Ernest E.	Apprentice	10d.	Vice A. Callender.
14 "	Clarke, Henry J.	Shop-boy	2/6	Vice T. Rogers.
22 "	Roberts, James	Painter	8/-	From Supernumerary Staff
22 "	Kelly, John	Cleaner	6/-	"
2 Aug.	McKay, Archibald	Apprentice	10d.	Vice G. Heydon.
10 "	Benn, Henry	Shop-boy	2/6	Vice G. Olde.
15 "	Lancaster, Alfred	Labourer	6/6	Vice G. Clarke.
16 "	Smith, William V.	"	6/6	Vice T. Crowe.
22 "	Kyle, Hugh	Shop-boy	2/6	Vice J. Konyon.
1 Sept.	Hager, John P.	Labourer	6/6	Vice J. Jarvis.
9 "	Clumpson, Charles F.	Apprentice	10d.	Vice A. Boxall.
16 "	Fletcher, Charles B.	Cleaner	5/6	From Supernumerary Staff.
16 "	Stead, William	"	6/-	"
16 "	Mois, Leonard	"	6/-	"
16 "	Dash, Benjamin D.	"	6/-	"
16 "	Melketoohn, John B.	"	4/6	"
16 "	Gooch, Robert	"	5/6	"
16 "	Coleman, Albert E.	"	6/-	"
16 "	Tinnus, Alfred W.	"	6/-	"
16 "	Lambert, Frederick	"	5/6	"
16 "	Peglar, Herbert	"	6/-	"
16 "	Bedford, Edwin	"	6/-	"
16 "	Cook, James T.	"	6/-	"
16 "	Brown, Richard	Shop-boy	1/9	"
16 "	Lvons, James A.	"	2/3	"
20 "	Heydon, G. T.	Cleaner	5/6	Vice R. Hinson.
22 "	Trevillian, Thomas	"	7/6	Vice W. Tubby.
27 "	Atkinson, Archibald	Fireman	7/6	From Railways
27 "	Thomas, Phillip	"	7/6	"
27 "	Dawson, Alexander	"	7/6	"
27 "	Morris, James	"	7/6	"
27 "	South, Henry	"	7/6	"
27 "	Quinn, Henry	"	7/6	"
27 "	Warton, Charles E.	"	7/6	"
27 "	Kendrigan, Ernest	"	7/6	"
27 "	Thompson, John	"	7/6	"
27 "	Crawford, Alfred	"	7/6	"
27 "	Lehane, Patrick	"	7/6	"
4 Oct.	Murphy, Alexander	Labourer	7/-	Vice A. Sales.
6 "	Olde, George A.	Shop boy	4/-	Vice P. Gattenhoff.
8 "	Ryan, James	Cleaner	5/6	From Traffic Branch, Railways.
9 "	Aeres, Randall	Fireman	7/6	From Railways.
11 "	Martin, Henry J.	Cleaner	6/-	From Traffic Branch.
24 "	Aldrich, Robert	Shop boy	2/-	Vice H. Benn.
29 "	Hardy, Robert	"	10/-	Transferred from Supernumerary Staff.
29 "	Merrifield, Albert R.	Cleaner	6/-	Vice P. Quinn.
31 "	Harland, Thomas	Fireman	8/-	From Railways, vice J. Hollingsworth.
1 Nov.	Catford, Charles E.	Cleaner	4/6	From Traffic Branch, Railways.
19 "	Meadows, James	"	4/6	From Traffic Branch, Railways, vice J. Tinsley.
19 "	Montgomery, John	"	4/6	From Traffic Branch, Railways.
23 Dec.	Robins, Reuben	"	6/6	Vice C. Shepherd.
23 "	Cunningham, William	Fireman	7/6	Transferred from Supernumerary Staff.
23 "	Stable, David	"	7/6	"
23 "	Botterill, John	"	7/6	"
23 "	Shupe, Charles	"	7/6	"
23 "	Fairbairn, Joseph H.	Cleaner	6/-	"
23 "	Tidswell, Percy	"	6/-	"
23 "	Hazzard, George	Boy Labourer	4/-	"
23 "	Monro, Robert G.	"	3/-	"
23 "	Weaver, William	Cleaner	6/-	"
23 "	Swan, George A.	"	6/-	"
23 "	McVie, Alfred E.	"	5/6	"
23 "	Irwin, Michael	"	5/6	"
23 "	Stephenson, Thomas W.	"	6/-	"
1893.				
4 Jan.	Holden, Edward A.	Draftsman	£130 per annum	From Railways.
13 "	Wenne, Ernest C.	Shop boy	2/3 per day	Vice C. Hodgson.
7 Mar.	Rice, William	Fuelman	6/6	Re-employed, vice R. Robins.
8 "	Egan, Patrick	Labourer	6/6	From Railways, vice A. Woodford.
9 "	Dennison, Oliver	"	6/6	Re-employed, vice W. Smith.
10 "	Perkes, Thomas	Driver	11/-	From Railways, vice E. Gates.
17 "	Cooper, Percy	Cleaner	7/6	From Traffic Branch, Tramways, vice J. M'Stravick.
20 "	Insell, William	Labourer	6/6	Vice G. Heydon.
25 "	O'Connell, William	Boy labourer	3/-	Vice F. Woyman.
17 April	Anderson, Henry W.	Apprentice	10d	Vice C. F. Chapman.
20 "	Clarke, John H.	Shop Boy	1/9	Vice J. Bell.
24 "	Hurst, Alfred	"	3/-	Vice A. Irvine.
1 May.	Coleman, George	Cleaner	7/6	From Railways.
18 "	Miller, Frederick	"	7/6	"
18 "	Dowling, John H.	"	7/6	"
26 "	Aldrich, Mrs	Office Cleaner	20/- per week	Vice Mrs. Dunne
11 June	Harrison, Sydney	Shop Boy	3/- per day	From Railways, vice S. Harrison.
16 "	Waters, Edward	Labourer	6/6	Vice Patrick Egan.
20 "	Caldwell, George D.	Shop Boy	5/-	Vice Henry Smith.
1892. TRAMWAYS—TRAPPEE BRANCH.				
2 July	Plewman, James	Conductor	8/- per day	From Railways, vice A. Flanders.
8 "	Kenny, John	Junior conductor	7/-	vice J. Garnett.
12 "	Cowley, John	"	6/6	"
12 "	Hurdie, Robert	"	7/-	Re-employed.
12 "	Campbell, William	"	5/-	"
12 "	Vennerssch, Adolphus	"	6/-	"
14 "	Carleton, Thomas	"	6/6	"
14 "	Kidd, David B.	"	6/-	"
14 "	Martin, Henry J.	"	5/6	"
14 "	A-He, Ernest W.	"	5/-	"
14 "	Stevens, William	"	7/-	"
14 "	McAnulty, John	"	7/-	"
15 "	Love, George	"	6/6	"
15 "	Garrick, John	"	5/6	"
18 "	Ashworth, Herbert	"	5/6	"
18 "	Humbly, Arthur C.	"	6/6	From Railways.
18 "	Dobson, Robert	"	5/-	Re-employed.
19 "	Garrard, George J.	"	6/6	From Railways.
19 "	Donnellan, Michael	"	5/6	Re-employed.
19 "	Howe, Martin	"	7/-	From Railways.
20 "	McClellan, Horatio	"	6/6	Re-employed.
20 "	Stuart, Richard	"	5/6	"
25 "	Keene, William T.	"	7/-	From Railways.
26 "	Davies, William	"	7/-	"

APPENDIX XXXIX—continued.

Date.	Name.	Position.	Rate.	Remarks.
1892. TRAMWAYS—TRAFFIC BRANCH—continued.				
2 Aug.	Turner, Sydney G.	Junior Conductor	7/6 per day	From Railways.
2 "	Derbin, John	"	7/-	"
10 "	Garnett, John	"	7/-	"
15 "	Hetherington, John	"	7/-	"
27 "	O'Connor, John	Car cleaner	6/6	Re-employed, <i>viz</i> R. Snell.
22 Sept.	Maffey, N. W.	Junior conductor	7/-	From Railways, <i>viz</i> W. Davies.
23 Oct.	Blackstone, Frank E.	"	5/-	Transferred from Supernumerary Staff.
29 "	Pooley, Charles W.	"	5/-	"
29 "	Wilson, Ernest	"	5/-	"
29 "	Ramus, Fred. E.	Car cleaner	6/6	"
29 "	Steel, William	"	6/6	<i>Vice</i> J. Garnett. Position retrenched on Supernumerary Staff.
29 "	Carmody, John	"	6/6	Transferred from Supernumerary Staff.
29 "	Lawson, George	Junior Conductor	8/-	<i>Vice</i> J. Rogers. Position retrenched on Supernumerary Staff.
29 "	Lewis, William A. B.	"	5/-	<i>Vice</i> C. Soumer. " " " "
1 Nov.	Blackstone, Fred.	Clerk	£140 per annum	Transferred from Supernumerary Staff.
15 Dec.	Wilson, Robert	Car cleaner	6/6 per day	<i>Vice</i> J. Barlow.
1893.				
21 Jan.	Cooper, Percy	Junior Conductor	5/-	Re-employed for further extension of Balmain Line.
30 "	Morrison, Ernest R.	"	5/-	<i>Vice</i> Henry J. Martin.
13 Feb.	Blakeney, Patrick T.	"	5/-	<i>Vice</i> J. Bourke.
10 "	Freeman, John T.	"	5/-	<i>Vice</i> R. Hardie.
10 April	Azzoni, Walter M.	Clerk	£100 per annum	From Railways.
TRAMWAYS—MAINTENANCE BRANCH.				
22 May.	Baylis, John	Labourer	7/6 per day	From Railways, <i>viz</i> John Rea.

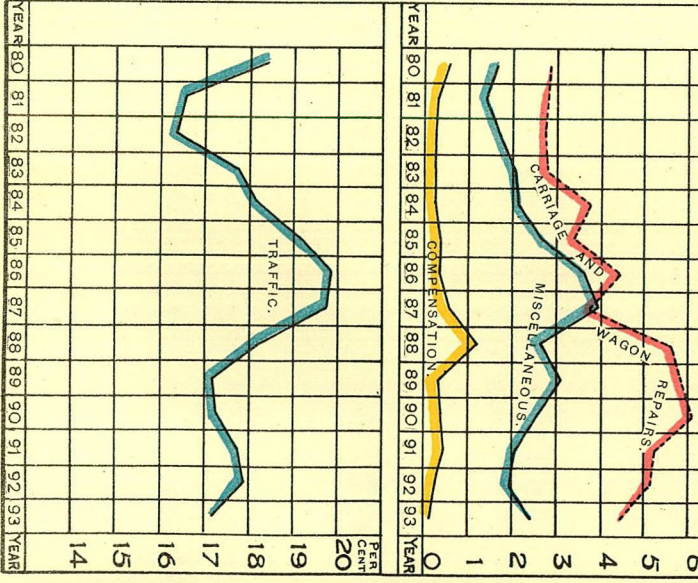
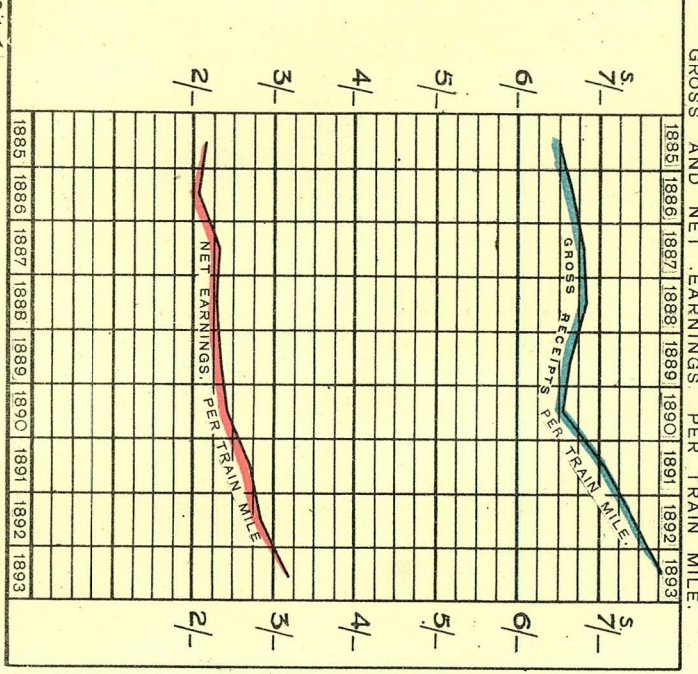
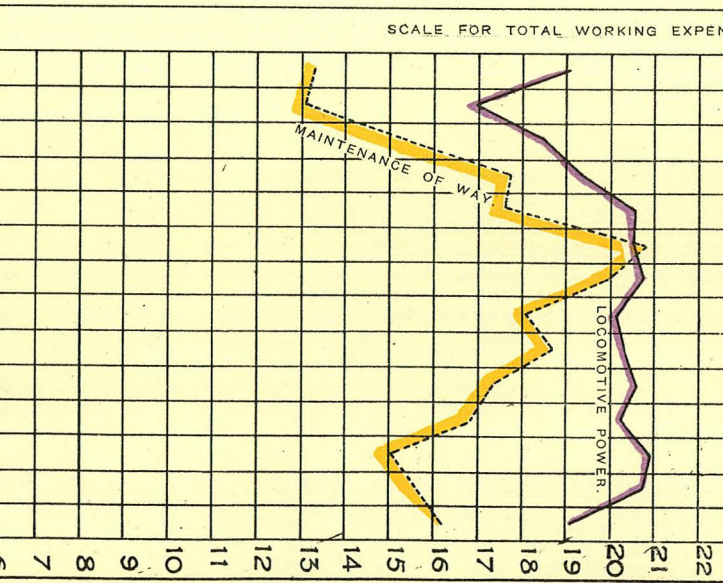
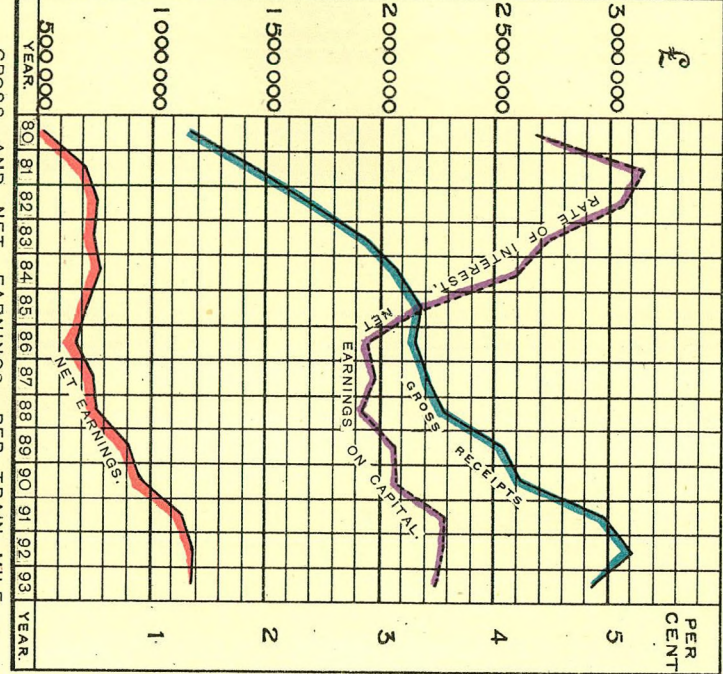
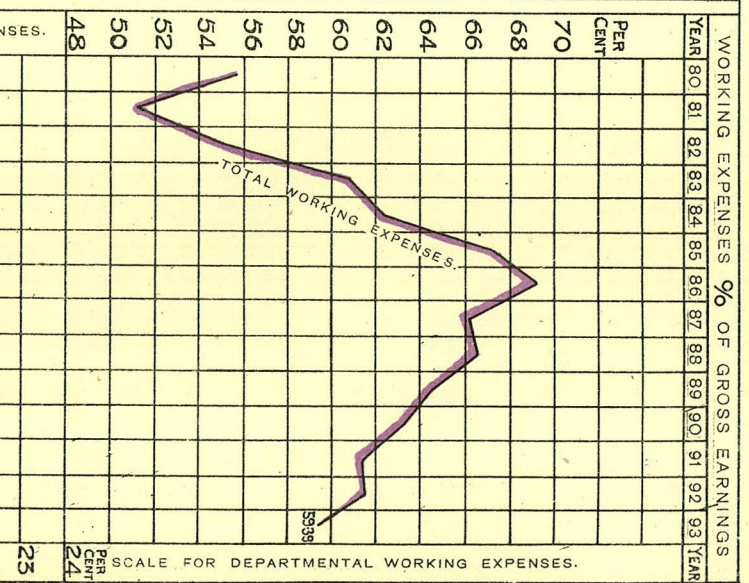
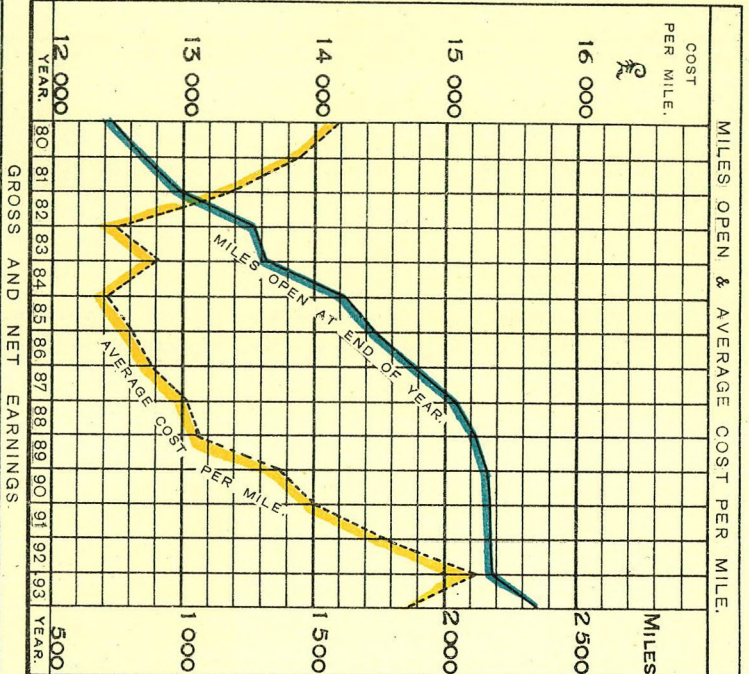
APPENDIX XL.

NEW SOUTH WALES GOVERNMENT TRAMWAYS.

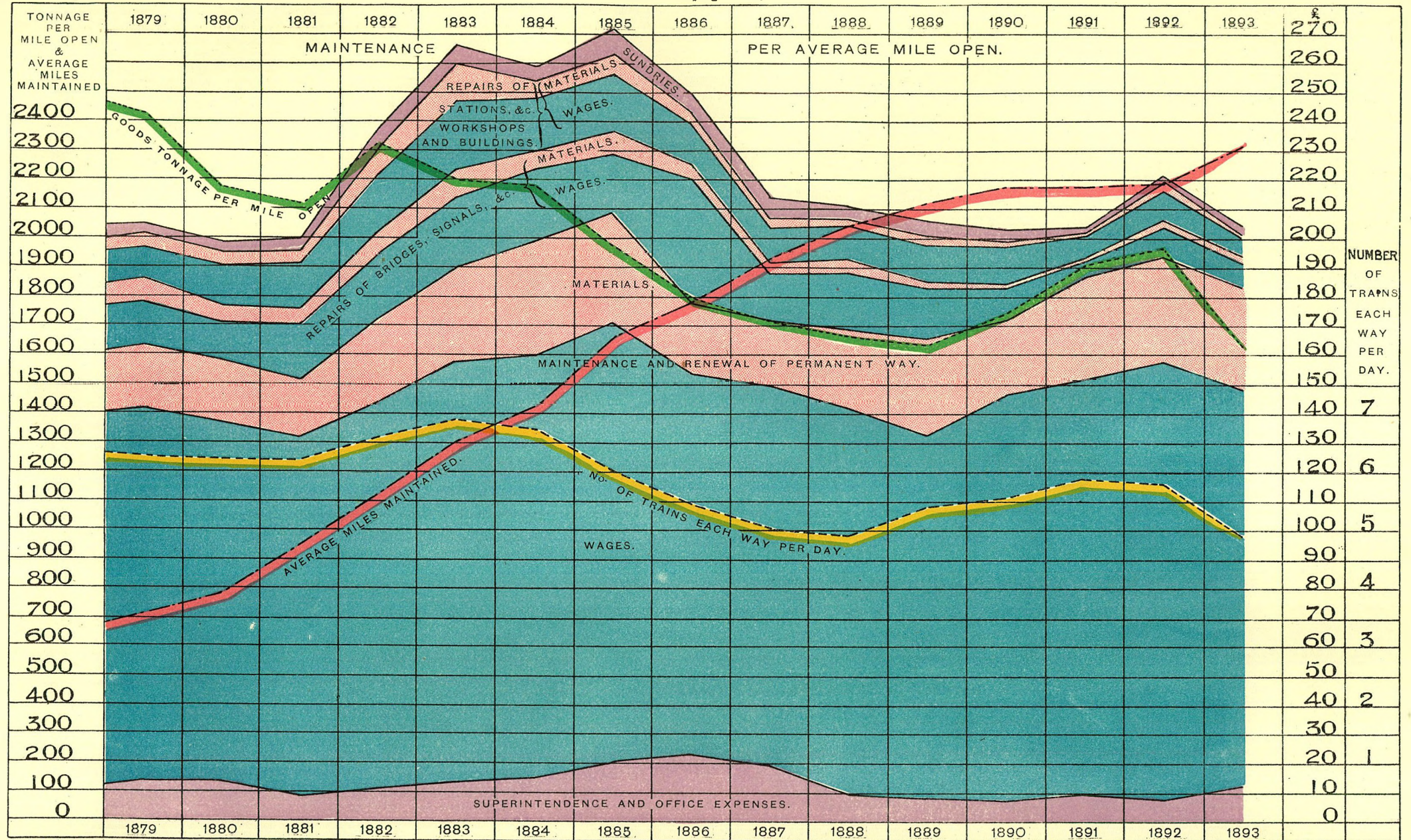
RETURN showing the Removals of Tramway Employés from 1st July, 1892, to 30th June, 1893.

Date.	Name.	Position.	Rate.	Remarks.
1892. TRAMWAYS—LOCOMOTIVE BRANCH.				
4 July	Kenyon, John	Cleaner	6/- per day	Resigned.
7 "	M'Anulty, William	Boilermaker	9/4	Retrenchment.
7 "	Stevens, John	"	9/4	"
14 "	Clarke, George F.	Labourer	7/-	Discharged.
21 "	M'Iver, Francis	Boilermaker	10/-	Retrenchment.
3 Aug.	Jarvis, John	Labourer	7/-	Resigned.
17 "	Boxall, Arthur	Apprentice	7/10	"
17 "	Hinson, Robert	Cleaner	5/6	Discharged.
20 "	Tubby, William	Fireman	7/6	Resigned.
23 "	Sales, Alfred	"	9/-	Deceased.
5 Sept.	Guttenhof, Percy	Shop boy	2/6	Resigned.
20 "	Edwards, Alfred	Cleaner	4/-	"
1 Oct.	Benn, Henry	Shop Boy	3/-	Discharged.
4 "	Quinn, Patrick	Boiler washer out.	8/6	Deceased.
15 "	Hollingsworth, John	Driver	13/-	Resigned.
7 Nov.	Nicoll, Jules A.	Car-fitter	10/2	Discharged.
11 "	Campbell, William	Fireman	9/-	Retired.
5 Dec.	Shepherd, Charles	"	5/-	Discharged.
16 "	Woodford, Arthur A.	Labourer	6/6	"
22 "	Hodgson, Charles	Cleaner	6/-	"
1893.				
10 Jan.	Nolan, Stephen	Fuelman	7/-	Resigned.
13 "	Smith, William	Labourer	6/6	Discharged.
27 "	Robins, Reuben	Fuelman	6/6	Resigned.
28 "	Heydon, George T.	Shop boy	5/-	"
13 Feb.	Weyman, Frederick G.	Boy labourer	4/-	"
2 Mar.	M'Stravick, James	Fireman	9/-	"
2 "	Gates, Edward	Driver	13/-	"
8 "	Volk, Francis	"	14/-	Left the service.
8 "	Bell, James	Fireman	8/-	Resigned.
18 "	Irvine, Alexander	"	8/-	Deceased.
22 "	Swain, Daniel	"	9/-	Left the service.
23 "	Chapman, Charles F.	Apprentice	7/10	Resigned.
25 "	Meadows, James	Cleaner	5/6	Left the service.
1 April	Downes, Chas	"	6/-	Resigned.
20 "	McNamara, Ernest	Apprentice	10/- per week	"
20 "	Bishop, Richard H.	Shop-boy	8/- per day	Left.
20 "	Smith, Henry	Labourer	8/-	Resigned.
10 June	Baker, Chas.	Fireman	7/6	Deceased.
13 "	Ryan, James	Cleaner	5/6	Resigned.
15 "	Egan, Patrick	Labourer	6/6	Discharged.
16 "	Green, John	Cleaner	5/6	Resigned.
19 "	Mirando, Wm.	Labourer	7/-	Discharged.
25 "	Dunne, Mrs	Office cleaner	10/- per week	"
1892. TRAMWAYS—TRAFFIC BRANCH.				
20 July	Barelay, William	Conductor	8/6 per day	Resigned.
17 Aug.	Davies, William	Junior conductor	7/-	To Railways.
20 "	Stewart, Robert S.	Foreman's clerk	9/-	Resigned.
15 Sept.	M'Clean, Horatio	Junior conductor	6/6	"
20 "	Ashe, Ernest W.	Conductor	5/-	To Locomotive Branch.
30 "	Brown, S. N.	Inspector	11/-	Retired.
9 Oct.	Hardie, Robert	Junior Conductor	7/-	Resigned.
11 "	Martin, Henry J.	"	5/6	To Locomotive Branch.
11 "	Barlow, Joseph	Car-cleaner	7/-	Resigned.
13 Dec.	Bourke, James G.	"	7/-	"
1893.				
16 Mar.	Cooper, Percy	Junior Conductor	5/-	To Locomotive Branch, Tramways.
5 April	Hetherington, John	Assistant conductor	7/-	Discharged.
30 "	Tyndall, Henry J.	"	6/6	Retrenchment.
30 "	Blackstone, Fred. A.	Clerk	£140 per annum	"
20 May.	Switzon, Richard	Pointsmen	7/3 per day	"
18 June	Pooley, Chas. W.	Junior conductor	5/-	Resigned.
22 "	Scott, George	Pointsmen	7/3	"
1892. TRAMWAYS—MAINTENANCE BRANCH.				
20 July	Brown, J.	Ganger	9/- per day	Resigned.
20 "	Fulton, Thomas	Labourer	7/6	Discharged.
4 Aug.	Fighting, George	"	7/6	"
18 "	Feather, John	Ganger	9/-	"
4 Oct.	Bell, William	Labourer	7/6	Resigned.
1893.				
14 Feb.	Burden, Thomas	Ganger	9/-	"
27 April	Bates, Edward G.	Labourer	7/6	Deceased.
27 "	Walters, Frederick	"	7/6	Discharged.
22 May.	Rea, John	"	7/6	To Railways.

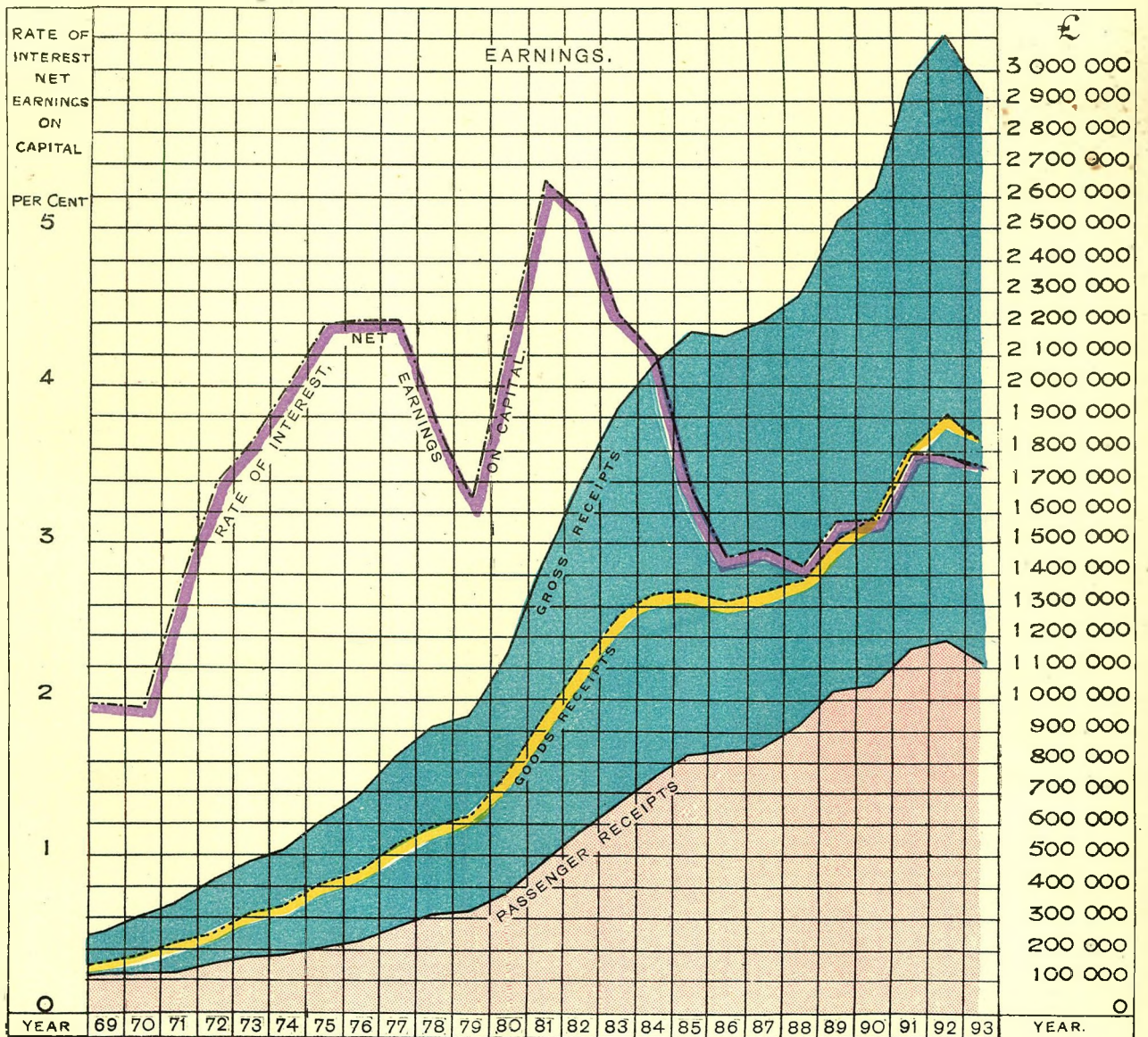
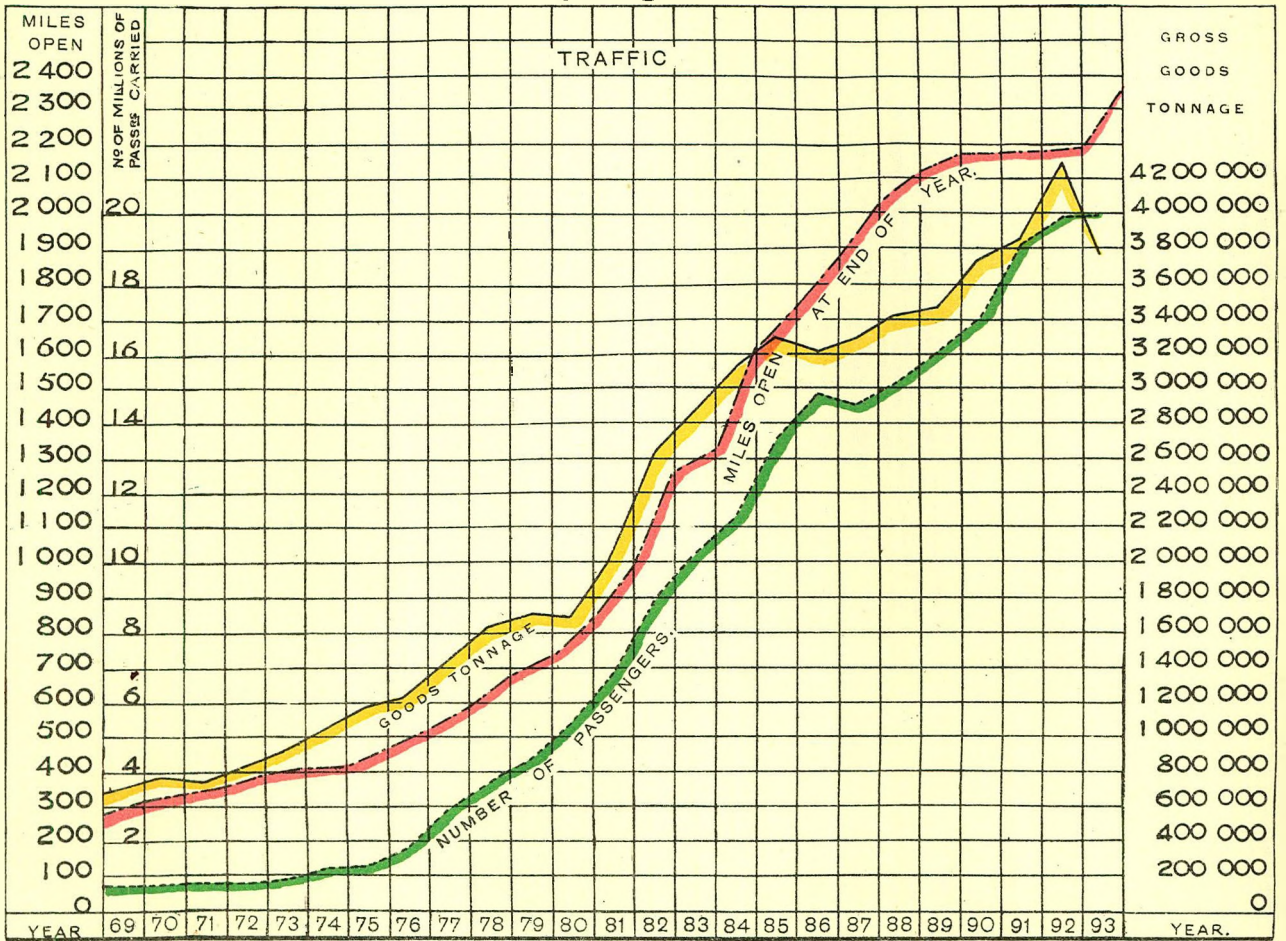
[Plans, &c.]



N°2






(Sig. 4)





MAP
of
NEW SOUTH WALES RAILWAYS
showing
COACH AND OTHER ROUTES FROM THE VARIOUS STATIONS

Scale. 60 Miles to an Inch

Explanation
 Railway lines marked thus 
 Coach routes do do 
 Railways under construction do 

1893



MAP
 SHEWING THE PRINCIPAL
RAILWAY SYSTEMS
 OF
AUSTRALIA
 1893
 SCALE
 1:1,000,000
 Railway Lines shown thus

1894.

NEW SOUTH WALES.

RAILWAYS AND TRAMWAYS.

(REPORT OF RAILWAY COMMISSIONERS FOR THE QUARTER ENDING 31st DECEMBER, 1893.)

Presented to Parliament, pursuant to Act 51 Vic. No. 35, sec. 44.

Offices of the Railway Commissioners of New South Wales,
29 January, 1894.

To THE HONORABLE THE MINISTER OF RAILWAYS,—

Sir,

In accordance with the provisions of the 44th clause of the Railway Act of 1888, 51 Vic. No. 35, we have the honor to submit, for the information of Parliament, our Report, for the quarter ending 31st December, 1893, upon the subjects specified, viz. :—

- (I.) "The state of the traffic returns, with the approximate cost and earnings of trains per ton per train mile, in respect of goods and passengers, respectively, carried during the past quarter."
 (II.) "The general condition of the lines, and accommodation for the traffic."
 (III.) "The special rates (if any) which have been made, and the reasons for making such rates."
 (IV.) "The appointments and removals, with the circumstances attending each case."

I.—STATE OF THE TRAFFIC.

Railways.		Quarter ending 31st Dec., 1892.	Quarter ending 31st Dec., 1893.											
Miles open	...	2,314	2,462½											
Revenue	<table border="0"> <tr> <td></td> <td>1892.</td> <td>1893.</td> <td></td> </tr> <tr> <td>Passenger</td> <td>£305,875</td> <td>£280,471</td> <td rowspan="2">}</td> </tr> <tr> <td>Merchandise</td> <td>£598,083</td> <td>£624,063</td> </tr> </table>		1892.	1893.		Passenger	£305,875	£280,471	}	Merchandise	£598,083	£624,063	£903,958	£904,534
	1892.	1893.												
Passenger	£305,875	£280,471	}											
Merchandise	£598,083	£624,063												
Expenditure	...	£484,183	£453,039											
Train miles run	...	2,008,669	1,978,472											
Earnings per train mile	...	9/-	9/1¼											
Expenditure per train mile	...	4/9¼	4/7											
Percentage—Expenditure to earnings	...	53·56	50·08											
Number of passengers	...	5,182,594	4,896,159											
Tonnage of goods traffic	...	853,581	777,319											
Tonnage of live stock traffic	...	36,666	40,549											

8—A.

[1,265 copies—Approximate Cost of Printing (labour and material), £9 16s. 8d.]

Tramways.	Quarter ending 31st Dec., 1892.	Quarter ending 31st Dec., 1893.
Miles open	49	54½
Revenue	£76,915	£71,048
Expenditure	£61,699	£63,706
Train miles run	484,485	509,839
Earnings per train mile	3/2	2/9½
Expenditure per train mile	2/6½	2/6
Percentage—Expenditure to earnings	80·22	89·66
Number of fares collected	18,157,072	16,743,576

II.—CONDITION OF THE LINES.

A report as to the condition of the lines will be found as an Appendix, page 4.

III.—SPECIAL RATES.

A statement of the special rates, and the reasons for making the same, will be found attached, page 4.

IV.—STAFF.

These returns are given as an Appendix, pages 5 and 6.

GENERAL REMARKS.

The line from Molong to Forbes, a distance of 72¾ miles, was opened for traffic on the 18th of December; this brings the total mileage of the Railways open for traffic up to 2,462½ miles.

The earnings for the quarter show an increase of £576. It is satisfactory to be able to report even this small increase, as for the past five quarters continuous decreases have had to be recorded.

The more satisfactory condition of the revenue is, to a considerable extent, owing to the wool traffic having come forward earlier this year, the increase in the wool revenue amounting to £26,228; the live stock traffic also shows an increase of £10,875. Coal and other mineral traffic shows a decrease of £8,640, and general merchandise, £3,978.

The net result of the traffic for the quarter stands as follows:—

Goods traffic	Increase—£25,980
Coaching traffic	Decrease—£25,404
Net Increase	£576

The passenger traffic continues to fall in the most serious manner; this arises in consequence of a considerable decrease in the long distance travel, and also owing to a considerable portion of the former first-class passengers availing themselves of the second-class accommodation. During the quarter the decrease in first-class traffic amounted to £13,979, and in the second-class to £10,206. The number of passenger journeys decreased to the extent of 286,435.

The decrease in the number of tons of coal and other minerals carried for the quarter amounted to 68,722 tons; but it is hoped that the reduced selling price of coal which has recently been decided upon will have the effect of bringing back some of the lost trade to the Colony.

The working expenses have been reduced to the extent of £31,144, and the earnings per train mile have been slightly increased; the net earnings per train mile, after paying working expenses, now stand at 4s. 6 $\frac{3}{4}$ d., as against 4s. 2 $\frac{1}{4}$ d. in the corresponding quarter a year ago.

The percentage of expenditure to earnings for the quarter stands at the low figure of 50·08 per cent.

The policy inaugurated by us of employing more powerful engines for the heavy grades on the main lines, and cutting out some of the exceptionally heavy grades that affected the loading of trains, has had the effect of very materially reducing the working expenses, particularly during the last eighteen months. It is desirable that this work of improving the grades should be continued from time to time as funds are available.

CONDITION OF THE LINES AND ACCOMMODATION FOR THE TRAFFIC.

The work of relaying, resleepering, and reballasting the lines has been continued, and the lines are in excellent running order.

The accommodation for the traffic is satisfactory.

TRAMWAYS.

The Extension, Hunter-street, Newcastle, to the Military Reserve, a distance of 62 chains, was opened for traffic on the 23rd December.

The Tramway Traffic shows a falling off of £5,867.

The Expenditure shows an increase of £2,007.

The falling off in the traffic is owing to the general depression, and the increase in working expenses arises in consequence of so many unprofitable sections of road having been handed over to us within the last few years.

We have the honor to be,

Sir,

Your most obedient servants,

E. M. G. EDDY,
Chief Commissioner.

W. M. FEHON,
Commissioner.

CHARLES OLIVER,
Commissioner.

APPENDIX I.

NEW SOUTH WALES GOVERNMENT RAILWAYS.

REPORT upon Condition of Lines for the quarter ending 31st December, 1893.

Sir, Office of Engineer-in-Chief for Existing Lines, 12 January, 1894.

I beg to report that the whole of the lines and works have been thoroughly maintained during the past quarter.

Relaying, Reballasting, &c.

Steady progress continues to be made in relaying, rerailling, and resleepering, and the road generally has been considerably improved.

New Lines Opened.

The extension from Molong to Forbes, a length of 72½ miles, was opened for traffic on the 18th December last.

I have, &c.,

WILLIAM T. FOXLEE,

Engineer-in-Chief of the Existing Lines.

The Secretary to the Railway Commissioners.

APPENDIX II.

NEW SOUTH WALES GOVERNMENT RAILWAYS.

RETURN of Rates approved for the Quarter ending 31st December, 1893.

Article.	Rate.	Reason for rate.
Chilled Meat	From Narrandera to Darling Harbour to be charged at the rate of £21 per refrigerating car, provided 40,000 carcasses of sheep are sent within a period of six months.	To secure traffic.
Wool	From Bundaleer Station to be charged the same rate as wool from Thurulgoona.	do do
Stock	Stock consigned from Hay to Narrandera, and afterwards reconsigned to Darling Harbour in the shape of chilled meat, to be charged the same rate per mile as stock from Hay to Darling Harbour, plus a shunting charge of 2s. 6d. per truck.	do do
Solawater Gas-tubes.....	When empty to be charged at the same rate as returned empty pipes ..	To equalise rates.
Coal	The Pacific Co-operative Steam Coal Company to be allowed a rebate of 1d. per ton on coal hauled from Teralba to the Dyke, provided 90,000 tons per annum is forwarded by rail.	To secure traffic.

APPENDIX III.

APPENDIX III.

NEW SOUTH WALES GOVERNMENT RAILWAYS AND TRAMWAYS.

RETURN, in accordance with Clause No. 41 of the Railway Act, showing the Appointments of Employees from the 1st of October to the 31st of December, 1893.

Date.	Name.	Position.	Rate.	Remarks.
ENGINEER-IN-CHIEF FOR EXISTING LINES BRANCH.				
1 Oct.	Douglas, Henry	Carpenter	11/- per day	From Interlocking Branch, <i>vice</i> J. West.
13 Nov.	Fawcett, William	Labourer	6/6 per day	<i>Vice</i> J. Curry.
1 Dec.	Gowans, James	Carpenter	11/- per day	From Interlocking Branch.
8 "	L'urbanks, Ernest	Labourer	6/6 per day	<i>Vice</i> C. Robinson.
8 "	Perfect, Henry	Improver	7/- per day	From Interlocking Branch, <i>vice</i> W. Neate.
22 "	Atcheson, David	Carpenter	10/6 per day	From Interlocking Branch.
CHIEF MECHANICAL ENGINEER'S BRANCH.				
2 Oct.	George, James	Washer-out	8/- per day	From Traffic Branch.
9 "	Stuart, William M.	Watchman	9/- per day	From Traffic Branch.
25 "	Edwards, John	Gland packer	8/- per day	From Traffic Branch.
7 Nov.	Robinson, Henry	Cleaner	6/6 per day	From Tramways, <i>vice</i> J. Davis.
28 "	Freckleton, Bertram	Shop boy	2/- per day	From Tramways.
CHIEF TRAFFIC MANAGER'S BRANCH.				
28 Sept.	Johnstone, Mrs.	Gatekeeper	Free house	<i>Vice</i> Mrs. Chandler.
6 Oct.	Peters, Ellen	Gatekeeper	7/- per week	<i>Vice</i> Ellen M'Carthy.
20 "	Cox, Walter L.	Porter	7/- per day	<i>Vice</i> J. M'Grath.
29 "	Harry, Ellen	Gatekeeper	7/- per week	<i>Vice</i> Mrs. Healy.
31 "	Lyncham, Frederick	Gatekeeper	Free house	<i>Vice</i> Elizabeth Jullen.
8 Nov.	Riddle, Caroline	Gatekeeper	Free house	<i>Vice</i> Mrs. Knight.
8 "	Hanna, Mrs.	Gatekeeper	Free house	<i>Vice</i> Mrs. Sherriff.
13 "	Harling, Archibald	Porter	7/- per day	<i>Vice</i> William Raley.
15 "	Allen, James	Gatekeeper	7/6 per week	<i>Vice</i> Mrs. Allen.
17 "	Kingston, Mary	Gatekeeper	7/- per week	
17 "	Clarke, Elizabeth	Gatekeeper	7/- per week	<i>Vice</i> Mrs. Clarke.
28 "	Baldwin, Eliza	Gatekeeper	7/- per week	
1 Dec.	Miller, Mary	Gatekeeper	7/- per week	<i>Vice</i> Rebecca Davies.
1 "	Shepherd, Sarah	Cartaker	5/- per week	
7 "	Abbott, John	Gatekeeper	15/- per week	<i>Vice</i> Evelyn Lett.
15 "	Wilson, Mrs.	Gatekeeper	Free house	
15 "	Norton, Arthur	Junior porter	5/- per day	From Electrical Branch, <i>vice</i> J. Stephenson.
19 "	Higgs, Percy	Porter-in-charge	35/- per week	Retrenched officer; reinstated.
21 "	Wilson, Elizabeth	Gatekeeper	Free house	<i>Vice</i> Mary M'Cann.
22 "	Osrey, Elizabeth	Gatekeeper	7/- per week	<i>Vice</i> Mary Highfield.
ELECTRICAL ENGINEER'S BRANCH.				
16 Dec.	Stephenson, James	Messenger	5/- per day	From Traffic Branch, <i>vice</i> A. Norton.
SIGNAL AND INTERLOCKING BRANCH.				
9 Oct.	West, Joseph	Carpenter	11/- per day	From Permanent Way Branch, <i>vice</i> H. Douglas.
TRAMWAYS—LOCOMOTIVE BRANCH.				
7 Oct.	Hippitt, Henry J.	Boy labourer	3/- per day	<i>Vice</i> J. Green.
9 "	Griubbly, Arthur H.	Boy labourer	4/- per day	<i>Vice</i> R. Walker.
13 "	Carr, William J.	Labourer	6/6 per day	<i>Vice</i> G. Reynolds.
1 Nov.	Widon, Albert E.	Shop boy	2/6 per day	<i>Vice</i> C. Aldred.
7 Dec.	Rees, Sidney	Cleaner	5/6 per day	<i>Vice</i> H. W. Robinson.
14 "	Neelan, Thomas	Shop boy	2/- per day	<i>Vice</i> W. Weaver.
14 "	Harding, William	Shop boy	2/3 per day	<i>Vice</i> B. Freckleton.
15 "	O'Grady, Edwin	Boy labourer	5/3 per day	<i>Vice</i> Isaac Chambers.
TRAMWAYS—TRAFFIC BRANCH.				
16 Dec.	Wood, Thomas A.	Assistant conductor	5/- per day	<i>Vice</i> H. D. Elliott.

APPENDIX IV.

NEW SOUTH WALES GOVERNMENT RAILWAYS AND TRAMWAYS.

RETURN, in accordance with Clause No. 41 of the Railway Act, showing the Removals of Employees from the 1st October to 31st December, 1893.

Date.	Name.	Position.	Rate.	Remarks.
ENGINEER-IN-CHIEF FOR EXISTING LINES BRANCH.				
1 Oct.	Robinson, Charles	Pettler	7/6 per day	Resigned.
1 "	Farrell, Henry	Ganger	12/- per day	Retired.
1 "	Stephens, Frederick	Rough carpenter	8/6 per day	Retrenchment.
1 "	White, David	Carpenter	10/4 per day	Retrenchment.
1 "	Vogt, Theophilus	Rough carpenter	8/6 per day	Retrenchment.
9 "	West, Joseph	Carpenter	11/- per day	To Interlocking Branch; position abolished.
16 "	Curry, John	Labourer	7/- per day	Resigned.
2 Nov.	Highfield, George	Labourer	7/6 per day	Retrenchment.
2 "	Corbett, Thomas	Pettler	7/6 per day	Deceased; position abolished
4 "	Swinfild, John	Pettler	7/6 per day	Retired.
8 "	Hambley, Thomas	Labourer	7/6 per day	Retrenchment
9 "	Walkom, Samuel	Blacksmith	10/6 per day	Retrenchment.
30 "	Bryant, Ruchen	Pettler	8/- per day	Retrenchment.
7 Dec.	Royal, Henry	Labourer	7/6 per day	Retrenchment.
8 "	Townsend, Malchi	Labourer	7/6 per day	Retrenchment.
14 "	Humm, Joseph	Pettler	7/6 per day	Resigned; position abolished.
26 "	Neate, William	Boy.	6/- per day	Services not required.
CHIEF MECHANICAL ENGINEER'S BRANCH.				
23 Sept.	Dwyer, Hugh	Labourer	7/8 per day	Deceased; position abolished.
30 "	Brail, Thomas	Inspector	£350 per annum	Resigned; position abolished.
14 Oct.	Brown, Joseph	Tube repairer	9/6 per day	Retired; position abolished
21 "	Davis, John	Fireman	10/- per day	Discharged.
21 "	Owen, William	Driver	14/- per day	Retired
2 Nov.	Renshaw, Benjamin	Car-banlder	10/- per day	Discharged; position abolished.
18 "	Rodge, James	Driver	15/- per day	Retired
20 "	Schroder, Conrad	Fitter	16/8 per day	Deceased; position abolished
27 "	Fraser, James	Cleaner	7/- per day	Discharged; position abolished.
27 "	Stewart, George	Pumper	8/8 per day	Deceased.
30 "	Bryant, John	Fuelman	7/- per day	Discharged; position abolished.
7 Dec.	Jones, Thomas	Boiler-maker's assistant	7/6 per day	Discharged.
10 "	Moodie, Alfred	Fireman	10/- per day	Deceased.
14 "	Sheldon, Arthur	Fitter	10/- per day	Resigned; position abolished.
28 "	Marks, Henry	Labourer	7/6 per day	Deceased.

Date.	Name.	Position.	Rate.	Remarks.
1893.				
CHIEF TRAFFIC MANAGER'S BRANCH.				
21 Sept.	Grant, James	Limp-cleaner	7/6 per day	Deceased; position abolished.
26 "	Morris, Thomas	Conductor	7/- per day	Retrenchment.
28 "	Chandler, Mrs.	Gatekeeper	Free house	Resigned.
30 "	Edwards, John	Porter	10/- per day	To Locomotive Branch; position abolished.
30 "	George, James	Crane-driver	10/- per day	To Locomotive Branch; position abolished.
4 Oct.	Ellis, Robert	Junior porter	5/- per day	Retrenchment.
5 "	McCarthy, Ellen	Gatekeeper	7/- per week	Resigned.
9 "	Pallier, Robert	Officer-in-charge	£140 per annum	Resigned; position abolished.
9 "	Stuart, William M.	Clerk	£165 per annum	To Locomotive Branch; position abolished.
17 "	McGrath, Joseph	Porter	8/- per day	Discharged.
19 "	Healy, Mrs.	Gatekeeper	7/- per week	Resigned.
20 "	O'Connor, William	Probationer	2/6 per week	Resigned; position abolished.
22 "	O'Brien, James	Porter	6/6 per week	Deceased; position abolished.
23 "	Knight, Mrs.	Gatekeeper	Free house	Resigned.
24 "	Kell, Donald	Porter	8/- per day	Retrenchment.
31 "	French, William R.	Clerk	£210 per ann.	Retrenchment.
31 "	Moore, William J.	Clerk	£195 per ann.	Retrenchment.
31 "	Paton, David	Clerk	£150 per ann.	Retrenchment.
31 "	Irons, Alexander	Clerk	£200 per ann.	Retrenchment.
31 "	Wilson, James A.	Clerk	£180 per ann.	Retrenchment.
31 "	Keefley, William E.	Relieving Officer	£180 per ann.	Retrenchment.
31 "	West, Edward A.	Clerk	£150 per ann.	Retrenchment.
31 "	Baxter, John	Clerk	£150 per ann.	Retrenchment.
31 "	Ferguson, George	Clerk	£150 per ann.	Retrenchment.
31 "	Thompson, Robert P.	Clerk	£180 per ann.	Retrenchment.
31 "	Lewis, Robert	Platform Inspector	12/- per day	Retrenchment.
31 "	Jubin, Elizabeth	Gatekeeper	Free house	Resigned.
1 Nov.	O'Brien, Ellen	Gatekeeper	25/- per week	Retrenchment.
1 "	King, John	Porter	7/- per day	Resigned; position abolished.
2 "	Miller, Mrs.	Linen attendant	30/- per week	Resigned.
5 "	Johnson, David	Junior porter	3/4 per day	Retrenchment.
7 "	Hewitt, James	Junior porter	5/- per day	Retrenchment.
7 "	Sherritt, Mrs.	Gatekeeper	Free house	Resigned.
10 "	Riley, William	Ticket collector	8/- per day	Discharged.
10 "	Gazeley, James H.	Porter	7/- per day	Retrenchment.
14 "	Allen, Mrs.	Gatekeeper	7/6 per week	Deceased.
16 "	Cotter, James	Relieving porter	7/- per day	Resigned; position abolished.
16 "	McCann, Mary	Gatekeeper	Free house	Deceased.
16 "	Clark, Mrs.	Gatekeeper	7/- per week	Deceased.
17 "	Bennett, Peter	Gatekeeper	30/- per week	Retired; position abolished.
19 "	Coghlan, Charles	Gatekeeper	7/6 per day	Retrenchment.
23 "	Hawke, Joseph	Porter	7/- per day	Retrenchment.
27 "	Mineh, Andrew	Guard	10/6 per day	Deceased; position abolished.
29 "	Cruckshank, John J.	Junior porter	5/- per day	Resigned; position abolished.
30 "	Vile, John	Clerk	£180 per ann.	Retired; position abolished.
30 "	Barker, James	Clerk	£165 per ann.	Retired; position abolished.
1 Dec.	Danes, Rebecca	Gatekeeper	Free house	Resigned.
4 "	Left, Evelyn	Gatekeeper	Free house	Resigned.
9 "	Tyley, James	Porter	7/- per day	Retrenchment.
11 "	Pienc, Thomas	Shunter	8/6 per day	Retrenchment.
11 "	Ambrose, Henry	Signalman	8/6 per day	Retrenchment.
11 "	Kraushaar, Frank	Porter	7/4 per day	Retrenchment.
12 "	Westlake, Thomas	Porter	7/- per day	Discharged; position abolished.
14 "	Brown, Charles	Porter	40/- per week	Retrenchment.
14 "	Moore, Joseph	Telegraph probationer	2/6 per week	Retrenchment.
15 "	Stephenson, James	Junior porter	7/- per day	To Electrical Branch
15 "	Summergreen, James	Porter	7/- per day	Deceased; position abolished.
16 "	Leaney, Edward	Porter	7/- per day	Retrenchment.
16 "	Burns, Sylvester J.	Porter	7/- per day	Retrenchment.
16 "	Duffy, Wm. A.	Porter	7/- per day	Retrenchment.
16 "	Priee, James	Porter	7/- per day	Retrenchment.
18 "	Boland, Alexander	Porter	7/- per day	Retrenchment.
18 "	Ramsay, Gilbert	Junior porter	5/- per day	Resigned; position abolished.
21 "	Highfield, Mary	Gatekeeper	7/- per week	Resigned.
23 "	Gibson, William	Junior porter	3/4 per day	Retrenchment.
26 "	Malony, John	Porter	7/- per day	Retrenchment.
27 "	Hunter, William	Porter	7/- per day	Retrenchment.
31 "	Graham, Anthony	Station-master	£180 per annum	Retired; position abolished.
ELECTRICAL ENGINEER'S BRANCH.				
22 Nov.	Fraser, Richard G.	Junior clerk	£110 per annum	Resigned.
15 Dec.	Norton, Arthur	Messenger	5/- per day	To Traffic Branch.
SIGNAL AND INTERLOCKING BRANCH.				
6 Oct.	Bendall, Henry	Signal-fitter	8/- per day	Retrenchment.
9 "	Douglas, Henry	Carpenter	11/- per day	To Permanent Way Branch; position abolished.
3 Nov.	Dingle, George	Planner	9/- per day	Retrenchment.
1 Dec.	Gowans, James	Carpenter	11/- per day	To Permanent Way Branch.
8 "	Perfect, Henry	Improver	7/- per day	To Permanent Way Branch; position abolished.
22 "	Aitchison, David	Carpenter	10/6 per day	To Permanent Way Branch.
TRAMWAYS—LOCOMOTIVE BRANCH.				
7 Oct.	Aldred, Charles	Fireman	8/- per day	Left.
3 Nov.	Robinson, Henry	Cleaner	6/- per day	To Railways.
11 "	Bird, Charles	Boilermaker	10/- per day	Deceased; position abolished.
13 "	Weaver, William	Cleaner	6/8 per day	Resigned.
25 "	Chambers, Isaac	Diver	14/- per day	Resigned.
27 "	Freckleton, Bertam	Shop boy	2/- per day	To Railways.
10 Dec.	Rose, William	Motor man	8/- per day	Discharged.
TRAMWAYS—TRAFFIC BRANCH.				
1 Oct.	Wilson, Robert	Car-cleaner	6/6 per day	Deceased.
18 "	Lewis, Lewis	Car-cleaner	7/- per day	Resigned.
18 Dec.	Elliott, Henry D.	Car-cleaner	7/- per day	Discharged.

1894.

NEW SOUTH WALES.

RAILWAYS AND TRAMWAYS.

(REPORT OF RAILWAY COMMISSIONERS FOR THE QUARTER ENDING 31st MARCH, 1894.)

Presented to Parliament, pursuant to Act 51 Vic. No. 35, sec. 44.

Offices of the Railway Commissioners of New South Wales,
Sydney, 30th April, 1894.

TO THE HONORABLE THE MINISTER OF RAILWAYS,—

Sir,

In accordance with the provisions of the 44th clause of the Railway Act of 1888, 51 Vic. No. 35, we have the honor to submit, for the information of Parliament, our Report, for the quarter ending 31st March, 1894, upon the subjects specified, viz. :—

- (I.) "The state of the traffic returns, with the approximate cost and earnings of trains per ton per train mile, in respect of goods and passengers, respectively, carried during the past quarter."
 (II.) "The general condition of the lines, and accommodation for the traffic."
 (III.) "The special rates (if any) which have been made, and the reasons for making such rates."
 (IV.) "The appointments and removals, with the circumstances attending each case."

I.—STATE OF THE TRAFFIC.

RAILWAYS.		Quarter ending 31st March, 1893.	Quarter ending 31st March, 1894.
Miles open	...	2,314	2,462½
Revenue	{ 1893. 1894. Passenger ... £297,930 £280,623 } Merchandise... £428,293 £367,070 }	£726,223	£647,693
Expenditure	...	£383,434	£365,314
Train miles run	...	1,919,926	1,757,413
Earnings per train mile	...	7/6½	7/4½
Expenditure per train mile	...	4/-	4/2
Percentage—Expenditure to earnings	...	52.80	56.40
Number of passengers	...	4,999,337	4,810,337
Tonnage of goods traffic	...	933,359	875,201
Tonnage of live stock-traffic	...	40,390	37,013

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TRAMWAYS.	Quarter ending 31st March, 1893.	Quarter ending 31st March, 1894.
Miles open	49	55
Revenue	£75,193	£72,615
Expenditure	£51,804	£48,897
Train miles run	472,620	512,810
Earnings per train mile	3/2¼	2/10
Expenditure per train mile	2/2¼	1/11
Percentage—Expenditure to earnings	68·89	67·33
Number of fares collected	17,744,663	16,994,526

II.—CONDITION OF THE LINES.

A report as to the condition of the lines will be found as an Appendix, page 4.

III.—SPECIAL RATES.

A statement of the special rates, and the reasons for making the same, will be found attached, page 4.

IV.—STAFF.

These returns are given as an Appendix, pages 5 to 8.

RAILWAYS.

GENERAL REMARKS.

The great depression in trade of all descriptions, following upon the financial troubles of the first half of the year 1893, has made itself more seriously felt during the past quarter than in any of the preceding quarters.

The traffic for the quarter shows a decrease of £78,530; £17,307 of the decrease arising in the passenger department, and £61,223 in the goods, mineral, and live stock department.

The working expenses have been reduced by £18,120; and it must be borne in mind that for the corresponding quarter of a year ago the working expenses were reduced by no less a sum than £61,846, making an aggregate decrease as compared with the March quarter of 1892 of £79,966.

The train mileage for the quarter has been reduced by 162,513 miles.

The most rigid economy is being exercised in the administration of the Department in all branches, and the general result for the nine months closed by this Report is as follows:—

Traffic decrease	£98,389
Decrease in Expenses	£99,586

The percentage the working expenses bear to the gross earnings for the nine months being 55·44 per cent.

CONDITION

CONDITION OF THE LINES AND ACCOMMODATION FOR THE TRAFFIC.

The work of thoroughly maintaining and, where necessary, improving the buildings and lines, has been continued, and the rolling-stock and permanent-way have been kept in an efficient condition. A large amount of replacement of iron rails by steel rails of greater weight, and renewal of sleepers with the best class of iron-bark of larger scantling, have been carried out during the nine months closed by this Report, a sum of £67,800 having been debited to working expenses for materials alone in connection with the permanent-way and works in that period. With regard to the rolling stock, for the repair and renewal of engines, carriages, wagons, &c., £209,021 has been charged to working expenses during the same period, a sum slightly in excess of that spent during the corresponding time of the preceding year for the same purposes; it will be thus seen that the value of the property is being well maintained.

TRAMWAYS.

GENERAL REMARKS.

The extension, Denham-street to Bondi Beach, a distance of 45 chains, was opened for traffic on the 19th of February last.

The tramway traffic shows a decrease of £2,578, but the working expenses have been reduced by £2,907.

The relaying and wood-blocking of the lines in George-street west is being proceeded with, and the tramway property generally is being kept in good order.

We have the honor to be,

Sir,

Your most obedient servants,

E. M. G. EDDY,
Chief Commissioner.

W. M. FEHON,
Commissioner.

CHARLES OLIVER,
Commissioner.

APPENDIX I.

NEW SOUTH WALES GOVERNMENT RAILWAYS.

REPORT upon the Condition of Lines for the quarter ending 31st March, 1894.

Sir,

Office of Engineer-in-Chief for Existing Lines, 13 April, 1894.

I have to report that the whole of the lines and works have been maintained in a thoroughly satisfactory state during the past quarter.

The heavy rains which fell in March caused an interruption of the traffic on the Northern Line between Newcastle and Maitland for two days, viz., the 7th and 8th, a considerable portion of the embankment on the northern side of Thornton having been washed away. Slight washaways also occurred at Quipolly and Gunnedah on the North-western Line, and slips on the Illawarra Line near Clifton, and on the Mudgee and Western Lines. The damage, however, was promptly repaired, and the lines are now in good order.

Satisfactory progress has been made with relaying, resleepering, renewing fences, and other improvements.

I have, &c.,

WILLIAM T. FOXLEE,

Engineer-in-Chief of the Existing Lines.

The Secretary to the Railway Commissioners.

APPENDIX II.

NEW SOUTH WALES GOVERNMENT RAILWAYS.

RETURN of Rates approved for the Quarter ending 31st March, 1894.

Article.	Rate.	Reason for rate.
Tallow, Sheepskins, and Casks.	Narrabri to Darling Harbour to be charged £2 4s. per ton (minimum 6 tons per four-wheeled truck to apply to tallow, 5 tons to sheepskins). The empty return tallow-casks, filled with tins, to be charged at B rates and conditions.	To secure traffic.
Glue Pieces	To be charged A rates in lots of 6 tons per four-wheeled truck.....	do do
Fruit.....	Albury to Sydney, by mail train, to be charged at goods rates at owners' risk.	do do
Flour, Bran, and Pollard ...	Murrumburrah to Bourke, to be charged at the same rate as from Cootamundra.	do do
Military Stores and Equipments.	To be charged half ordinary rates by goods trains ..	Special concession.
Flour.....	Jerilderie to Hay, in truck loads of 6 tons, to be charged at an equal distance on the down journey at the Special Up rate to that which it is carried on the up journey.	To encourage traffic.
Osmegston	To be charged A rates and conditions	New traffic.
By-products	From the Forbes Boiling-down Works to be charged through rates and conditions.	To encourage traffic.
Wheat	From stations south of Goulburn and west of Mount Victoria to stations north of Werris Creek, in 20 ton lots, in tubular wagons at the convenience of Department, to be charged at the Special Up journey grain rates until the 31st May, 1894.	do do
Ale	From Orange to Bourke, when carried in 6 ton lots and loaded in cattle wagons, to be charged at the rate of £4 10s. per ton.	To equalise rates.
Poultry Food and Biscuit Meal.	To be charged A rates and conditions	New traffic,

APPENDIX III.

NEW SOUTH WALES GOVERNMENT RAILWAYS AND TRAMWAYS.

RETURN, in accordance with Clause No. 44 of the Railway Act, showing the Appointments of Employees from the 1st January to the 31st March, 1894.

Date.	Name.	Position.	Rate.	Remarks.
1894.				
ENGINEER-IN-CHIEF FOR EXISTING LINES BRANCH.				
5 Mar.	Offwood, Edward	Fettler	7/6 per day	From Tramways, vice T. T. Thompson.
CHIEF MECHANICAL ENGINEER'S BRANCH.				
8 Mar.	Dowling, John H.	Cleaner	6/- per day	From Tramways, vice W. Stevenson.
1893.				
CHIEF TRAFFIC MANAGER'S BRANCH.				
25 Dec. 1894.	Hargrave, Ellen	Gatekeeper	Free house	Vice M. Adams.
4 Jan.	Steel, Mrs. Mary	Gatekeeper	Free house	Vice Mrs. Lett.
6 "	Fisher, Jane Ann	Gatekeeper	Free house	Vice E. Burns.
11 "	Meale, Geo. C.	Porter	7/- per day	Reinstated; vice C. Hopkins.
12 "	Elston, Albert	Junior porter	3/4 per day	From Electrical Engineer's Branch.
12 "	Reilly, Mrs.	Linen attendant	25/- per week	Vice H. Stephens.
22 "	M'Cullum, Kate	Gatekeeper	Free house	Vice Mrs. Knight.
23 "	Grant, John	Telephone boy	10/- per week	Vice D. Wells.
23 "	Strophair, Margaret	Gatekeeper	7/- per week	Vice M. Clifford.
24 "	James, George	Gatekeeper	15/- per week	Vice J. Crawford.
25 "	Moriarty, Ellen	Gatekeeper	Free house	Vice S. Knight.
29 "	Gelding, Jane	Gatekeeper	7/- per week	Vice E. Funnell.
31 "	Reid, Duncan	Gatekeeper	30/- per week	From Permanent Way, vice C. Tynan.
2 Feb.	Hannon, Margaret	Gatekeeper	7/- per week	Vice A. Sognies.
6 "	Hanley, Henrietta	Gatekeeper	Free house	Vice M. Reid.
9 "	Nicholls, Ada	Gatekeeper	Free house	Vice Mrs. Meale.
10 "	Sykes, Kate	Gatekeeper	7/- per week	Required for platform and gate.
12 "	Hughes, Norman	Probationer	2/6 per week	
12 "	Press, Margaret	Gatekeeper	Free house	Vice E. Russell.
12 "	Drummond, Mrs.	Gatekeeper	Free house	Vice Mrs. Berry.
14 "	Westlake, Thos.	Porter	7/- per day	Reinstated.
19 "	Harris, Martha	Gatekeeper	7/- per week	New crossing.
21 "	Booth, Sarah M.	Gatekeeper	Free house	Vice B. Booth.
23 "	Stephens, Amanda	Gatekeeper	7/6 per week	Vice J. Marlin.
6 Mar.	Doughan, Margaret	Gatekeeper	Free house	Vice J. Hassal.
12 "	O'Sullivan, Pat S.	Probationer	2/6 per week	Vice W. Bailey.
12 "	Sullivan, Mrs. Mary	Gatekeeper	Free house	Vice C. Lee.
12 "	Turner, Mrs. M. E.	Gatekeeper	7/- per week	Vice Mrs. Byrnes.
19 "	Shaw, Wm. John	Probationer	2/6 per week	
19 "	Ross, Matilda	Gatekeeper	10/- per week	Vice A. Cummins.
19 "	Driver, Hannah	Gatekeeper	5/- per week	Vice C. Ewels.
19 "	Mortimer, Mrs.	Gatekeeper	7/- per week	Vice B. Byron.
22 "	Kessill, Elizabeth	Gatekeeper	Free house	Vice S. Kemp.
24 "	Woolfe, Mrs. V.	Gatekeeper	Free house	Vice Mrs. Montgomery.
27 "	Hughes, Theresa	Caretaker	Free house	Vice Mrs. Farnsworth.
27 "	Haines, Emily	Caretaker	Free house	Vice Officer-in-charge withdrawn.
29 "	Farnsworth, Matilda	Gatekeeper	Free house	Vice S. Toohy.
30 "	Booth, Mary	Station mistress	10/- per week	Vice M. Booth.
31 "	Walsh, Catherine	Gatekeeper	7/- per week	Vice S. Peacock.
CONTROLLER OF STORES BRANCH.				
27 Mar.	Handfield, Chas. A.	Clerk	£250 per ann.	From Secretary's Branch, vice R. Bamford.
PROPERTY AND ESTATE BRANCH.				
12 Feb.	Little, Robert B.	Apprentice clerk	£50 per ann.	From Traffic Branch, vice A. W. Larmour.
ELECTRICAL ENGINEER'S BRANCH.				
1 Jan.	Craven, Henty	Operator	£90 per ann.	From Traffic Branch, vice J. M'Kenzie.
26 Feb.	Bailey, William D.	Probationer	2/6 per week	From Traffic Branch.
TRAMWAYS—LOCOMOTIVE BRANCH.				
10 Mar.	Stevenson, William A.	Cleaner	0/- per day	From Railways, vice J. Dowling.
TRAMWAYS—TRAFFIC BRANCH.				
16 Feb.	Stock, Henry	Junior conductor	5/- per day	From Railways, vice P. Cooper.
19 "	Large, Joseph	Junior conductor	5/- per day	From Railways, vice R. Wilson.
19 "	Canpey, Henry E.	Junior conductor	5/- per day	From Railways, vice G. Scott.
10 Mar.	Mackie, Robert D.	Junior conductor	5/- per day	From Railways, vice L. Lewis.
TRAMWAYS—MAINTENANCE BRANCH.				
5 Mar.	Thompson, Theodore	Labourer	7/6 per day	From Railways, vice E. Offwood.

APPENDIX IV.

NEW SOUTH WALES GOVERNMENT RAILWAYS AND TRAMWAYS.

RETURN, in accordance with Clause No. 44 of the Railway Act, showing the Removals of Employees from the 1st January to 31st March, 1894.

Date.	Name.	Position.	Rate.	Remarks.
1894.				
SECRETARY'S BRANCH.				
26 Mar.	Handfield, Charles A.	Clerk	£250 per ann.	To Stores Branch; position abolished.
ENGINEER-IN-CHIEF FOR EXISTING LINES BRANCH.				
1 Jan.	Knowles, James	Fettler	7/6 per day	Decreased; position abolished.
4 "	Martin, Patk.	Fettler	7/6 per day	Resigned.
6 "	Royal, John	Labourer	7/- per day	Retrenchment.
6 "	Tynan, Michael	Labourer	7/- per day	Retrenchment.
6 "	Budd, James	Labourer	7/- per day	Retrenchment.
8 "	Rootes, Swyer	Labourer	7/- per day	Retrenchment.
8 "	Mullens, James	Labourer	7/- per day	Retrenchment.

Date.	Name.	Position.	Rate.	Remarks.
1894.				
ENGINEER-IN CHIEF FOR EXISTING LINES BRANCH—continued.				
6 Jan.	Tynan, John	Labourer	7/- per day	Retrenchment.
6 "	Norberry, John	Labourer	7/- per day	Retrenchment.
6 "	Kennedy, John	Labourer	7/- per day	Retrenchment.
6 "	Jobson, James	Labourer	6/6 per day	Retrenchment.
6 "	Bates, James	Labourer	7/- per day	Retrenchment.
10 "	Grinrod, Albert	Fettler	7/6 per day	Discharged.
11 "	Purdon, John	Labourer	6/6 per day	Retrenchment.
11 "	M'Mulkin, James	Labourer	7/- per day	Resigned.
11 "	Yates, John	Labourer	6/6 per day	Retrenchment.
12 "	M'Fadden, John	Fettler	8/- per day	Deceased.
12 "	Sayers, Charles	Fettler	7/6 per day	Resigned.
18 "	Foster, Thomas	Labourer	7/6 per day	Retrenchment.
18 "	Armstrong, Peter	Labourer	7/6 per day	Retrenchment.
18 "	Sullivan, John	Fettler	7/6 per day	Retrenchment.
18 "	M'Inerney, Peter	Labourer	7/6 per day	Retrenchment.
18 "	Dewhurst, John	Fettler	7/6 per day	Retrenchment.
18 "	Dixon, William	Labourer	7/6 per day	Retrenchment.
18 "	Bell, Thomas	Fettler	7/6 per day	Retrenchment.
18 "	Reid, Duncan	Flagman	7/- per day	To Traffic Branch; position abolished.
18 "	Williams, George	Flagman	7/- per day	Retrenchment.
20 "	Parsons, Christopher	Labourer	7/6 per day	Retrenchment.
20 "	Franklin, Alfred	Labourer	9/- per day	Retrenchment.
20 "	Stubbings, Matthew	Labourer	7/6 per day	Retrenchment.
20 "	Rates, William	Labourer	7/6 per day	Retrenchment.
24 "	Horner, Charles Henry	Labourer	7/- per day	Retrenchment.
31 "	Duncanson, James	Labourer	7/- per day	Retrenchment.
31 "	Murphy, Patrick	Labourer	7/- per day	Retrenchment.
5 Feb.	O'Shea, Michael	Labourer	7/6 per day	Resigned.
7 "	Smith, William	Fettler	7/6 per day	Resigned.
13 "	O'Shea, Thomas	Labourer	7/6 per day	Retrenchment.
14 "	Clark, George	Carpenter	11/- per day	Retrenchment.
15 "	Brown, William	Fettler	7/6 per day	Resigned.
17 "	M'Callfrey, John	Labourer	7/6 per day	Resigned; position abolished.
19 "	M'Dermott, John	Labourer	7/- per day	Retrenchment.
20 "	Wilson, Allen	Fettler	7/- per day	Resigned.
23 "	Hazel, John	Labourer	7/6 per day	Retrenchment.
23 "	M'Grath, David	Fettler	7/- per day	Retrenchment.
24 "	Freight, Henry	Labourer	7/6 per day	Retrenchment.
28 "	Bradwell, John	Fettler	6/6 per day	Retrenchment.
28 "	Madin, Bernard	Labourer	6/6 per day	Retrenchment.
28 "	Abraham, John A.	Labourer	7/- per day	Retrenchment.
28 "	Jackson, John J.	Labourer	7/- per day	Retrenchment.
28 "	Trunley, John	Labourer	6/6 per day	Retrenchment.
28 "	M'Aviney, James	Labourer	7/- per day	Retrenchment.
28 "	Atkins, Thomas	Labourer	7/6 per day	Retrenchment.
28 "	Cole, Charles William	Labourer	7/- per day	Retrenchment.
28 "	Howe, Michael	Labourer	6/6 per day	Retrenchment.
2 Mar.	Burgess, William	Labourer	6/6 per day	Retrenchment.
3 "	Hewston, John	Ganger	9/- per day	Retired.
3 "	Dixon, Samuel	Ganger	9/- per day	Resigned.
5 "	Thompson, Theodore	Fettler	7/6 per day	To Tramway Branch.
7 "	Foreman, James	Fettler	7/6 per day	Retrenchment.
7 "	Taylor, George	Labourer	7/- per day	Retrenchment.
7 "	Taylor, Thomas	Fettler	7/6 per day	Retrenchment.
8 "	Bowden, Nicholas	Fettler	7/6 per day	Retrenchment.
8 "	Deeley, George	Labourer	7/6 per day	Retrenchment.
8 "	Curran, David	Fettler	7/6 per day	Retrenchment.
8 "	Dennisson, Thomas	Labourer	7/6 per day	Retrenchment.
8 "	Fisher, Frank	Fettler	7/6 per day	Retrenchment.
8 "	Montgomery, John	Fettler	7/6 per day	Retrenchment.
8 "	Baird, William	Fettler	7/6 per day	Retrenchment.
8 "	Graham, Robert	Labourer	7/6 per day	Retrenchment.
10 "	Harland, Charles	Fettler	7/- per day	Retrenchment.
10 "	Duke, Alfred	Labourer	7/6 per day	Retired.
17 "	Perfect, Henry	Improver	7/- per day	Retrenchment.
17 "	Matthews, Richard	Timber Inspector	11/- per day	Retrenchment.
17 "	Bayles, George	Tool Collector	7/6 per day	Retrenchment.
17 "	Brown, Charles	Labourer	7/6 per day	Retrenchment.
17 "	Carroll, John	Labourer	7/6 per day	Retrenchment.
17 "	Harrison, Walter	Labourer	7/6 per day	Retrenchment.
17 "	Conlin, John	Labourer	7/6 per day	Retrenchment.
17 "	Lester, Edward	Fettler	7/6 per day	Retrenchment.
17 "	Pentty, Thomas	Labourer	7/6 per day	Retrenchment.
17 "	Waddophs, Richard	Labourer	7/6 per day	Retrenchment.
17 "	M'Grath, John	Fettler	7/6 per day	Retrenchment.
17 "	Stephens, Alexander	Carpenter	11/- per day	Retrenchment.
17 "	Paino, James	Carpenter	8/6 per day	Retrenchment.
17 "	Fitton, John	Fitter	10/- per day	Retrenchment.
17 "	Pettit, Alfred	Painter	9/2 per day	Retrenchment.
17 "	New, Mark	Rough Carpenter	10/- per day	Retrenchment.
17 "	Bowler, James	Bricklayer	11/- per day	Retrenchment.
17 "	Brown, James	Labourer	7/6 per day	Retrenchment.
17 "	Elsley, Charles	Rough Carpenter	9/6 per day	Retrenchment.
17 "	Phillips, James	Labourer	7/6 per day	Retrenchment.
22 "	Bell, George	Fettler	7/6 per day	Resigned.
22 "	Lowe, William	Fettler	7/- per day	Resigned.
28 "	Ward, Patrick	Fettler	7/6 per day	Retrenchment.
28 "	M'Grath, Denis	Fettler	7/6 per day	Retrenchment.
28 "	Broderick, Owen	Fettler	7/6 per day	Retrenchment.
27 "	Alston, Robert	Fettler	7/6 per day	Retrenchment.
28 "	O'Donnell, John	Fettler	7/6 per day	Discharged; position abolished.
28 "	Hazlewood, William	Labourer	7/6 per day	Retrenchment.
28 "	Waldron, Thomas	Labourer	7/6 per day	Retrenchment.
28 "	Jones, Thomas	Labourer	7/6 per day	Retrenchment.
29 "	Simpson, William	Labourer	7/6 per day	Discharged.
30 "	Murphy, Gerald	Fettler	7/6 per day	Retrenchment.
30 "	O'Neil, Francis	Inspector of timber	12/6 per day	Retrenchment.
30 "	Foreman, John	Fettler	7/6 per day	Deceased.
31 "	Bourke, Edward	Labourer	7/6 per day	Resigned.
CHIEF MECHANICAL ENGINEER'S BRANCH.				
24 Jan.	Smith, John R.	Hand packer	10/- per day	Retrenchment.
26 "	Adamson, Andrew	Cleaner	7/- per day	Retrenchment.
26 "	Calvert, John	Cleaner	7/- per day	Retrenchment.
25 "	Dodds, Edward	Apprentice	10d. per day	Resigned; position abolished.
27 "	Thomas, Joseph	Cleaner	7/- per day	Retrenchment.
27 "	Plunkott, John	Cleaner	7/- per day	Retrenchment.
30 "	Bellerby, John	Cleaner	7/- per day	Retrenchment.
30 "	Gow, Charles S.	Cleaner	7/- per day	Retrenchment.
30 "	Grant, William	Cleaner	7/- per day	Retrenchment.
3 Feb.	Davidson, John	Driver	13/- per day	Deceased; position abolished.
6 "	Wallace, Henry	Cleaner	7/- per day	Retrenchment.
8 "	Knapp, Henry	Cleaner	7/- per day	Retrenchment.
8 "	Stevenson, Maitland	Cleaner	7/- per day	Retrenchment.
9 "	Fleming, James	Fitter	12/4 per day	Resigned; position abolished.

Date.	Name.	Position.	Rate.	Remarks.
1894. CHIEF MECHANICAL ENGINEER'S BRANCH—continued.				
9 Feb.	Smith, Henry	Cleaner	7/- per day	Retrenchment.
15 "	Dowds, William	Driller	8/- per day	Resigned.
17 "	Shallick, George	Fuelman	7/- per day	Resigned.
17 "	Spence, Robert	Cleaner	7/- per day	Retrenchment.
19 "	Byrnes, James	Cleaner	7/- per day	Retrenchment.
22 "	Dodds, Fenwick	Cleaner	7/- per day	Retrenchment.
22 "	Byrne, Charles M.	Cleaner	7/- per day	Retrenchment.
22 "	Elliott, David	Cleaner	7/- per day	Retrenchment.
22 "	King, James	Cleaner	7/- per day	Retrenchment.
22 "	Ireland, Rupert	Cleaner	7/- per day	Retrenchment.
22 "	M'Loughlin, John	Cleaner	7/- per day	Retrenchment.
22 "	Gordon, James	Cleaner	7/- per day	Retrenchment.
23 "	Giblett, Alfred H.	Labourer	7/- per day	Retrenchment.
23 "	Swan, Charles	Fitter	10/- per day	Resigned; position abolished.
23 "	Hurd, William	Car & Waggon Examiner	8/3 per day	Deceased; position abolished.
1 Mar.	Stafford, Robert	Cleaner	7/- per day	Retrenchment.
1 "	Brodli, Thomas	Cleaner	7/- per day	Retrenchment.
1 "	Ritche, James	Cleaner	7/- per day	Retrenchment.
1 "	Boylan, James	Plumber	10/8 per day	Retrenchment.
1 "	Shochridge, George	Carpenter	10/- per day	Retrenchment.
1 "	M'Lean, Angus	Hirman	10/- per day	Discharged; position abolished.
1 "	Mackie, R. D.	Call Boy	4/- per day	To Tramways; position abolished.
2 "	Sims, Richard	Cleaner	5/6 per day	Retrenchment.
2 "	Sinclair, William	Cleaner	7/- per day	Retrenchment.
3 "	Powell, Sid.	Cleaner	7/- per day	Retrenchment.
5 "	Pope, Frank	Cleaner	7/- per day	Retrenchment.
5 "	Mugrove, P. D. L.	Cleaner	7/- per day	Retrenchment.
7 "	Brown, Robert	Bollermaker	10/8 per day	Deceased; position abolished.
7 "	Jones, Adam	Driver	14/- per day	Resigned; position abolished.
8 "	Reidy, Cornelius	Cleaner	7/- per day	Retrenchment.
8 "	M'Keown, William	Cleaner	7/- per day	Retrenchment.
8 "	Thick, William	Cleaner	7/- per day	Retrenchment.
8 "	Duke, Alfred	Cleaner	7/- per day	Retrenchment.
10 "	Stevenson, William	Cleaner	5/6 per day	To Tramways.
13 "	Critchley, Charles	Labourer	7/8 per day	Resigned; position abolished.
19 "	Dewhurst, Joseph	Cleaner	7/- per day	Retrenchment.
20 "	Homer, Charles	Fuelman	7/- per day	Resigned; position abolished.
22 "	Byrne, Austin	Cleaner	5/6 per day	Retrenchment.
22 "	Fryer, Thomas	Cleaner	6/- per day	Retrenchment.
22 "	Holt, Samuel	Cleaner	6/- per day	Retrenchment.
26 "	Root, Alexander	Cleaner	7/- per day	Retrenchment.
29 "	Campbell, Percy	Cleaner	5/6 per day	To Tramways; position abolished.
29 "	Dobbio, William	Pumper	8/4 per day	Discharged; position abolished.
1893. CHIEF TRAFFIC MANAGER'S BRANCH.				
22 Dec.	Wakeling, Jas.	Officer-in-charge	£150 per ann.	Retrenchment.
27 "	Craven, Hy	Operator	£80 per ann.	To Electrical Engineer's Branch; position abolished.
28 "	Adams, Martha	Gatekeeper	Free house	Resigned.
28 "	Cochrane, David	Clerk	£120 per ann.	Retrenchment.
29 "	Guern, John	Porter	7/- per day	Retrenchment.
31 "	Boehme, Gustave	Wool Inspector and Collector.	£200 per ann.	Resigned.
1894.				
2 Jan.	Stephens, Henry	Gatekeeper	30/- per week	Retired.
5 "	Hunter, Wm.	Porter	7/- per day	Retrenchment.
5 "	Maher, Wm.	Porter	7/6 per day	Retrenchment.
5 "	Burns, Ellen	Gatekeeper	Free house	Resigned.
10 "	M'Guckin, John	Porter	7/- per day	Retrenchment.
11 "	Hopkins, Chas.	Porter	7/- per day	Resigned.
11 "	Wear, John	Assistant guard.	5/0 per day	Retrenchment.
12 "	Peck, Geo	Shunter	7/0 per day	Deceased; position abolished.
13 "	Robey, Robert	Junior clerk	£120 per ann.	Retrenchment.
18 "	Wright, Percy	Junior porter	5/- per day	Retrenchment.
20 "	Wells, Douglas	Telegraph boy	2/6 per day	Deceased.
22 "	Knight, Mrs Mary	Gatekeeper	Free house	Resigned.
23 "	Crawford, John	Gatekeeper	15/- per week	Resigned.
23 "	Clifford, Mary	Gatekeeper	7/- per week	Resigned.
24 "	Blondahl, Oscar	Porter	7/- per day	Retrenchment.
24 "	Funnell, Emma	Gatekeeper	7/- per week	Resigned.
25 "	Ford, Frank	Porter	7/- per day	Retrenchment.
25 "	Knight, Sarah	Gatekeeper	Free house	Resigned.
29 "	Curtis, Wm.	Flagman	7/6 per day	Retrenchment.
29 "	Hill, Alfred Ernest	Porter	7/- per day	Retrenchment.
30 "	Tynan, Catherine	Gatekeeper	10/- per week	Resigned.
30 "	Hicks, Ernest	Probationer	2/6 per week	Retrenchment.
1 Feb.	Sognies, Ann	Gatekeeper	7/- per week	Resigned.
1 "	Little, Robt. B.	Apprentice Clerk	£50 per ann.	To Property and Estate Branch; position abolished.
5 "	Keld, Mary	Gatekeeper	Free house	Resigned.
7 "	Murphy, John	Collector's Boy	1/8 per day	Retrenchment.
8 "	Meade, Mrs.	Gatekeeper	Free house	Resigned.
8 "	Frost, Wm. E.	Junior Porter	3/4 per day	Deceased.
10 "	M'Donald, Donald	Porter	7/- per day	Retrenchment.
10 "	Russell, Elizabeth	Gatekeeper	Free house	Resigned.
12 "	Berry, Mrs.	Gatekeeper	Free house	Resigned.
12 "	Deane, James	Watchman	7/- per day	Retrenchment.
16 "	M'Manus, John W.	Junior Porter	5/- per day	Retrenchment.
16 "	Donaldson, Andrew	Junior Porter	4/2 per day	Retrenchment.
19 "	Colls, Edward J.	Junior Porter	5/- per day	Retrenchment.
19 "	Joyce, Jos. V.	Night Officer	£130 per ann.	Discharged; position abolished.
19 "	Frazer, Edward	Night Officer	£130 per ann.	Discharged; position abolished.
19 "	Cook, Jos. S.	Night Officer	£130 per ann.	Discharged; position abolished.
22 "	Murphy, Mrs.	Gatekeeper	7/- per week	Retrenchment.
22 "	Weaver, Sydney	Probationer	2/6 per week	Retrenchment.
22 "	Martin, Ida	Gatekeeper	7/6 per week	Resigned.
22 "	Hughes, Hy.	Night Officer	£130 per ann.	Retrenchment.
24 "	Monro, James	Signalman	10/6 per day	Retrenchment.
24 "	Bailey, Wm. D.	Probationer	2/6 per week	To Electrical Engineers' Branch.
27 "	Haring, Arch.	Porter	7/- per day	Retrenchment.
28 "	James, Wm.	Porter	7/- per day	Retrenchment.
28 "	Lake, Carl	Porter	7/- per day	Retrenchment.
28 "	M'Donald, Wm.	Porter	7/- per day	Retrenchment.
28 "	Whelan, Chas. J.	Clerk	£260 per ann.	Retrenchment.
28 "	Bowditch, Clarence	Junior Clerk	£80 per ann.	Retrenchment.
1 Mar.	Jones, Samuel	Porter	6/- per day	Retrenchment.
2 "	Field, Thomas	Guard	10/6 per day	Deceased; position abolished.
3 "	Johnson, John	Junior Porter	5/- per day	To Tramway Department; position abolished.
4 "	Foster, James	Porter	7/6 per day	Retrenchment.
8 "	Wilbow, Louisa	Gatekeeper	Free house	Position abolished.
8 "	Butler, William	Porter	45/- per week	Deceased; position abolished.
8 "	Lee, Catherine	Gatekeeper	Free house	Resigned.
9 "	Ilea, John	Goods clerk	£140 per ann.	Retrenchment.
9 "	Cummins, Annie	Gatekeeper	10/- per week	Resigned.
10 "	Egan, Patrick	Porter	7/- per day	Retrenchment.
10 "	Smith, Ernest C.	Signalman	5/6 per day	Retrenchment.
11 "	Byrnes, Mrs. C.	Gatekeeper	7/- per week	Resigned.
15 "	Yeldou, Archibald	Junior porter	5/- per day	Retrenchment.

Date.	Name.	Position.	Rate.	Remarks.
1894.				
CHIEF TRAFFIC MANAGER'S BRANCH—continued.				
15 Mar.	Ewels, Catherine	Gatekeeper	5/- per week	Resigned.
15 "	Hudson, Samuel F.	Apprentice clerk	£40 per ann.	Retrenchment.
17 "	Flynn, Michael	Porter	8/- per day	Retrenchment.
17 "	Hodges, Alfred James	Porter	7/- per day	Retrenchment.
20 "	Donohoe, James	Junior porter	5/- per day	Retrenchment.
20 "	Byron, Bridget	Gatekeeper	7/- per week	Resigned.
22 "	Connelly, Daniel	Porter	7/- per day	Retrenchment.
25 "	Burns, William	Night porter	8/- per day	Deceased; position abolished.
31 "	Fenton, Henry	Clerk	£165 per ann.	Retrenchment.
31 "	Cochrane, Thomas N.	Clerk	£180 per ann.	Retrenchment.
31 "	Fisher, Jabez A.	Clerk	£150 per ann.	Retrenchment.
31 "	Davies, David L.	Clerk	£120 per ann.	Retrenchment.
31 "	Dutton, Henry	Officer-in-charge	£140 per ann.	Retrenchment.
22 "	Kemp, Sophia	Gatekeeper	10/- per week	Resigned.
21 "	M'Keown, Patrick C.	Junior porter	3/4 per day	Retrenchment.
24 "	Montgomery, Mrs. M.	Gatekeeper	Free house	Resigned.
27 "	Farnsworth, Mrs.	Caretaker	Free house	Resigned.
28 "	Warne, Francis	Junior porter	5/- per day	Retrenchment.
29 "	Toohy, Sarah	Gatekeeper	Free house	Resigned.
30 "	Booth, Mary Ann	Station-mistress	10/- per week	Resigned.
30 "	Walton, Storey	Gatekeeper	30/- per week	Retrenchment.
31 "	Grimwood, R. Herbert	Officer-in-charge	£165 per ann.	Retrenchment.
31 "	Peacock, Susan	Gatekeeper	7/- per week	Resigned.
SIGNAL AND INTERLOCKING BRANCH.				
18 Jan.	M'Donald, J.	Carpenter	10/6 per day	Retrenchment.
23 "	Fitzosborne, James	Labourer	7/6 per day	Retrenchment.
25 "	Hubert, William	Carpenter	11/- per day	Retrenchment.
25 "	Lankster, John	Carpenter	10/- per day	Retrenchment.
25 "	Coomes, William	Carpenter	10/- per day	Retrenchment.
25 "	M'Corr, William	Carpenter	10/- per day	Retrenchment.
30 "	Harding, Alfred	Labourer	7/6 per day	Discharged; position abolished.
12 Feb.	Thompson, William	Fitter	10/- per day	Retrenchment.
12 "	Graham, John	Labourer	7/6 per day	Retrenchment.
12 "	Munroe, George	Striker	7/6 per day	Retrenchment.
12 "	Fordham, George	Striker	7/6 per day	Retrenchment.
15 "	Garred, Edward	Signal-fitter	8/- per day	Retrenchment.
15 "	Furey, J.	Labourer	7/6 per day	Retrenchment.
15 "	Dillon, M.	Labourer	7/6 per day	Retrenchment.
22 "	Blanks, Thomas	Striker	6/6 per day	Retrenchment.
26 "	Gowan, William	Labourer	7/6 per day	Retrenchment.
28 "	Pand, Hugo	Draughtsman	£280 per ann.	Retrenchment.
5 Mar.	Dickens, George	Labourer	7/6 per day	Retrenchment.
15 "	Black, John	Striker	7/6 per day	Retrenchment.
15 "	Turner, Thomas	Striker	7/6 per day	Retrenchment.
15 "	Turner, T. J.	Striker	7/6 per day	Retrenchment.
15 "	Saunders, John	Striker	7/6 per day	Retrenchment.
22 "	Wright, William	Carpenter	13/- per day	Retrenchment.
PROPERTY AND ESTATE BRANCH.				
20 Jan.	Larmour, Alfred W.	Apprentice Clerk	£50 per ann.	Resigned.
ELECTRICAL ENGINEER'S BRANCH.				
1 Jan.	Ash, William	Probationer	2-6 per week	Discharged.
5 "	M'Kenzie, John	Operator	£110 per ann.	Discharged.
12 "	Elston, Albert	Switcher	11/7 per week.	To Traffic Branch.
TRAMWAYS—LOCOMOTIVE BRANCH.				
21 Feb.	Whitlock, Wm.	Driver	13/- per day	Left the service.
15 Mar.	Crowley, Edward	Driver	13/- per day	Resigned.
22 "	Orchard, Oliver	Driver	11/- per day	Left.
27 "	Dowling, John H.	Fireman	7/6 per day	To Railways
28 "	Vargen, Herbert G.	Fitter	10/- per day	Discharged; position retrenched.
TRAMWAYS—TRAFFIC BRANCH.				
16 Feb.	Swain, Daniel	Pointsman	7/6 per day	Deceased; position retrenched.
28 "	Francis, Robert	Conductor	9/- per day	Resigned; position retrenched.
17 Mar.	Ryan, Wm.	Conductor	9/- per day	Resigned.
23 "	Hutcheson, Thos. H.	Assistant conductor	5/- per day	Resigned.
TRAMWAYS—MAINTENANCE BRANCH.				
5 Mar.	Offwood, Edward	Labourer	7/6 per day	To Railways.

1894.

NEW SOUTH WALES.

PARLIAMENTARY STANDING COMMITTEE ON
PUBLIC WORKS.

REPORT

TOGETHER WITH

MINUTES OF EVIDENCE, APPENDICES, AND PLANS,

RELATING TO THE

PROPOSED RAILWAY

FROM

NARRABRI TO MOREE.

Presented to Parliament in accordance with the provisions of the Public Works Act,
51 Vic. No. 37.

SYDNEY : CHARLES POTTER, GOVERNMENT PRINTER.

MEMBERS OF THE COMMITTEE.

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 The Honorable JAMES HOSKINS.
 The Honorable FREDERICK THOMAS HUMPHERY.
 The Honorable JOHN DAVIES, C.M.G.
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 THOMAS THOMSON EWING, Esquire.
 WILLIAM McCOURT, Esquire.
 EDWARD WILLIAM O'SULLIVAN, Esquire.
 HENRY DAWSON, Esquire.

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PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS.

RAILWAY FROM NARRABRI TO MOREE.

REPORT.

THE PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS, appointed during the first session of the present Parliament, under the Public Works Act of 1888, 51 Vic. No. 37, the Public Works Act Amendment Act of 1889, 52 Vic. No. 26, and the Public Works (Committees' Remuneration) Act of 1889, 53 Vic. No. 11, to whom was referred the duty of considering and reporting upon "the expediency of constructing a line of railway from Narrabri to Moree, such work to be subject to the provisions of any Act that may be passed dealing generally with the 'betterment principle' with regard to public works," have, after due inquiry, resolved that it is expedient the railway should be constructed, and in accordance with the provision of sub-section IV, of clause 13, of the Public Works Act, report their resolution to the Legislative Assembly:—

1. Departmental action in connection with the proposed railway dates back as far as 1883, when a rough estimate, based on the results of a trial survey, represented the cost of construction as £539,500, or sixty-seven miles at £8,053 per mile. At that cost the line would be of the substantial character of the railway system generally of the Colony, and it was thought that a more lightly-constructed railway would meet requirements. Further investigation was therefore made, with the result that the estimate of cost was considerably reduced, and on the Loan Estimates for 1884 a sum of £336,500 was voted for the line under the heading of "Light Lines." Two years afterwards the plan, section, and book of reference of the proposed railway were approved by the Legislative Assembly in a division of fifty votes to four; but further progress was interfered with by the Legislative Council, when the matter came before that House, referring the line as proposed to a Select Committee for inquiry. This inquiry was not completed in the session during which the line was referred to the Select Committee, and it was not afterwards resumed. The matter remained in abeyance for a time, and then was again brought into notice by the Parliamentary representatives of the electorates particularly concerned in it. The Railway Commissioners also expressed themselves favourable to the railway being constructed, and in 1889 pointed out its advantages to the districts in the neighbourhood of Moree, and to the Colony. The line might, the Commissioners thought, be laid down as a cheap railway on a basis suggested by Sir John Fowler in a report made in March, 1886, the cost being stated in this report at about £2,500 per mile. On that basis, and with little or no fencing, inexpensive though ample station accommodation, and the running of trains in the daytime only, the line, they were of opinion, would prove remunerative. In April, 1889, they visited the district, and as a consequence of their inspection suggested that from Narrabri the line should go westward to Gurleigh Point, and thence northwards to Moree. This deviation to the west from Narrabri was also recommended in 1891 by Mr. R. E. Jones, Temporary Examiner of Public Works Proposals. It was, however, afterwards found to be undesirable,

History of the proposal to construct the railway.

undesirable, by reason of the fact that a much better and less costly crossing of the Namoi River was discovered nearer Narrabri, and on the route ultimately decided upon and referred by the Legislative Assembly to this Committee. While the investigation and recommendations in regard to the line were proceeding, the estimated cost was further reduced, and in 1892 the Railway Commissioners, in a minute to the Minister for Railways, advocated the construction through purely pastoral and level country, where the traffic would be light, of "pioneer lines," not so substantial as "light lines," and yet sufficient for the work expected from them, the cost of which should be about £1,750 per mile, exclusive of bridges, waterways, and station accommodation. This estimate the Engineer-in-Chief for Railway Construction thought too favourable, but on further consideration, he found that by adopting the route referred to the Committee the cost, exclusive of land and compensation, would not exceed £153,000, or about £2,409 per mile.

Description
of the pro-
posed railway.

2. The proposed railway (coloured red on the plan) is 63 miles 50 chains in length, and is almost straight. Leaving the North-Western Railway near Narrabri station, it crosses the Namoi River and the Narrabri Creek on two wooden bridges a little to the south-east of the ordinary road crossing, and then skirting the southern and eastern boundaries of the town of Narrabri it proceeds in a generally northern direction to Moree, terminating on the southern side of the river Gwydir. The country traversed is mostly flat, consisting largely of black soil, and crossed by several creeks, which have their sources in the Nandewar range of mountains some 15 miles to the west of the line. Being flat, the country in wet seasons is more or less flooded, but protection to the railway line will be afforded by waterways, boxdrains, and culverts wherever they may be necessary. As the railway is regarded as what is termed a "pioneer line," or the first of a cheaply-constructed system of railways, it is proposed that the ballasting be very much less than is ordinarily carried out. On ordinary lines from 2,000 to 2,200 cubic yards of ballast per mile are put down, but in the present case, to save first expense, the usual quantity of ballast has been reduced to 1,200 cubic yards per mile, or 3 inches of ballast under the sleepers, a quantity which is about one-half or two-thirds less than is generally used. Also, to save expense, it is intended that the rails used shall be mostly double-headed re-rolled rails which are in stock in the stores of the Department of Public Works and the Department of Railways, and some second-hand rails in fairly good condition which will be taken from the main railway line, the balance being made up of some 71½ lb. steel flat-bottomed rails. Forty-eight miles 30 chains of the line will be laid with the re-rolled rails, 12 miles with the second-hand rails, and 4 miles 70 chains with new rails. These distances being a little beyond the total length of the line, allow something for sidings. The sleepers, like the ballast and the rails, are to cost less than is usually spent upon them. They will not be the ordinary rectangular sleepers, but will be roughly hewn and round on the top; the sapwood being left on in all cases where, when the way is cut to fix on the chairs, there is a sufficient width of hardwood to take the bearing. The bridges erected will be of timber and while substantially built will be as plain as possible. Fencing will only be carried out at the railway stations and where absolutely necessary, so that virtually the line will be unfenced. Fencing is regarded as unnecessary from the circumstances that the maximum speed of the trains will not exceed 15 miles an hour, and they will not run at night. The rolling stock used on the line will be of the lightest kind. Stations will be placed between the termini at Edgeroi, 16 miles from Narrabri; Woolabrar, 28 miles; Gurley, 41 miles; and Tycannah, 49 miles. The grade of the railway will be "1 in 100 against Newcastle and 1 in 75 outwards."

Other routes
for the rail-
way.

3. Three routes by which a railway may be taken from Narrabri to Moree, other than that set forth in the proposal referred to the Committee, have been informally before the Committee in their inquiry, and are represented on the plan showing the route it is proposed shall be adopted. The proposed route is coloured red. The three other routes are shown respectively in blue, green, and yellow. That coloured blue, and known as the permanently staked route, was decided upon some years ago, and subsequently abandoned because the river-crossing near Narrabri connected with it was bad, because it passed Narrabri 2 or 3 miles away to the west; and because the earthworks upon it were likely to be unnecessarily heavy.

heavy. It is, however, the most direct and the shortest route that could be adopted. The route coloured green is called the travelling stock route, from the circumstance that the line would follow the route used by drovers for almost the whole of the distance from Narrabri to Moree. Leaving Narrabri on the west the railway would by this route proceed by the travelling stock route, first in a north-westerly direction to a point $4\frac{1}{2}$ miles east of Millie, and thence north-easterly, still keeping to the travelling stock route, to Moree. The yellow route is what is known as the Gurleigh Point route. It starts from the present terminus of the North-Western railway, and going westerly, with a slight inclination to the north, along the south bank of the Namoi River, crosses the river at Gurleigh Point, $6\frac{1}{2}$ miles east of Wee Waa, and then, proceeding northwards, joins the travelling stock route on the south side of Boggy Creek, about $28\frac{1}{2}$ miles from Narrabri station. The travelling stock route and the Gurleigh Point route being considerably more to the west than the route proposed for the railway, are regarded as those which are most in the interests of population and trade in the western and north-western districts.

4. The estimated total cost of the railway is £153,000, or about £2,409 per mile. The first $3\frac{1}{2}$ miles of the line are the most expensive, as in that distance are included bridges across the Namoi River and Narrabri Creek, and a new railway station at Narrabri. Dividing the total cost into two parts, the Engineer-in-Chief estimates that the first part, comprising 3 miles 56 chains of line at the Narrabri end and including the bridges and the new railway station, will be constructed for £17,500, or £3,866 per mile. The second part, a length of 59 miles 74 chains, will cost £135,500, or £2,267 per mile. The estimated cost of the line does not include land and compensation, but the amount that may be paid for land resumption and compensation is not likely to be very large. Estimated cost.

5. The railway is recommended by the Railway Commissioners on the ground "that it will tend to largely develop a considerable tract of valuable country, and will be an extension of the existing North-Western Line in a direction which will probably at a future date warrant a continuation to the Queensland border." They are favourable to the line also because, to a large extent, it has been designed in accordance with views they "have from time to time expressed on the subject of extensions into the pastoral districts." Their estimate of the annual cost of the railway and of the probable traffic returns, shows a slight loss at the commencement, but the profitableness of the line in the near future they do not doubt. According to their report the working expenses per year would be £7,000, and adding this to the amount of interest on the capital expenditure, calculated at 4 per cent., which would be £6,120, the estimated total annual cost is £13,120. Against this the traffic estimate shows £2,300 for passengers and mails, and £9,915 for goods, or in all £12,215, a deficiency of £905. In 1892 the Commissioners urged upon the Government the importance of constructing this railway. In a minute, dated 4th November, 1892, and addressed to the Minister for Railways, they say: "Referring to the conversations the Chief Commissioner has had with you on one or two occasions respecting cheap lines through pastoral country, we beg to state that in our opinion the most urgent lines to make at the present time are those from Narrabri to Moree, and from Bourke to a point on the Queensland border northward of Bourke. . . . Unless these lines are made . . . a large traffic we have enjoyed for many years will be abstracted from us." Railway Commissioners' Report.

6. The inquiry which the Committee have made respecting the proposed railway has been very searching. Nine meetings have been held by the Committee for the taking of evidence, and at those meetings twenty witnesses were examined. Nine meetings were also held by a Sectional Committee, who visited the Narrabri and Moree districts, and at those meetings sixty-one witnesses gave evidence. In all, eighty-one persons have expressed their views upon the subject of the railway to the Committee, and as the evidence given deals with the alternative routes for the line as well as that in the proposal referred to the Committee the information obtained is very complete. The taking of evidence relating to the routes other than that specially before the Committee became necessary by reason of The Committee's inquiry.

of pressing requests to be heard being received from representative organisations, as well as individuals, in important centres of population and trade. To decline to hear the advocates of a route different from that proposed by the Government would not only be unfair to many local residents, but would materially lessen the means available to the Committee for arriving at a right decision. The case generally as regards the railway was very fully explained to the Committee by the Under Secretary for Public Works, and following him there were examined: the Chief Draftsman, Department of Lands; the Engineer-in-Chief for Railway Construction; the Secretary to the Railway Commissioners; the Railway Goods Superintendent; the surveyor of the Railway Construction Branch of the Department of Public Works, who was employed in the survey of the proposed line; the District Surveyor, who superintends the Crown land business of the Narrabri district; an officer from the Stock Branch of the Department of Mines; an engineer of the Roads Branch of the Department of Public Works, who, in 1891, as Temporary Examiner of Public Works Proposals, reported on the subject of the proposed railway; and a number of other witnesses, more or less acquainted with the country, population, and trade which would be affected by the line, who desired to give evidence, and appeared before the Committee at their own request. Immediately the departmental evidence had been heard a Sectional Committee was appointed, and they, visiting the Narrabri and Moree districts, examined witnesses at Narrabri, Millie, Moree, and Wee Waa.

Sectional
Committee's
report.

7. The Sectional Committee's report is favourable to the construction of the railway as proposed, but they are of opinion that in view of the importance of the trade in the districts west and north-west of Narrabri and Moree a full exploration and survey should be made of the country towards Collarendabri, with the object of running a branch line in that direction.

The evidence.

8. The evidence given in the inquiry both before the Committee and the Sectional Committee is conflicting, many of the opinions expressed and statements made being largely influenced by local interests; but the Committee arrived at a decision upon those points in the case which are the most important. These are:—

- (1) Objects in view in constructing the railway.
- (2) Expected traffic.
- (3) Suitableness or otherwise of the route.
- (4) Question of cost.
- (5) Method of construction.

Objects in
view in
constructing
the railway.

9. The principal object in view in constructing the railway is, as indicated by the Railway Commissioners, to retain for the railways of this Colony a traffic from the districts near the southern border of Queensland which legitimately belongs to New South Wales, and which, unless railway communication be extended northwards from Narrabri, will go elsewhere. Another reason for constructing the line is the desirableness of developing more rapidly than can take place in existing circumstances a large tract of country, which for natural richness and for productiveness, is equal to country in any other part of New South Wales. The Sectional Committee explain in their report that the area of this country "extends approximately from Inverell on the east to beyond Angledool on the west, and from the Namoi River on the south to the boundary of the Colony on the north."

Expected
traffic.

10. The traffic expected on the line is principally wool, but also stock, general merchandise, and passengers; and the traffic estimate appears to have been very carefully made. For this purpose the district was specially visited by the Railway Goods Superintendent, and only trade certain to come to the railway was taken into account. Anything at all doubtful, the Committee are assured, was omitted. It is, therefore, very probable that the actual traffic will exceed the estimate. Mr. Harper, the officer who obtained the information upon which the estimate is based, seems from his evidence to be well acquainted with the country which the railway will serve, its products, and its trade requirements; and no reason is apparent why his figures should be doubted. The railway rates upon which the revenue part of the estimate is calculated are the ordinary rates at present charged on the railways of the Colony.

11. The route of the railway has been chosen because it is direct, is not to a serious extent affected by floods, and presents a good crossing over the Namoi River. Witnesses examined before the Committee have stated that the alleged immunity from flood-water is incorrect, and that the crossing over the river is not the best that can be found. The Engineer-in-Chief for Railway Construction is satisfied that the route is what it is officially represented to be, and from his and other evidence the Committee do not see sufficient reason to doubt this statement. Some of the land about Narrabri, the Engineer-in-Chief admits, is subject to floods, and the water spreads itself over the land near various creeks; but he has provided for that, and there will be sufficient get-away for the water in the vicinity of creeks and other watercourses by means of bridges, drains, and culverts, to prevent any accumulation of flood-water about the railway. There is a good crossing place over the Namoi 5 or 6 miles to the west of Narrabri, but it is undesirable for the line as proposed, because the main North-western Railway now stops at Narrabri, and the object of extending to Moree is to go as directly northward as possible. And while laying out the line over country presenting a suitable river crossing and comparative freedom from flood-water, efforts have been made to keep it as much as possible from land which would have to be resumed and paid for. "In laying out the line," the Engineer-in-Chief states, "I have taken care to run through Government reserves wherever possible, and a reference to the Land Office map will show that the line for the greater part traverses Government reserves." Certain weight must, of course, be given to the evidence of private persons residing in or acquainted with the country through which the line will pass, but unless there be some clear and forcible reason for doubting the testimony of the expert officers of the Government that testimony must be accepted. There is not at the present time much settlement along the route, but during 1895 many of the leases held in the district by pastoralists will expire, and it is anticipated that a large quantity of land will in consequence be taken up by small settlers. The land itself is of an excellent description, fit for profitable pastoral occupation or for agriculture, including the growth of wheat.

12. The estimated cost of constructing the railway is less than in the case of any Government line previously constructed in New South Wales. The cost of maintenance, it is stated, will also be considerably below what it has hitherto been. The railway is regarded as a cheap line, but, from an engineering point of view, a very good one, and fully capable of doing the work expected of it.

13. Different as the construction of this railway will be from what has been followed in the case of the existing lines of the Colony, there is no reason to think that the line will not be workable and safe. With the exception of the ballasting and formation it will not be less substantial and permanent than other lines. The proposal to limit the ballast to three inches under the sleepers appeared to the Committee from the first to be a somewhat doubtful proceeding, and their opinion regarding this part of the work was strengthened by the inspection which the Sectional Committee made of the route. This limit of ballast assists materially in reducing the cost of construction, but may make the line unsafe, the black soil over which the sleepers and rails will be laid being in places very soft and spongy. It seemed to the Committee essential that the ballast should be increased. The Engineer-in-Chief for Railway Construction expressed himself as satisfied that the quantity he proposed to use would be sufficient, but admitted that as traffic extended more ballast would have to be put down. The doubt felt by the Committee led them to examine the Engineer-in-Chief for Existing Lines, and by him, and subsequently by the Engineer-in-Chief for Railway Construction, the matter was satisfactorily explained. The three inches of ballast represents 1,200 cubic yards per mile of line. By somewhat narrowing the width over which the ballast extends, and laying down the ballast judiciously, the quantity which would give only three inches under the sleepers by the ordinary system may be made to give six. The reduced width can be adopted in the case of this railway, because the line is comparatively straight and without sharp curves.

14. The proposed railway, it will be seen from the resolution of the Legislative Assembly referring the work to the Committee, is to be "subject to the provisions of any Act that may be passed dealing generally with the 'betterment principle' with regard to public works," and the Committee were very desirous of learning through

through the Under Secretary for Public Works, as the representative of the Minister for Public Works, what the views of the Government are upon this subject of betterment as applied to this line. A map published with this Report shows the extent of country which it is considered the railway will more or less serve, and which might come under the operation of the betterment principle; and the evidence of Mr. J. Barling, Under Secretary for Public Works, explains, as far as can be done at present, the manner in which it is proposed that the principle should operate. Generally it would operate in accordance with the provisions of the Bill before the Legislative Assembly last Session, under the title "The Public Works Act Further Amendment Act of 1893." Clause 8 of that measure provides that—

"the Governor, after an investigation has been made by officers appointed for that purpose, may prescribe the limits of the improvement area and declare that owners of land, within the limits of such improvement area, shall be liable to pay an improvement rate, to be assessed in the manner hereinafter provided, for the purpose of repayment of the proportionate cost of such land and work."

Clause 9 states that for the purposes of the Act the occupier of land shall be deemed to be the owner, and that the word "owner" shall include "occupier"—

"Provided always that the improvement rate shall be borne equitably by the occupier or lessee, and the lessor of the said land, as may be agreed upon between them; and in default of agreement the proportion of the said rate payable by either party shall be determined by the Land Appeal Court, according to such regulations as the Governor shall prescribe."

Other clauses of the Bill bearing upon the question as it relates to this railway and the intentions of the Government were described by the Under Secretary as follows:—

"Clause 10 provides that within thirty days after the improvement area has been proclaimed the Constructing Authority shall cause a plan to be deposited at some place within the police district wherein the lands affected are situated, showing the extent of the improvement area, and giving particulars as to the owners of the land, the amount of the improvement rates which every owner will be required to pay, and the period over which the payment will extend, together with the amount of each instalment and the date upon which it must be paid. Clause 11 provides for the publishing of the notice in the *Government Gazette* and the local newspapers, and also gives power to amend the plan already referred to, provided that similar notice is published. Clause 12 provides that the Constructing Authority, in determining the rate to be paid by each owner, shall take into account the position of the land and 'the degree of permanent enhancement in its capital or annual value which the authorised work may reasonably be expected to produce; and such rates shall be payable by half-yearly instalments spread over a number of years to be determined by the Constructing Authorities.' The number of years over which the payment is to be spread is not to exceed 100, nor to be less than fifty. Provided always that the whole amount of improvement rate to be paid by the owner shall not exceed 75 per centum of the cost of such work."

This 75 per cent. seems excessive, but it is explained that it is necessary to fix a high limit, as the Government may have to carry out under the Act works which will be to the very large interest of private persons and only slightly in the public interest, and while 75 per cent. is the maximum contribution under the betterment principle, there will probably be cases where a much smaller percentage is justifiable. The object of the Government appears to be to safeguard the public interest as far as possible. By another clause in the Bill—clause 13—the owner of property assessed under the Act has the right of appeal against the action of the Constructing Authority, or Minister, in regard to all the proceedings which principally affect him:—(1.) The inclusion of his property within the improvement area; (2) the amount of improvement rate to be paid by him; (3) the period over which the repayment of such rate is to be spread. The appeal, as provided by clause 9, is to be made to the Land Court. The Minister thinks that as there is in existence a Land Court, which is a highly competent body, it would be better to constitute it an Appeal Court in these matters than to allow an appeal to the Supreme Court or to arbitration. The decision of the Land Court is to be final, and the costs of appeal are to be in the discretion of the Court. By clause 15 of the Bill it is necessary that the first half-yearly instalments of the betterment rate shall be paid at the end of six months from the date of the publication of a notice in the *Government Gazette* and local newspapers.

"Clause 16 provides that notice may be given of lands not included or not finally assessed at the time of the publication of the notice referred to in the preceding clause, and that the first payment is to be due and payable 'as from the expiration of six months from the date of the publication of the notification of the completion of the authorised work.' Clause 17 provides that a charge of 6 per cent. will be leviable upon all overdue payments; and clause 18, which is a very important one, provides for the formation of a sinking fund, for the repayment of loans from which the work was constructed. It reads as follows: 'All sums of money paid under the authority of this Act shall be paid by the Constructing Authority into the Treasury

Treasury to the credit of the Consolidated Revenue Fund, and the Colonial Treasurer shall keep a separate account for each authorised work and the amounts in respect of same. And all such payments shall be used to form a sinking fund for the repayment of loans from which such authorised work was constructed, according to such regulations as the Governor shall think fit.' Clause 19 is as follows: 'The foregoing provisions shall apply to all Crown lands, and to all lands occupied by or vested in any department of the Government: Provided that no improvement rate shall be payable from unoccupied Crown lands until such lands are purchased, leased, or occupied under any Act in force relating to the purchase, lease, or occupation of Crown lands, but nothing herein shall be taken to diminish the amount chargeable on such lands.' Clause 20, which is the last clause of the Bill, provides that, for the purpose of this Act, the Secretary for Lands shall be deemed to be the owner of all Crown lands."

It is, of course, possible that the Bill which contains these provisions will not be passed into law; and that contingency occurring to the Committee, the Under Secretary was asked whether, presuming the measure was not passed, the Bill authorising the construction of the railway would bring it under the provisions of any future Betterment Act. The Under Secretary was not able to answer the question definitely, because, he said, he had not put it to the Minister exactly in that form. But it was clear, he went on to say, that the Minister, when he referred this work to the Committee, had determined that it should be subject to the betterment principle. He supposed it would depend very much upon the conclusion arrived at by the Committee as to whether the Minister would proceed with the construction of the railway in the event of the Betterment Bill not being passed, but he could not say definitely how the Minister would act in that case. The manner in which the betterment principle may affect property-holders in the districts served by this railway was explained as follows:—

"Suppose, for the sake of illustration, the betterment area was fixed at 6,000,000 acres, and we charged half of the cost of the line to the owners of the land. That, allowing something for the land which must be resumed, might be put down at £80,000. I make the whole cost of the line £160,000 instead of £153,000, as estimated, in order to provide for the land which will have to be resumed. Suppose also that the owners of the land benefited by the construction of the railway had to repay one-half of its cost to the State, and an average rate were charged, it would only amount to something like three-tenths of a farthing per acre per annum."

But, the Under Secretary said later on, "we shall have to make the most careful investigation before proclaiming the betterment area, or determining the amount to be paid by the owners of land." There are represented to be in the district 890,000 acres of freehold land, 1,804,000 acres of conditionally-purchased and leased land, 985,000 acres of reserves, and 3,615,000 acres of Crown lands.

15. It will be seen from the evidence that many witnesses urge the construction of a line from Narrabri in a westerly or north-westerly direction. Though admitting that Moree is entitled to railway communication they contend that the line as proposed will be of no benefit to the districts west of it, which have a claim to railway facilities at least equal to the districts around Moree. Any route to Moree westward of the one referred to the Committee would be longer, much more expensive, and more liable to the effects of flood-water than that proposed. A westward or north-westward line would undoubtedly be, as the Sectional Committee point out in their report, "advantageous to a large area of country, and a very considerable population," but a line in either of those directions could not be made to effectively serve Moree and the country north or east of it. The Sectional Committee came to the conclusion that if the whole area of country concerned in this railway question is to be properly served it can only be done by two lines—"a northern line following the route submitted to the Committee, and a western line following the driest belt of country, which is apparently south of Thalaba Creek, and eventually reaching Collarendabri. Any attempt to deviate from the direct route," they say, "will entail a permanent disability on the northern trade without conferring a fully compensating advantage on the western trade." They were of opinion "that in view of the importance of the western trade, it would be well if a full exploration and survey should be made of the country towards Collarendabri, apparently the best place to start a survey from being a point between Narrabri and Edgeroi, thus utilising the bridge which will be constructed over the Namoi on the direct route."

Opposition to the proposed railway.

16. After a careful consideration of the evidence, and from the inspection made by the Sectional Committee, the Committee have arrived at the conclusion that the proposed railway, as referred to them by the Legislative Assembly, should be

Resolution of the Committee.

be constructed, but they recommend that the work be not undertaken until a Betterment Act is passed. Their decision is shown in the following extract from their Minutes of Proceedings, of Tuesday, 9 January, 1894 :—

Mr. McCourt moved,—

“That, in the opinion of the Committee, it is expedient that the proposed railway from Narrabri to Moree, as referred to the Committee by the Legislative Assembly, be carried out.”

Mr. Davies seconded the motion.

Mr. Trickett moved, as an amendment,—

“That all the words after the second word ‘that’ be omitted, with a view to inserting the following words: ‘a railway should be constructed to connect Narrabri with Moree, but that the weight of evidence is in favour of a line to the west of the proposed Government line and in the locality of the Gurleigh Point line, or travelling stock route, forty-three out of sixty-eight witnesses having testified in favour of a western deviation; one strong objection to the Government line being that it would not serve a large area of country to the west of Millie and Narrabri, whilst a deviation to the westward, as before suggested, would, in addition to connecting Narrabri and Moree, be advantageous to a large area of country and a considerable population to the west. The Committee recommend accordingly.’”

The Committee divided on the question—“That the words proposed to be omitted stand part of question,” with the following result :—

Ayes, 6.	Noes, 4.
Mr. Suttor,	Mr. Trickett,
Mr. Hoskins,	Mr. Wall,
Mr. Humphery,	Mr. Neild,
Mr. Davies,	Mr. Dawson.
Mr. Ewing,	
Mr. McCourt.	

The amendment was, therefore, negatived, and the motion was passed on the following division :—

Ayes, 6.	Noes, 4.
Mr. Suttor,	Mr. Trickett,
Mr. Hoskins,	Mr. Wall,
Mr. Humphery,	Mr. Neild,
Mr. Davies,	Mr. Dawson.
Mr. Ewing,	
Mr. McCourt.	

J. GARRARD,
Chairman.

Office of the Parliamentary Standing Committee on Public Works,
Sydney, 12 January, 1894.

PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS.

MINUTES OF EVIDENCE.

RAILWAY FROM NARRABRI TO MOREE.

TUESDAY, 14 NOVEMBER, 1893.

Present:—

JACOB GARRARD, Esq. (CHAIRMAN).

The Hon. WILLIAM HENRY SUTTOR.	WILLIAM CHANDOS WALL, Esq.
The Hon. JAMES HOSKINS.	WILLIAM McCOURT, Esq.
The Hon. FREDERICK THOMAS HUMPHERT.	JOHN CASH NEILD, Esq.
The Hon. JOHN DAVIES, C.M.G.	EDWARD WILLIAM O'SULLIVAN, Esq.
The Hon. WILLIAM JOSEPH TRICKETT.	CHARLES COLLINS, Esq.
THOMAS THOMSON EWING, Esq.	HENRY DAWSON, Esq.

The Committee proceeded to consider the proposed Railway from Narrabri to Moree.

Joseph Barling, Esq., Under Secretary, Department of Public Works, sworn, and examined:—

1. *Chairman.*] Have you a statement to make to the Committee? Yes, it is as follows:—The first departmental action taken in connection with this proposed line appears to have been in the year 1883, when Mr. F. A. Wright, then Minister for Public Works, gave instructions for a trial survey to be made. A rough estimate was then made of the cost of the work by Mr. Mr. John Whitton, which amounted to £539,500, or 67 miles at £8,053 per mile. On the Loan Estimates for 1884 a sum of £336,500 was voted for the line, under the heading of "Light Lines." In April, 1886, Mr. Lyne, who was then Minister for Works, laid before the Assembly the plan, section, and book of reference of the proposed line. In September following, on the motion of the same Minister, the House approved of these by 50 votes to 4. The Legislative Council, however, by 22 votes to 4 referred the matter to a Select Committee, which, in a progress report, recommended the resumption of the inquiry during the next session, as time had been too limited to enable them to take evidence. The Committee do not appear, however, to have issued any further report. The matter, for a time, then remained in abeyance; but in 1886 Mr. Hassall, M.P., presented a petition from the residents of Moree, urging the immediate extension of the line from Narrabri; and from that time to the present the construction of the line has been pressed with increasing urgency by Mr. Hassall, M.P., Mr. Sheldon, M.P., Mr. Collins, M.P., and others interested. Particulars of the various steps which were taken will be given in the *précis* which I will subsequently hand in. The whole matter finally culminated by the present Minister for Works, Mr. Lyne, moving in the Legislative Assembly, on the 1st instant, that the matter be referred to this Committee for report, the terms of the motion being as follows:— "That it be referred to the Parliamentary Standing Committee on Public Works to consider and report upon the expediency of constructing a line of railway from Narrabri to Moree, such work to be subject to the provisions of any Act that may be passed dealing generally with the 'betterment principle' with regard to public works." Six different proposals have been made with respect to the route for this line. The earliest, known as the "permanently staked line," was made by Mr. F. B. Wickham in the latter part of 1883 and the beginning of 1884, and Messrs. Carter and Harwood commenced to permanently stake this route in 1884. This work was suspended in order to make a trial survey of a line *via* the "travelling stock route," which may be looked upon as the second proposal. This left the route of the first line about 3½ miles from Narrabri, and junctioned with it again about 6 miles from Moree. This latter survey was completed early in 1885. The permanent staking of the direct route (the first) was resumed, and finished about the middle of 1885. Messrs. Carter and Harwood also made, in April, 1885, a short trial survey *via* Gundamain, which left the trial line to Walgett, *via* Wee Waa, about 4½ miles from Narrabri Station, and junctioned with the permanently staked line about 14 miles from the latter point. Early in 1886 the fourth trial survey was made by Mr. Wickham *via* Rocky Crossing. This left the North-western Railway about 5½ miles short of Narrabri, and followed the route of the old trial survey to the Queensland Border at Mungindi, the plans of which were destroyed in the Garden Palace fire. This junctioned with the "permanently staked line" at 6½ miles from its commencement. There was a deviation tried on this line through Narrabri township. The fifth survey was undertaken towards the end of 1889, *via* Gurlough Point, and was made by Mr. J. J. Jamieson. This is a continuation of the existing line along the south side of the Namoi River, in the direction of Wee Waa, its nearest point being 6½ miles from that place. It crosses the river at Gurlough Point, and junctions with the travelling stock route line on the south side of Boggy Creek, about 28½ miles from Narrabri station.

J. Barling,
Esq.
14 Nov., 1893.

J. Barling,
Esq.
14 Nov., 1893.

station. The object of the survey by the travelling stock route was to take advantage of Crown lands, but this advantage, as I shall explain later on, is very much minimised by the application of the "betterment" principle. The other surveys had in view improved crossings of the Namoi River, or accommodation to the township of Narrabri, the present station being about 2 miles from the centre of the town. Further examination of the country showed that these latter objects could be best attained by the sixth and adopted route now before the Committee. This line leaves the North Western Railway east of the present Narrabri station, crossing the river at Cooma, and the Rocky Crossing line at the township, meeting the "permanently staked line" 20 miles from Narrabri. The trial survey of this line was undertaken, at the beginning of this year, by Messrs. Paul and Sams. The latter worked on the route just described, and the former amended the staked line northward from the point of junction to Moree, principally with the object of improving its alignment with regard to Crown and private land, but keeping generally to the same line of country, which is freer from flooded country than the travelling stock route. The advantages of this line may be summarised as follows:—It has a better river crossing; serves the town of Narrabri better; goes through the best country, from an engineering point of view; and is the shortest to Moree as compared with the "Gurleigh Point" and "Travelling Stock" routes. The official description of the line is as follows:—

LINE FROM NARRABRI TO MOREE.

Single line; length, 63 miles 50 chains; estimated cost, £153,000, for a light line of railway, exclusive of land and compensation.

The proposed extension leaves the North-western Railway, near Narrabri station, at 251 miles 32.56 chains from Newcastle, and after crossing the Namoi River and Narrabri Creek reaches the township of Narrabri, skirting its southern and eastern boundaries. Thence it proceeds in a generally northern direction to Moree, where it ends on the southern side of the Gwydir River at 315 miles 3 chains.

The Namoi River and Narrabri Creek require moderately-sized bridges, otherwise the engineering works are light. The country being mostly flat, a surface line has been obtained, its slight departure from a straight line being chiefly to minimise interference with property.

The steepest grade of any considerable length is 1 in 100 against the up traffic, and 1 in 76 against the down. The sharpest curve is 20 chains radius.

As to the necessity for the construction of this line, I may, perhaps, be allowed to make the following quotation from a report by the Railway Commissioners, dated 4th November, 1892. The Commissioners say:—"Referring to the conversations the Chief Commissioner has had with you (the Colonial Treasurer) on one or two occasions respecting cheap lines through pastoral country, we beg to state that, in our opinion, the most urgent lines to make at the present time are those from Narrabri to Moree, and from Bourke to a point on the Queensland border northwards of Bourke. Unless these lines are made a large traffic we have enjoyed for many years will be abstracted from us. As will be seen, the carriage of merchandise as well as wool, in one case 350 miles and 503 miles in the other (Bourke), is exceedingly valuable, the rates being good ones for this class of traffic, and the distance the traffic has to be carried being very considerable. We will be exceedingly glad if the Government can come to a decision at an early date on this subject." With regard to the question of light or "pioneer" lines, a very great deal of attention has been bestowed on the subject by Mr. Secretary Lyne, and as will be seen by the estimate I shall presently give, a great advance has been made in the direction of the reduction of cost. While the standard gauge has of course been maintained, the earthworks and ballasting have been made as light as can be done consistent with safety and the work required of the line. Fencing has been almost wholly omitted, and the stations provided of the simplest and cheapest kind possible. The station at Moree will be similar in point of accommodation to that at Forbes, but will be considerably cheaper in construction. The particulars will of course be supplied by the Engineer-in-Chief when he is before you. I will now read the report which the Commissioners have forwarded in accordance with the terms of the Public Works Act:—

Office of the Railway Commissioners of New South Wales, Sydney, 13th November, 1893,

Proposed Line of Railway from Narrabri to Moree, 63 miles 50 chains.

In accordance with the provisions of the "Public Works Act of 1888," section 13, we beg to report as under:—

Cost of construction—

The Engineer-in-Chief estimates the cost of construction of a pioneer line (exclusive of land and compensation) at £153,000

Annual cost—

Capital expenditure at 4 per cent. £6,120

The estimated cost of working would be as under—

Permanent way..... £4,000

Traffic..... 1,500

Locomotive..... 1,500

Total working expenses £7,000

Total annual cost £13,120

Traffic estimate—

Coaching and mails £2,300

Goods 9,915

£12,215

The construction of a line of railway from Narrabri to Moree is recommended upon the ground that it will tend to largely develop a considerable tract of valuable country, and will be an extension of the existing North-western Line in a direction which will probably at a future date warrant a continuation to the Queensland Border.

The line has been designed by the Works Department to a great extent as a pioneer line, in accordance with the views we have from time to time expressed on the subject of extensions into the pastoral districts.

The Seal of the Railway Commissioners of New South Wales was hereunto affixed this 13th day of November, 1893, in the presence of—
H. MCLACHLAN.

E. M. G. EDDY,
Chief Commissioner.
W. M. FEHON,
Commissioner.
CHARLES OLIVER,
Commissioner.

It

It is, of course, difficult to estimate exactly the area of country which will be served by this line. It may, however, be put down roughly at 6,000,000 acres, extending from Warialda on the east to Mungindi on the west, a distance of a little over 100 miles. When the witnesses for the Railway Traffic Department are before you, they will probably give a larger area; but in talking over the matter in the office we came to the conclusion, that, as it was proposed to apply the "betterment" principle to this line, it would be advisable to reduce the area likely to be affected to the minimum.

2. Does this take in the land right up to Mungindi? Yes, though the estimate is only an approximate one. With the permission of the Committee I will read reports by Mr. District-Surveyor Poate and Mr. District-Surveyor O. M. Wood, both dated 31st October of this year, giving a description of the country:—

Sir,

District Surveyor's Office, Tamworth, 31 October, 1893.

In accordance with instructions contained in your letter of the 24th instant, Misc. Dep. 93-8,874, enclosed, asking for a special report in regard to the county of Jamison in connection with the consideration of the question of construction of a railway from Narrabri to Moree, I have the honor to forward herewith a lithograph of the county of Jamison, on which the recently resurveyed route of the proposed railway is approximately shown by firm, broad, black band, and to report as follows, under the various heads specified in your letter:—

1. *General character of the land, both alienated and unalienated on leasehold and resumed areas.*

The county is bounded on the east by the Nandewar Range, from which it runs down through hilly and rolling downs country into rich alluvial plains lying between the Namoi River on the south and Thalaba Creek on the north, and extending beyond the western boundary of the county.

The eastern limit of these rich alluvial plains, which have been principally formed by the denudation of the Nandewar Range aforesaid and the hilly country immediately adjoining it, is approximately the Narrabri-Moree road, shown on litho. by firm broad green band, as, although there is a large extent of plain country east of that road in the parishes of Wangan, Coorong, Boorah, Bibil, and Dobikin, it is neither so rich in quality nor the same class of soil.

This rich plain country, almost a dead level, may be generally described as a vast "park," in which the predominating feature is black soil of the richest description, clothed in all ordinary seasons with a wealth of herbage and feed for stock, and ranging through open plains, myall plains, belts of belar and open coolabah forests. Throughout this vast "park" are scattered small extents of red soil country, slightly elevated above the ordinary level, which are valuable as catchment areas for tanks, and as furnishing refuges for stock in times of flood.

The remaining part of the country east of the Narrabri-Moree road, where not plain as already specified, may be described as "rolling downs" until the hilly country is reached, the approximate westerly limit of which is travelling stock reserve 1,172, shown by broad blue band.

This hilly country is at present unoccupied and is practically worthless.

2. *Suitability for wheat growing or pastoral purposes.*

With the exception of the last described unoccupied country at the eastern end, the whole of the county is used for purely pastoral purposes, and comprises some of the finest country of that class in the Colony. All the red soil country is suitable for wheat growing, and also comparatively limited areas along the banks of the Namoi above Wee Waa, and along the various creeks throughout the county; but the country is essentially a pastoral one, and it has hitherto been found in practice more profitable to utilise these areas for such pursuits. A large flour mill was built at Narrabri some ten or twelve years ago, but it failed to induce the cultivation of these lands, and as the supply from the wheat farmers in the counties of Nandewar and White was insufficient it was closed a few years afterwards.

3. *Possible stimulus to selection of Crown lands.*

The only lands at present available for selection within the radius of the proposed railway are too limited in extent and too scattered for profitable occupation, and the construction of the railway will have little or no stimulating effect in their selection, with perhaps the exception of a few areas in the immediate vicinity of the line. The Crown lands at present held under pastoral lease will, when available, be rapidly selected for pastoral purposes, whether the railway be constructed or not, with the exception, perhaps, of such small extents of country as those now remaining on the resumed areas.

4. *Probable appreciating influence on the value of all Crown lands.*

With the exception of the land in the parishes of Manamoi, Woolabrar, Moema, and Doyle, which is of no special value, and of the practically worthless land east of travelling stock reserve 1172, the whole of the lands in the county of Jamison are at present worth from 30s. to £4 per acre for pastoral pursuits, and the construction of the railway will not in my opinion have any appreciable effect on these values. These prices, however, cannot in the existing circumstances be realised to any great extent, but the remedy lies, not in railway construction, but in amended land legislation, as indicated in my report No. 93-342 of this date.

Having dealt with the various matters specified in your letter of instructions, I may now perhaps be permitted to point out that if the railway be constructed in the position at present contemplated—see litho.—it will fail to secure the traffic of the rich plain country, which will be intercepted by the Narrabri-Moree road, and carried by teams along that road to Narrabri. The loss of this traffic and the collateral loss of outward traffic will make an appreciable difference in the earnings of the railway, which can only be obviated by carrying the railway as far west as possible (with the western boundary of the parish of Gommel as a limit) before it strikes northward from the Namoi, and the farther west (to such limit) the railway can be taken the more likely is it to secure the traffic of the plains.

I have, &c.,
FRED. POATE,
District Surveyor.

Sir,

District Survey Office, Moree, 31 October, 1893.

In obedience to instructions contained in your letter of the 24th instant (papers Misc. Dep. 93-8874), I have the honor to submit the following report upon the lands within the Moree and Warialda Land Districts:—

In the Moree Land District the country generally is almost level; it is chiefly either open plain or thinly timbered forest. The soil is rich throughout and of either a strong black or friable red description. This description applies to both alienated and unalienated lands.

In the Warialda Land District the country varies from gently undulating on the west and north-west sides to hilly and rough in places on the east and southern sides. The country is chiefly forest, parts being densely timbered and parts scrubby. The soil is either rich black of basalt formation, red, or sandy; either of the first two soils is suitable for agriculture, and there is little doubt that the sandstone formation overlies the coal measures; indeed, coal has been found in several places.

2. Although there has been more wheat grown in the Warialda than in the Moree District, still it has been proved that the soils, rainfall, and climate, in both districts are suitable for wheat growing, but hitherto it has not paid to grow wheat, owing to there being no local market and to the cost of sending it to any other.

3. Settlement in the whole of the Moree District and in the western and northern parts of the Warialda District would be greatly stimulated by the construction of a railway to Moree.

4. Crown lands on the leasehold and resumed areas would also be greatly enhanced in value.

I have, &c.,
W. H. O. M. WOOD,
District Surveyor.

The

J. Barling, Esq., The Chief Draftsman of the Lands Department, who will give evidence before you presently, and will verify the figures I now quote, has prepared a map showing the Crown lands and the alienated and conditionally leased lands affected by the proposed line, the figures being as follows:—

Freehold land	...	...	...	...	...	...	...	...	890,000	acres
Conditional purchase, conditional lease	...	...	...	...	...	...	...	...	1,804,000	"
Reserves	...	...	...	...	...	...	...	...	985,000	"
Conditional lease	...	...	...	...	...	...	...	...	3,615,000	"
Total...									7,294,000	"
Deduct for lands near Narrabri	...	...	...	...	...	...	...	...	294,000	"
									7,000,000	"
Deduct a further area of land which, though shown on the plan, it is difficult to say whether it can fairly be included in the "betterment area" 1,000,000 "										
									6,000,000	"

The areas of Crown and alienated lands that would be required for railway purposes, if an average width of 2·5 chains were taken, would be: Crown land, 955 acres; alienated land, 317½ acres.

I now come to the condition which has been added to this proposal, viz., that the line be carried out on the "betterment" principle under the provisions laid down in the proposed "Betterment Act." The Bill dealing with the matter is now before the House, having been introduced by Mr. Secretary Lyne on the 26th October. I need not, therefore, refer to it at length, as it is in the hands of Hon. Members. Mr. Lyne is very sanguine that the adoption of the "betterment" principle will introduce a new era in the history of the construction of our public works, to the great benefit of the country generally. In the first place it will give confidence to our bondholders, by establishing what will practically be a Sinking Fund for the payment of part of our debt. It will prevent pressure being brought upon the Government to carry out unremunerative public works, and it will also, to a considerable extent, obviate the necessity for making large reserves along the routes of railway lines, which operates to the retardation of settlement; for it must be obvious that as the land benefited by a public work will contribute towards its cost, the main reason for shutting up large portions of our public lands will have disappeared. I hand in plans and book of reference, together with a road plan of the district and a table of distances, which I thought might be useful to the Committee.

3. Can you give the Committee some idea of the principles of the Betterment Bill to which you have referred, and under the provisions of which this work, if sanctioned, will be carried out;—can you tell us what area will be affected or what zones have been set apart? The Bill of which you speak is entitled "The Public Works Act Further Amendment Act of 1893," and clause 8 of the measure declares that the Governor, after an investigation has been made by officers appointed for that purpose, may prescribe the limits of the improvement area and declare that owners of land, within the limits of such improvement area, shall be liable to pay an improvement rate, to be assessed in the manner hereinafter provided, for the purpose of repayment of the proportionate cost of such land and work.

4. Is there any provision for zones? No; it will be impossible to make such provision yet. Clause 9 provides that, for the purpose of this Act the occupier of land shall be deemed to be the owner thereof, and the word "owner" shall include "occupier." Provided always that the improvement rate shall be borne equitably by the occupier or lessee, and the lessor of the said land, as may be agreed upon between them; and in default of agreement the proportion of the said rate payable by either party shall be determined by the Land Appeal Court, according to such regulations as the Governor shall prescribe. The Minister thought that as we already had the Land Court, which is a highly competent body, to deal with matters of this kind, it would be better to constitute it an Appeal Court, rather than to allow an appeal to the Supreme Court or to arbitration. Clause 10 provides, that within thirty days after the improvement area has been proclaimed the Constructing Authority shall cause a plan to be deposited at some place within the police district wherein the lands affected are situated, showing the extent of the improvement area and giving particulars as to the owners of the land, the amount of the improvement rates which every owner will be required to pay, and the period over which the payment will extend, together with the amount of each instalment and the date upon which it must be paid. Clause 11 provides for the publishing of the notice in the *Government Gazette* and the local newspapers, and also gives power to amend the plan already referred to, provided that similar notice is published. Clause 12 provides that the Constructing Authority, in determining the rate to be paid by each owner, shall take into account the position of the land and "the degree of permanent enhancement in its capital or annual value which the authorised work may reasonably be expected to produce; and such rates shall be payable by half-yearly instalments spread over a number of years to be determined by the Constructing Authorities." The number of years over which the payment is to be spread is not to exceed 100, nor to be less than fifty. Provided always that the whole amount of improvement rate to be paid by the owner shall not exceed 75 per centum of the cost of such work.

5. *Mr. Neild.*] 75 per cent. seems awfully high? That is the limit.

6. *Mr. Ewing.*] Is there no minimum limit? No; the Committee will see that the Government may have to carry out works—drainage works for instance—only to the slightest extent in their own interest, but to the very large interest of private persons, and it is necessary, therefore, that there should be an extreme limit. Of course, in talking of drainage works, I do not mean the sewerage of towns, I mean land drainage works.

7. *Mr. Neild.*] I understand that these provisions will apply to any public work? Yes; but 75 per cent. is the maximum. In the case of some works only 25 per cent. might be charged.

8. Is the limit to be fixed by the Constructing Authority? Yes, in the first place.

8½. Seventy-five per cent. is unreasonable for any public work? I think you will see that in the case of some public works it would be desirable to charge that amount. If that extreme limit were not charged, it would shut out a number of works, because the Government would say that it was not possible to carry them out unless the public contributed sufficiently to their cost. The Minister has safeguarded the public in every way. Clause 13 gives an owner the right of appeal against the action of the Constructing Authority

Authority in regard to these points:—(1.) The inclusion of his property within the improvement area; (2) the amount of improvement rate to be paid by him; (3) the period over which the repayment of such rate is to be spread. Clause 14 provides for an appeal to the Land Court. I referred to it earlier because it dominates the whole Bill. The decision of the Land Court is to be final and conclusive on both parties, and the costs of appeal are to be in the discretion of the Court. Clause 15 is practically the same as clause 10, and provides for the publishing of notices in the *Gazette* and local newspapers. It also provides that the first half-yearly instalments shall be payable at the end of six months from the date of the publication of the notice. Clause 16 provides that notice may be given of lands not included, or not finally assessed at the time of the publication of the notice referred to in the preceding clause, and that the first payment is to be due and payable "as from the expiration of six months from the date of the publication of the notification of the completion of the authorised work." Clause 17 provides that a charge of 6 per cent. will be leviable upon all overdue payments, and clause 18, which is a very important one, provides for the formation of a sinking fund, for the repayment of loans from which the work was constructed. It reads as follows: "All sums of money paid under the authority of this Act shall be paid by the Constructing Authority into the Treasury to the credit of the Consolidated Revenue Fund, and the Colonial Treasurer shall keep a separate account for each authorised work and the amounts in respect of same. And all such payments shall be used to form a sinking fund for the repayment of loans from which such authorised work was constructed, according to such regulations as the Governor shall think fit." Clause 19 is as follows: "The foregoing provisions shall apply to all Crown lands, and to all lands occupied by or vested in any department of the Government: Provided that no improvement rate shall be payable from unoccupied Crown lands until such lands are purchased, leased, or occupied under any Act in force relating to the purchase, lease, or occupation of Crown lands, but nothing herein shall be taken to diminish the amount chargeable on such lands." Clause 20, which is the last clause of the Bill, provides that, for the purpose of this Act, the Secretary for Lands shall be deemed to be the owner of all Crown lands.

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9. *Chairman.*] Presuming that the Bill is not passed, will the measure authorising the construction of this work bring it under the provisions of any future Betterment Act? I am unable to answer that question, because I have not put it to the Minister exactly in that form; but it is clear that the Minister when he referred this work to the Committee had determined that it should be subject to the betterment principle. I suppose it would depend very much upon the conclusion arrived at by the Committee as to whether he would proceed with the construction of the railway in the event of the Betterment Bill not being passed. I cannot say definitely how he would act in that contingency.

10. I understand from what you have said that the need for this railway has been urged upon the Government by the Railway Commissioners? Yes, very strongly.

11. They show that the annual loss upon the line will be only something like £800? A comparatively small sum.

12. Very little land will have to be resumed by the Government? Very little. Suppose, for the sake of illustration, the betterment area was fixed at 6,000,000 acres, and we charged half of the cost of the line to the owners of the land. That, allowing something for the land which must be resumed, might be put down at £80,000. I make the whole cost of the line £160,000 instead of £153,000, as estimated, in order to provide for the land which will have to be resumed. Suppose also that the owners of the land benefited by the construction of the railway had to repay one-half of its cost to the State, and an average rate were charged, it would only amount to something like three-tenths of a farthing per acre per annum.

13. Have the people of Wee Waa made any representation or movement in favour of the line *via* Gurleigh Point? You will find a reference to that in the *procès* which I hand in.

14. Has there been any representation from the people of Millie? That is also referred to there. I think a public meeting was held at Millie.

15. Is it not a fact that the Railway Commissioners, in 1889, recommended that this line should go *via* Gurleigh Point in order that it might tap more country? A report was made somewhat to that effect; but I forget whether they recommended the line exactly on that ground. It was thought at that time that we could get a better crossing at Gurleigh Point, but the crossing which we have selected now is better than any we found before. The Gurleigh Point line has been entirely put aside by the Commissioners, and by the Department.

16. The Commissioners also recommended that the line should be taken out towards Keramingly, and thence to Moree because of the reduced cost? That proposal is entirely done away with now, because of the intended application of the betterment principle.*

17. Are we to understand that the Wee Waa trade is to be considered rather in connection with a line to Walgett than in connection with a line to Moree? I should not like to give currency to the idea that the Minister has any intention of proposing the construction of a line from Narrabri to Walgett. Walgett would be better served by the locking of the river, and the Minister is now making inquiries with a view to constructing locks which will give a navigable channel to Walgett. Thinking that such a question would be asked of me I got a report upon the subject from the Chief Engineer for Water Conservation, and in the concluding paragraph of that report he says: "Nothing has yet been done towards clearing the Barwon or Darling between Walgett and Mungindi, yet as stated above a steamer succeeded in reaching the latter place this year, and steamers have repeatedly been at Collarendabri, and occasionally at Mogul. The fall in the river from Collarendabri to Walgett is at the rate of about 6 inches per mile, and as there is no material difference in the velocity between the former place and Mungindi the rate of fall cannot be materially different. There would be no difficulty in making the river permanently navigable to Mungindi." I hand in Mr. McKinney's report.

18. That goes to prove that the probability of the construction of a line from Narrabri to Walgett is very slight? Yes.

19. Therefore would it not be better to take this line to Wee Waa in order to increase the traffic? No, I do not think so, because the traffic from that district is almost certain to come to our railways at Narrabri. What we have to consider more particularly is the country to the north of Moree. Why should the produce from that district be dragged 16 miles out of its way in order to serve one or two places which are already served by the railway, and the traffic from which would in any case belong to us?

20. Do the same reasons hold good with regard to Millie? Yes; Millie would be very well served by the proposed line. It would be only 12 or 15 miles distant from it. 21.

* NOTE.—This refers to the Stock route, which is Government land.

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21. *Mr. O'Sullivan.*] Is it the intention of the Department to make a railway from the Western line which will tap the Walgett district? No determination has been come to on the matter. I spoke to the Minister about it; but no determination has been come to as far as Walgett is concerned, except in regard to the locking of the rivers.
22. But such a line has been mooted? Yes.
23. A line to Walgett *via* Coonamble? Yes; junctioning with the Western line at Dubbo.
24. You explained to the Chairman just now that the area upon which a betterment tax would have to be paid will be fixed by the Governor in Council? Yes.
25. Can you give us any information as to what it will be? No; the most careful investigation will be required before it can be arrived at.
26. Is it expected that this line will compete with the Inverell line? I think not.
27. It will serve an entirely different country? Yes; it is just possible, however, that a portion of the area to which I have referred may be affected by the Inverell line, but I hardly think so. I considerably curtailed the area which it was estimated this line would serve, and you must remember that the country declines from Inverell towards the proposed line. Any traffic to Inverell would have to go up hill.
28. Moree is over 40 miles from Inverell? Eighty miles.
29. That being so, this line cannot very well compete with the Inverell line? It could only compete with it just at the border of the traffic area, and you cannot determine exactly where that border is. Since the country falls towards Moree, that would tend to bring the traffic to the proposed line.
30. *Mr. Davies.*] Do I understand you to say that a loan of some £300,000 has been raised to pay for this line? I did not say that the money had been raised; I said that it had been voted.
31. Has it been raised? I cannot tell you; that is a Treasury matter.
32. You do not know of your own knowledge? I could not say for certain.
33. I think you stated that the first estimate for a line from Narrabri to Moree was £500,000? Yes; but that was a very rough estimate, and it was made before there had been any survey.
34. Four or five different surveys have been carried out, and the same number of estimates have been made? Yes.
35. On each occasion the estimated cost of construction has been reduced? Yes.
36. The estimate before us is the lowest that has been made? Yes.
37. In your judgment the best route has been obtained? In the judgment of the Department the best route has been obtained.
38. The estimate before us is £153,000; that does not provide for land resumption and compensation? No; but I imagine that the amount to be paid for compensation and land resumption will not be very large.
39. You expect that it will be met by the betterment tax? Yes; I think I am correct in saying that there will be no land to resume at Moree, while a gentleman has offered to give us the land we require for a station at Narrabri.
40. In many cases where the betterment principle is applied the Crown will receive money from landed proprietors which will go towards paying the cost of any public work? Yes; but the payment will be spread over a period of from fifty to 100 years.
41. In the estimate of £153,000 have you taken into consideration the probability that you will get back a certain amount from the landed proprietors of the district? £153,000 is the estimated cost of the line. We have not deducted from that what we expect to get back from the landed proprietors.
42. Have you any idea of the amount that is likely to be received from them? No; it is impossible to estimate it at the present time. We shall have to make the most careful investigation before proclaiming the betterment area, or determining the amount to be paid by the owners of land.
43. What is the lowest rate to be struck? No rate has been struck. I was merely putting a hypothetical case.
44. You strongly recommend the construction of this line as a reproductive work? Yes.
45. It would be so almost from the start? Almost from the start.
46. And it will act as a feeder to the main line? Yes.
47. *Mr. Hoskins.*] The figures you have put forward in regard to the application of the betterment principle for this district are not given upon authority, inasmuch as the Minister could not decide what rate Parliament would fix? No.
48. Parliament alone will fix the amount? Yes; the maximum amount.
49. Is this work to be proceeded with only in the event of the passing of the Betterment Bill? That is stated in the terms of the resolution which referred it to the Committee.
50. It is understood that if the Betterment Bill does not pass this work will not be proceeded with? It might not be proceeded with in such case; I cannot say that it will not.
51. It must be within your recollection that this Committee, in reporting upon the proposal to construct a railway from Glen Innes to Inverell, recommended that sufficiently high rates should be charged upon all produce and merchandise carried upon the line to pay interest upon the cost of construction? Yes.
52. If the Betterment Bill were not passed do you think it would be a good thing to make such a recommendation in regard to this proposal? I should think it might, but I cannot give any ministerial decision upon the point. We know, however, what opposition there is to differential rates.
53. This district is very sparsely settled? According to a report which was made two or three years ago the population is 7,691, though it is probably larger now. The town of Millic, as far as I can make out, has a population of about 300, while the Government Statistician informs me that the population of the incorporated area of Narrabri is 1,977 and of Moree 1,143.
54. That shows that the country is sparsely settled. The land is used principally for sheep? For sheep and cattle, I think.
55. Under these circumstances, do you think it would be possible, if the ordinary rates were charged, to make the line pay interest upon the cost of construction? I think if you consider the matter further you will see that it would be a most dangerous thing to increase the rates with respect to this line. I do not think I need give the reasons why.
56. *Mr. Trickett.*] Can you tell us whether the betterment principle is the subject of general legislation in any country? I do not know that I can give you a very accurate answer, but I am informed that the principle applies in New Zealand and in Canada.
57. That is generally? I think so.

- 58, *Mr. Hoskins.*] And in the United States? I think it also applies in the United States. The most recent case of its application that has come under my notice is the London Improvement Bill. I have looked up the debates upon that measure, which was passed by the Commons and sent on to the House of Lords on the 25th July. On the motion for the second reading, the Earl of Onslow moved—"That this House, before assenting to the second reading of the Bill, desires to express its opinion that proposals for the assessment of capital values instead of annual values, and for creating new and arbitrarily defined areas of taxation such as are contained in clause 41 of the Bill (the betterment clause), ought not to be embodied in a private Bill; but if found just and equitable, should be based on general principles laid down by Parliament." The Bill to which I have been referring completely answers that criticism, because it applies the principle generally. The Earl of Onslow's motion was agreed to by 55 votes to 36. On the 10th August, in the House of Commons, Sir John Lubbock, who, I believe, introduced the Bill as a private measure, moved to disagree with the action of the Lords, and his motion was carried by 221 votes to 88 votes. On 31st August the matter was again before the House of Lords, and Lord Hobhouse moved that "this House do not insist on its amendment." After discussion this motion was lost by 50 votes to 27, and the House then agreed to a motion by Lord Onslow "That the House do insist upon the amendment made." During the discussion which took place Lord Onslow stated "he was not opposed to the betterment principle himself." He objected to the Bill because—firstly, it would inflict a great injustice upon a body of poor people (*e.g.*, the particular land owners affected by the Bill); secondly, because the arbitrators proposed by the Bill would not be able to carry out their duty; and thirdly, because the question ought to be settled on broad and general principles, and not introduced in a private measure. The Marquis of Salisbury said he had "no metaphysical or *a priori* objection to the principle of betterment . . . it was a well known principle . . . the principle was reasonable and just." His objection was to the method in which the County Council chose to apply it. I have taken this information from the *Times* report. The Committee will see that the objection taken to the Bill is not because of the principle it embodied, but the application of that principle in a private Bill.
59. *Mr. Trickett.*] Did the Bill apply to London only, or to the whole of England? Only to London, I believe.
60. Do you know of any Act having been passed applying the principle generally? No; except in the cases I have mentioned.
61. The Bill to which you have referred applies only to the county? Yes, as far as I know; though I may be mistaken on the point.
62. You say that the probable annual expenditure upon this line will be £13,120, and the probable income £12,215; leaving a deficiency of £905;—have you gone into the question of returns at all? I have not. I took my figures from the Railway Commissioners, who have infinitely better means of making an estimate than we have.
63. Can you tell us whether the traffic on the proposed line is likely to be constant, or will it be spasmodic? I could not tell you that; but Mr. Harper, who visited the district in order to inquire into this matter, will appear before you.
64. Supposing, according to your calculation, the 6,000,000 acres to which the betterment principle will apply were assessed at 3-10ths of a farthing per acre per annum, the return would be £1,825, and if that amount were added to the receipts of the line there would be a surplus of nearly £1,000 a year? Yes; but the revenue derived from the line will be distinct from the betterment rate, which is intended to form a sinking fund to pay off the capital cost.
65. The return from the land will not be mixed up with the earnings of the line? Certainly not. The Bill provides that they shall be kept apart, and that the return from the land should go to form a sinking fund as the Governor may by regulation prescribe.
66. The two amounts will be kept quite separate? The Act provides in a most specific way for that.
67. It is intended that there shall be no fencing along this line;—are you aware if other lines have been left unfenced? I think so, but I am not quite sure.
68. It was proposed not to fence the Cobar line, but I do not know if the proposal was carried out? Mr. Deane will be able to tell you.
69. Is the estimate of revenue which has been put before us based upon ordinary rates? I imagine so. I believe it has been made up on the basis of the rates charged on other lines. I had a conversation with Mr. Harper on the subject, and I understood from him that he had not included any possible traffic, such as grain; although it is almost certain that grain will be carried upon the line. The revenue has been calculated upon the basis of existing traffic.
70. You call this a pioneer line? That is a term used by the Railway Commissioners to denote a railway which is lighter than an ordinary light line. There will be very little earthwork and ballast.
71. Will the ordinary rolling-stock be able to run on it? Yes.
72. There will be no need to change the trucks? No.
73. *Mr. Neild.*] There seems to have been an unusual number of surveys made of this line? I do not think that the number is unusually large.
74. Can you give us any idea as to what these surveys would cost? Not at the present moment; but I could get the information for you. Although a survey may be pretty expensive, it is far better for us to incur the expense than to make the mistake of putting a line in a wrong locality.
75. I understood you to say, with reference to the junction of the proposed line with the existing line at Narrabri, that an owner of land at Narrabri has offered to present the necessary land to the Government? I believe so, though I have not had the offer in writing. The gentleman in question is Mr. Lillyman.
76. Has any estimate been made of the cost of the 317½ acres which will have to be resumed? No; but it will not be very great.
77. I suppose the land required for a station at Narrabri would be the most expensive? It would be given to us. I believe that at Moree there is no alienated land required.
78. The line will pass through pastoral properties? Yes.
79. Will it go through any agricultural properties? I do not think so. There is very little agriculture carried on at the present time.
80. Is it not usual in cases of this kind to make an estimate of the value of land that must be resumed? It is usual; but not at this stage. It would be rather difficult to make the estimate now; but I could give you some idea of what the land would cost. Mr. Poate values the land in the county of Jamison as worth from 30s. to £4 an acre for pastoral pursuits, but I cannot help thinking that the estimate is excessive.

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81. Could you give us any information as to the cost per mile of maintaining the roads in this district? I can tell you the cost by referring to the road map, where I have the mileages marked and the amounts voted set down.
82. I want to set off the saving and road maintenance against the possible loss in connection with the railway? I think that matter has been raised before. I should not reckon upon any saving in the maintenance of the roads, and I should consider it an evidence of the success of the line if there were an increased demand for road votes. If a railway is constructed it will be to our interests to open up as many roads as possible to give access to it, so that there may be an increase of traffic upon the line.
83. What might be saved upon the main roads would be swallowed up in making roads to the different stations? I should not like to say that. I think it is very likely, though I cannot say for certain, that if the line is constructed we shall have to increase our road expenditure; but that would be because of the increase of traffic.
84. While there might be a diminution in the traffic upon the main road, there would be an increase of traffic upon the cross roads? Yes. I had a talk with Mr. Hickson as to the cost of making a good macadamised road from Narrabri to Morce, and he put it down as £150,000, at the very least; in other words, nearly as much as the railway. A metal road would cost £2,500 a mile.
85. At present there is only a track across the black soil? Yes.
86. Do you know the country personally? I have never been there.
87. *Mr. Wall.*] You state that the area of land which will be benefited by the construction of this line is 6,000,000 acres? That is roughly speaking.
88. What is the area of Crown land in the vicinity of the railway line? There are in the district 890,000 acres of freehold land, 1,804,000 acres of conditionally purchased and leased land, 985,000 acres of reserves, and 3,615,000 acres of Crown lands.
89. Half of the land benefited by the construction of the line is Crown land? Yes.
90. In submitting this proposal to the Committee, does your Department think that the line should be constructed? Most decidedly. We have the strongest evidence possible that it should be constructed. Not only have the Commissioners written in the strongest possible way, but they have verbally pressed the consideration of the railway upon the Department.
91. Its prospect of paying is as good as that of any other line which has been constructed? Yes, with the exception, of course, of suburban lines.
92. Are we to understand that the construction of this line is contingent upon the passing of a measure which is not now law? The wording of the resolution carries that meaning.
93. The resolution says that the line shall be subject to the provisions of any Bill coming into force for that purpose. What I want to know is, does your Department recommend the construction of this line apart from the passing of that measure? I should not like to answer that question without referring to the Minister; but if you wish it, I will put the matter before him, and will let the Committee know his reply.
94. Our general policy in regard to railways is to construct lines where there is a prospect of their paying? Yes.
95. If the owners of land who benefit by the construction of the line are willing to pay the cost of it, would it not be desirable to construct lines all over the Colony? I should think so, if there were a possibility of their paying. What you mean is, that if a line would not pay on its own earnings, and the people benefited by it were willing to bear the cost of its construction, should the Government construct it. I should say yes; but there is not much possibility of that occurring.
96. I take it that the Department regard this as a line which has every appearance of being remunerative, and they intend to ask those benefited by its construction to pay for it? To pay a part of the cost.
97. Seventy-five per cent.? I cannot tell you what proportion they will be asked to pay in this case. Seventy-five per cent. is the maximum provided by the proposed Bill.
98. If the 3,615,000 acres of Crown lands are afterwards purchased by private individuals, will the betterment principle apply to them? To a certain extent it will, of course; but these are details which have not been worked out.
99. If the Committee recommend the construction of this line, will your Department have it carried out? I shall endeavour to get an answer to that question.
100. Have you taken into consideration the enhanced value which the construction of the line would give to the Crown lands in the district? We have not taken anything of that kind into consideration yet. I cannot tell at this early stage how the betterment principle will apply in this particular case.
101. Do you think that the construction of this line will have the effect of promoting settlement upon Crown lands? Mr. Harper will be better able to give you an opinion upon that point.
102. *Mr. Dawson.*] You tell us that the route before us is the best that has been surveyed? In the opinion of the Department it is the best.
103. Why has this line been so long delayed in favour of other lines? We have not submitted any other routes to the Committee.
104. Why was it not submitted before lines such as that from Jerilderie to Deniliquin, or from Glen Innes to Inverell? I do not know that I can answer that question.
105. This line will cost £153,000, while the line *via* Gurlcigh Point, which has been abandoned, would cost £360,000? Yes.
106. Will there be any necessity for charging special rates upon this line? I should think not. It would be highly injudicious to charge special rates upon it.
107. Do you know the loss upon the Narrabri line? No; I do not. That is a traffic matter which I have not looked into.
108. Do you know if the line to Narrabri is paying? I could not tell you without turning up the Commissioners' report.

C. J.
Saunders,
Esq.
14 Nov., 1893.

Charles James Saunders, Esq., Chief Draftsman, Department of Lands, sworn, and examined:—

109. *Mr. O'Sullivan.*] You prepared a map showing the conditions under which the land in the district through which it is proposed to construct this railway is occupied? Yes; I got my information from the maps in the Lands Department.

110. Will you state the exact areas of the lands shown on the map? Freehold land is tinted red, and of it there are 890,000 acres; conditionally purchased and leased land is tinted blue, and of it there are 1,804,000 acres. There are 985,000 acres held in reserves, which are tinted green. The rest of the map which is uncoloured, shows Crown lands, the area of which is 3,615,000 acres.
111. What is the area embraced by the map? The area which it is supposed the proposed railway will benefit.
112. How far does it extend from the railway line? Roughly speaking, the map takes in all the land within a radius of 60 miles from Moree.
113. What is the general character of the country? I am not personally acquainted with it.
114. Can you inform the Committee if much settlement has gone on there of late? There has been a great deal of land conditionally purchased within the resumed areas.
115. Is this land in the Central or in the Eastern Division? In the Central Division.
116. Has the settlement you speak of taken place recently? Within the last nine years I should say.
117. The district may be regarded as a progressive one, as far as settlement is concerned? As far as conditional purchasing is concerned. We have no guarantee, however, that the original selectors still hold the land.
118. Has much of this land been thrown up because of high rentals, and so on? I do not think so.
119. What is the character of the reserves? They have been made for a variety of purposes. The largest reserves are timber reserves.
120. Do you know anything of the nature of the timber there? No.
121. *Chairman.*] You have merely prepared this map from data in the office? That is all.
122. The local district surveyor will be able to give us information as to the character of the country, and so on? Yes.
123. *Mr. Neild.*] Are we to understand that your Department keeps no record of the character of the land which it surveys? A report has been sent in by each of the district surveyors, giving the general characteristics of the country.
124. That information is in the office, but it is not in your possession at the present time? I supplied the Under Secretary for Works with this information.
125. *Mr. Suttor.*] Is any land in this district in the Western Division? No.
126. *Mr. Neild.*] The map comprises land within about 20 miles of Inverell? Yes, but it only goes about 15 miles east of Warialda.
127. Is the alienation in this district similar to that round about Inverell? Somewhat similar, in the eastern part of the district.
128. *Mr. Ewing.*] Is the land marked blue land which has been conditionally purchased, or simply land held by conditional purchasers? Land that has been conditionally purchased. The probability is that a very large part of it has changed hands.
129. You do not know who holds it now? No. That could be ascertained by referring to the records of the Department.
130. Notice has been given that the squatting leases will cease at the end of two years? That is in connection with some provision in the Act of 1894, but many lessees have applied for an extension of lease under the Act of 1889. There is a possible right of extension.
131. Do you regard land held in that way as Crown land? Yes.
132. What is the duration of the scrub leases shown on the map? They are probably twenty-year leases.
133. The land will revert to the Crown at the end of that time? Yes.

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WEDNESDAY, 15 NOVEMBER, 1893.

Present:—

JACOB GARRARD, Esq. (CHAIRMAN).

The Hon. WILLIAM HENRY SUTTOR.
The Hon. JAMES HOSKINS.
The Hon. FREDERICK THOMAS HUMPHRY.
The Hon. JOHN DAVISS, C.M.G.
The Hon. WILLIAM JOSEPH TRICKETT.
THOMAS THOMSON EWING, Esq.

WILLIAM CHANDOS WALL, Esq.
WILLIAM MCCOURT, Esq.
JOHN CASH NEILD, Esq.
EDWARD WILLIAM O'SULLIVAN, Esq.
CHARLES COLLINS, Esq.
HENRY DAWSON, Esq.

The Committee further considered the proposed Railway from Narrabri to Moree.

Henry Deane, Esq., Engineer-in-Chief, Railway Construction Branch, Department of Public Works, sworn, and examined:—

134. *Mr. Davies.*] The line now before the Committee is the last surveyed by your staff? Yes.
135. Had you anything to do with the previous surveys? Yes.
136. How many different surveys have there been for a line from Narrabri to Moree? You might say that there have been three complete routes surveyed, together with some deviations.
137. The route submitted to the Committee is the shortest? In the matter of mileage it is not quite so short as the route marked blue—the permanently staked line—but it is the shortest desirable route.
138. And the least expensive in construction? It is the cheapest and most economical route.
139. What are the objections to the permanently staked line? The objections to that line are that the river crossing is bad; that it leaves out Narrabri, passing 2 or 3 miles to the west; and that the earthworks would be greater than on the adopted route, because so much attention is not devoted to following the surface. The route now submitted skirts Narrabri, and gives a suitable site for a station.
140. What is the character of the country through which the suggested route runs, as far as earthworks are concerned? Nearly all surface forming.

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141. What will it cost to construct per mile, according to your estimate? The estimated cost for the whole distance of 63 miles 50 chains is £153,000, or an average cost per mile of £2,409 9s. I have, however, for the purpose of easier working, divided that estimate into two parts. In the first part is comprised the cost of 3 miles 56 chains of line at the Narrabri end, including the bridge over the Namoi and the new station at Narrabri, which comes to £17,500 or £3,866 per mile. The second part is the cheaper, and comprises a length of 59 miles 74 chains, the estimated cost of which is £135,500, which, providing for station buildings, water supply, and other contingencies, runs out at £2,267 per mile.
142. What do you estimate the cost per mile of sleepers, rails, and the necessary appliances for laying the line, including ballast? In estimating the cost of the permanent-way I have taken advantage of the fact that there are in stock, in the stores of the Public Works Department and of the Commissioners' Department, a quantity of double-headed rerolled rails, which the Commissioners would be very glad to see used, and which would be suitable for this line. These rails the Commissioners have undertaken to deliver at Narrabri at a certain price, but there will not be enough of them to go right through. To make up part of the balance it is proposed to use some second-hand rails in fairly good condition, which will be taken from the main road. In addition I propose to use some of our stock of 71½ lb. steel flat-bottomed rails to make up the balance.
143. Can you give the Committee the length of the three different sections of rails? There will be 48 miles 30 chains of rerolled rails, 12 miles of second-hand rails, and 4 miles 70 chains of new rails. Those distances add up to more than the whole length of the line; but they allow something for sidings.
144. The single-headed rails will be used at the Moree end? No; I propose to use the new rails at the Narrabri end.
145. Are they as heavy as the rerolled rails? No; they are rails such as we have been using for some time past, and weigh 71½ lb. to the yard. The rerolled rails weigh 75 lb. to the yard.
146. How much will the new rails cost per mile? Including fastenings.
147. Fastenings, sleepers, and ballast? Taking the steel and iron fastenings, they come to £924 11s. per mile.
148. That includes sleepers? No; it does not include sleepers. I estimate them separately. The second-hand 71½-lb. rails will come to £605 per mile, while the 75-lb. rerolled rails, for which there are two prices, will come to £773 16s. 2d. per mile, and £714 16s. 3d. per mile. The total cost of the permanent-way material reckoned in this estimate is £48,351 12s. 9d.
149. That is including sleepers? No; it does not include sleepers.
150. Nor ballast? No.
151. Does it include the delivery of the rails? It includes their delivery at Narrabri for the contractors' use.
152. It includes fish-plates, bolts, and chairs? All fastenings. I have estimated the laying of the line at 1s. 3d. per lineal yard; the ballasting of the first section I put down at 2s. 6d. per lineal yard, and of the second section at 3s. 6d. per lineal yard. The prices are low, because it is proposed to use only a small quantity of ballast. On the ordinary lines we use from 2,000 to 2,200 cubic yards per mile, but on this line, to save first expense, we shall put only 3 inches of ballast under the sleepers. The quantity of ballast per mile has been reduced to 1,200 cubic yards, so that I think that the work of ballasting can be done for something near the prices I have named.
153. You intend to use about half as much ballast as you generally use? A little more than one-half—somewhere between one-half and two-thirds. The sleepers being of a rougher description than are usually taken, I have put them down at 2s. 6d. a-piece, for which I think they can be very well obtained. The Railway Commissioners have been paying as much as 4s. 4d. for sleepers at Narrabri, but they are the large sleepers—9 feet by 10 inches by 5 inches.
154. There is a large forest of timber near Narrabri? There used to be: but it is getting worked out. You have to go nearly 20 miles from Narrabri in order to get large sleepers.
155. Will you have the sleepers dressed? No; they will be round on the top.
156. Half round sleepers? Round on the top. They will be roughly hewn. Instead of the contractor being required to supply a perfectly rectangular sleeper, he will be allowed to leave the sapwood on, so long as when the way is cut to fit on the chairs there is a sufficient width of hardwood—4 or 5 inches—to take the bearing. I made inquiry some time ago about this class of sleeper, and I have very good reason for believing that they can be delivered for the price I have named, and that they will answer the purpose required of them very well.
157. Are the various kinds of rails you have mentioned of uniform length? The rerolled rails are, I think, in lengths of 18 and 21 feet.
158. What is the length of the steel rails? The steel rails and the iron rails would generally be 24 feet in length. The last rails indented have been sent out in 30 feet lengths; but I do not propose to use them, because 24 feet lengths will be more convenient. There is a stock of 24 feet rails on hand.
159. Is the ballast supply easily accessible? Fairly so. There is ballast in the Namoi River.
160. Sandstone? No; river gravel. There is a ballast hill in the neighbourhood of Narrabri, about three quarters of a mile from the line, and about 2 miles from the centre of Narrabri, where they are getting good road metal. I think that the gravel ballast to be found in the district will be fairly suitable for the line. Some distance from Narrabri we go through undulating ground, consisting of a kind of gravel which will probably be suitable for ballast.
161. Do you, in your estimate, provide for fencing as well as for station buildings? Only a small sum is provided for fencing.
162. What length of fencing will there be? I have not made a definite item of the fencing. I only propose to fence at the stations and where necessary. The line generally will be left unfenced.
163. Have you constructed any other lines without fencing them? Yes; the Nyngan to Cobar line.
164. Has any complaint been made by stock-owners and residents of the district because the line is unfenced, or has any accident arisen in consequence? I have not heard of any.
165. As far as your knowledge goes that line answers fairly well without being fenced? Yes; I do not think there can be any serious objection to leaving a line of this character unfenced so long as the trains run in the day time.
166. Are the trains running between Nyngan and Cobar used only in the day time? Yes.
167. If traffic develops on the proposed line would you recommend that it should be fenced? I am sure that if the trains had to be run at night the Commissioners would find it desirable to fence the line. Otherwise sheep would be sure to lie on the ballast.
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168. You do not apprehend any danger if trains are run only during the daytime? No; especially as it is proposed to run them slowly.
169. At what price per ton do the rerolled rails stand in the Commissioners' books? At £5 10s., I think.
170. Did they not cost more than that to reroll? I believe that they did; but a certain value has been written off.
171. Then the proposed line will get the benefit of the reduced cost? Yes.
172. Have you been over the whole length of the line yourself? No; I have only been over a few miles of it.
173. At the Narrabri end? Yes.
174. Personally you know little of the country? I know the district pretty well—at least I know the class of country very well, because I lived in the district during the construction of the Gunnedah-Narrabri line, and I am therefore able to judge of its suitability for railway making.
175. Are you of opinion that this line if constructed would serve most of the district you speak of? I think it is a very good line from an engineering point of view.
176. And would serve the district well? I should say so.
177. You have no great knowledge of Moree? Moree being the centre of the district the object is to make the shortest and most direct route there, and that has been done in this case.
178. *Mr. McCourt.*] What would be the difference in cost between this and a better class line;—would it be large? A better class of line would probably cost more; but I have not gone into the question.
179. You could not say how much more? No; I have made no calculation.
180. You only propose to put 3 inches of ballast under the sleepers: but the Commissioners may afterwards find it necessary to reballast the line? As the traffic increases the Commissioners will have to put on more ballast. I think that they are quite aware of that, and prepared to undertake the work.
181. Therefore we have not the real cost of the line before us? If the ballast is increased later on it will, I presume, come out of revenue, and be charged to working expenses.
182. The cost of the line would be increased? But if more ballast was put on the line would become more valuable.
183. What you say practically amounts to this, that we have not the real cost of the line before us? I think you have, because it is only proposed to work the line in a certain way. The line is to be made for a certain purpose which, if carried out as I estimate, it will serve. It is a cheap line, because it is nearly the extreme extension of the North-Western line. If it were a main line, upon which there was a lot of through and quick traffic, it would be desirable to spend more money on it.
184. Would it not be better to make it a permanent line in the first instance, instead of having it altered by the Commissioners? I do not know that it would. There has been a call for lines of this character for some time past, and it is a very desirable thing to make cheap lines.
185. Provided that they will do the necessary work? Provided that they will do the necessary work.
186. But you say that this line will not do the work, that as soon as the Commissioners take it over they will have to ballast it? I did not express myself quite in that way. I said that probably as the traffic increased it would be necessary to improve the line; but I believe that as proposed to be constructed, it will answer all purposes for some time to come.
187. How much will it cost per mile for bridges? Taking the first section, there will be the river crossing at Narrabri Creek, which I put down at £5,261 17s. 6d.
188. That would be a wooden bridge? Yes.
189. *Chairman.*] Is there not a double waterway there? Yes; but the estimate provides for both bridges. In addition there will be some openings and culverts which will cost £1,319 15s., so that the waterways on that length will come to £6,581 12s. 6d., or £1,644 per mile. On the second section the cost of the waterways, box drains, and culverts will come to £14,392 12s. 6d., which, divided by the whole length of the section, gives £240 a mile.
190. *Mr. McCourt.*] Roughly speaking the bridges will cost altogether £21,000? Yes, very nearly.
191. Is any of the country between Narrabri and Moree subject to floods? Some of the land between the present station and the old station is subject to floods, and the water spreads itself over the land near various creeks; but I have provided for that.
192. Have you an estimate of the earthworks? I shall keep the earthworks above the flood-level everywhere.
193. What will they cost per mile? On the first section they will come to £1,717 10s., or £464 per mile, and on the second section £17,979 5s., or £300 per mile.
194. *Mr. Wall.*] The total cost of this line is about £2,800 per mile? £2,409 per mile.
195. What was the cost of the Cobar line? A little over £3,000 per mile.
196. That is a heavier line than this? Yes; there are more earthworks on that line, though I think it would have been constructed within the original estimate, or at a slight increase upon that estimate, if the grades had not been altered during construction. That added very considerably to the cost.
197. On that line you used new material altogether? Yes; 60-lb. rails.
198. What was the estimate for the Cobar line? £2,560 per mile was the first estimate.
199. Was not that estimate reduced? No; when tenders came in they exceeded it.
200. What is the estimated cost of station buildings upon this line? £4,520 for the whole line.
201. How many stations are there? The stations are marked upon the map. There will be the new station at Narrabri, one at Edgeroi, one at Woolabrar (for Millie) one at Gurley, one at Tycannah, and the terminus at Moree. At Edgeroi, Gurley, and Tycannah there will merely be sidings; but at the other places more accommodation will be provided in the shape of waiting sheds and so on.
202. Is your estimate of the cost of fixing the rails upon the sleepers above or under the ordinary cost of that work;—will it not be more difficult to fix the rails on the half-round sleepers than to fix them on square sleepers? I think not. They will all have to be run through a machine to plane off the top surface.
203. How does your estimate compare with the ordinary cost of fixing the rails on to square sleepers? It is a little above what we have paid in one or two cases, and a good deal below what we have paid in other cases. I propose to give the contractor the utmost facilities for getting on with this work by allowing him to use the rails as he goes on, in order to run his material and ballast ahead. Up to the present

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- present the contractors have not been allowed to put an engine or waggons upon the road until a certain amount of ballast has been laid down; but in this case I propose that the contractor shall be responsible for the condition of the rails, and be allowed to run out with the rolling stock over "formation," as they say. That will increase the chance of getting the work done cheaply.
204. Have you considered the question of letting this work in small contracts—some reference has been made to that? I am pretty sure that if the work is let in small contracts it will not be done so cheaply. I think the only way to get it done cheaply is to give it to one contractor, who will make a rush and go right through with it. He will be able to throw up the earthworks a little in front, and follow up with the ballast immediately.
205. Do you not think that the keener competition which would result if the work was let in small sections, would allow it to be done more cheaply? I do not think so. The plate-laying is the principal part of the work, and it would have to be started from one end. Take the second section for instance; the earthworks are £300 per mile, and if you let them to earthwork gangs, pure and simple, they would not be able to do anything with the bridges or box-drains, which will cost about £240 per mile, or four-fifths of the cost of the earthworks, while the plate-laying will cost twice as much as the earthworks.
206. I understood from the remarks made by the Minister when moving that this line be referred to the Committee, that it was the intention to let it in small contracts, and I was anxious to know whether his remarks were based on information received from his Department? I have received no instructions on the matter. Of course, if the Minister wished the work to be let in small contracts, the best would have to be made of it; but I should not recommend its being done, either for cheapness or speed.
207. You do not think it would tend to lessen the cost? No.
208. What would be the grade on this line? The ruling grade will be 1 in 100 against Newcastle, and 1 in 75 outwards.
209. The haulage power of an engine on this line would be nearly double its haulage power upon ordinary grades? Yes.
210. *Mr. Neild.*] You say you know something of this locality;—have you seen the recommendation of the Tamworth district surveyor that the line should be carried as far west as possible; that the present route should not be adopted? I think I may say that I have. The Under Secretary mentioned it to me.
211. Would the cost of the line be materially increased by taking it further west, either because of the increased distance, or because of the heavier works that would be necessary? The distance would be increased, and the work would be increased somewhat. No doubt the route recommended is the cheapest that has been surveyed. The further you go down these creeks, the more they spread out. I believe that if the travelling stock route had been adopted, it would have been found necessary to raise the line in order to keep it out of the water, while the ground there is not quite so sound.
212. Notwithstanding the statement that more traffic would be obtained by taking the line further to the west, you consider that the advantages given by this line would override the advantage of increased traffic or increased public convenience? I have only studied the matter from the engineering point of view, and I think that this would be the cheapest and most direct line.
213. Have you estimated the cost of the travelling stock route? Not under present conditions.
214. Can you give us any idea as to what the difference in cost would be? I am afraid it would be a mere guess; but from what I have heard, and the reports which I have read, I should think it would cost £300 or £400 a mile more, because the waterways are larger and the earthworks would have to be increased to keep the formation dry.
215. A more westerly route would involve increased expenditure, not only on account of the additional length but also on account of the increased earthworks? Yes.
216. What would be the difference in mileage between the travelling-stock route and this route? About 6 miles.
217. Did I understand you to say that the sleepers you propose to use will be dressed by a sleeper-dressing machine? They will be dressed in the same way that higher class sleepers are dressed. They will be run through a machine and adzed for the width of the rail, or of the chair, as the case may be.
218. You have given information in regard to the Queensland railways over which you have travelled, and of which you expressed yourself somewhat favourably, because of their cheapness;—would it not be better, in the case of this railway, to use sleepers such as are used on the Queensland lines; that is, sleepers which have been simply split and adzed? Those are what I would use.
219. The sleepers used in Queensland are not put through any dressing-machine? That machine is only to adze them.
220. You mean that they are put through the machine simply to make a groove? Yes; it is cheaper to use a machine than to employ hand labour. We just cut out the width of the rail or chair.
221. Do you think it would be economical to take up half-worn rails from the existing line to use on this line? Those rails have still a considerable amount of life left in them, and would answer the purpose very well for low speeds.
222. At what rate of speed do you propose to run upon this line? I think it is proposed to run at the rate of about 15 or 16 miles an hour.
223. That is a very low rate? I have not got the Commissioners' report with me, but the line is intended to carry out the suggestion made by the Commissioners in their report of last year. They suggested that pioneer lines should be constructed, and trains run upon them at low speeds. On a line such as we propose to construct I do not see any necessity for limiting the speed to 15 or 16 miles an hour; but high speeds should be avoided.
224. What would you regard as a high speed—30 miles an hour? Under these conditions I should regard from 25 to 30 miles an hour as a high rate of speed.
225. If it were found desirable to work the line at a higher rate of speed, would it be necessary to entirely remodel it? No.
226. What would be necessary—new sleepers or new rails? The sleepers will last as long as any others, because I should have nothing but ironbark; but you would have to put on more ballast, and raise the line.
227. Would it be necessary to change the rails? No; not until they wore out.
228. Do I understand that the only difference between the proposed line and a full service line lies in the direction of ballast? The difference is in ballast and formation.

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229. What would be the difference between this rather second-class line and a line capable of being worked as our ordinary lines are worked? It depends upon what you understand by a line of the ordinary type. In country such as this you might have a really good line upon which you could run large loads without the wear and tear being very heavy. It would not be necessary at any time to run the heavy Baldwin engines over these lines; indeed, the Commissioners do not run those engines out on the level country now.

230. What would be the difference in cost per mile between the proposed line and a line that could be worked at from 25 to 30 miles an hour? I should say, £500 or £600 a mile.

231. That would be for additional ballast? You ask me what would be the difference in cost; suppose I were designing a line to suit the ordinary traffic.

232. I am asking you the difference between the cost of the proposed line and the cost of a line upon which trains could be run at 25 or 30 miles an hour? In level country, such as this, I do not think the difference would be very large.

233. Then, do you not think it would be as well to incur the extra expense in the first instance;—would it not cost more to raise the line at some future date than to put on more ballast now? Yes, if you had to raise it throughout; but all that would be required would be a little more ballast, which could be put on by means of hopper waggons, and the road could be lifted without incurring any material expense.

234. It would not cost much to make the line suitable for more rapid traffic than it is proposed to run on it? No.

235. *Mr. Dawson.*] Where will you get the ironbark sleepers? They will probably have to come from the Narrabri end. I am aware that the first-class sleepers used by the Railway Commissioners on the main lines can only be got at some distance from Narrabri; but I believe that the class of sleeper which I propose to use can be got very much nearer. These sleepers can be obtained from trees out of which you could not get first-class sleepers.

236. Does any red-gum grow on the Gwydir? There is red-gum on the Namoi.

237. Has it been tried? Yes; it was tried on the Gunnedah to Narrabri line, but it was not very satisfactory.

238. For what reason? There are too many gum-veins in it, though it is capital timber if you can get it good. A man there took a contract for grooving sleepers out instead of sawing them, and they were splendid sleepers—you could not get anything better. A contract was made between the contractor for the line, and some one else to saw the timber, but the rejections on account of gum-veins were very large—25 or 30 per cent.

239. In making your estimate, which route have you had under consideration—that marked red, or the permanently-staked line? The red line. The reason that the other is marked "Permanently staked," is that it was approved of by Parliament and permanently staked.

240. The red line is the one which can be made most cheaply? Yes.

241. *Mr. Collins.*] Have you inspected the crossing of the permanently-staked line? Yes.

242. Would it be much more expensive than the one now proposed? Very much more expensive, because there are several miles of flooded land which would have to be crossed.

243. You have personally inspected the proposed crossing? Yes.

244. Did you choose it yourself? It was mentioned by the residents of Narrabri, and I went out and inspected it.

245. Do you think it is the best crossing that could be got on the Namoi near the town? I believe so, undoubtedly.

246. Do you know how far Bingera would be from the proposed line? The distance from Bingera to the proposed line is 48 miles. From Bingera to Narrabri, by road, *via* Edgeroi, is 68 miles.

247. Do you know if this line would serve that town, seeing that some of the Bingera traffic now comes 80 miles to Narrabri? That depends upon the roads. I cannot give any information about the matter.

248. Do you know if this line goes through a timber forest? There is a timber reserve there, but the timber would be of no good for constructional purposes.

249. It could not be used for sleepers? No.

250. You say that there is ballast along the line, and also at Narrabri? Yes.

251. *Mr. Humphrey.*] Your estimate of £153,000 is exclusive of the cost of resumption and compensation? Yes.

252. What do you estimate that to be? I have not estimated it at all. It does not come within my duties.

253. Who can give us information upon the point? I presume the Under Secretary has already given it. In laying out the line I have taken care to run through Government reserves wherever possible, and a reference to the land office map will show that the line for the greater part traverses Government reserves.

254. Are you able to tell us if the cost of resumptions is an important item? I think it ought to be very small.

255. Shall you be obliged to resume any house property at the terminus at Narrabri? I think not. The land between the present station and the new station is all alienated. I do not know what arrangement can be made about it, but the owner of the land where it is proposed to put the new station has offered it to us free.

256. Do you think that the cost of resumption at Narrabri would be a serious item? I should not think that it would.

257. The estimate, then, will not be very greatly increased by the addition of the cost of land resumption and compensation? Certainly not. The most costly part, as far as I can judge, will be the first 2 miles.

258. Will this line be similar to the Nyngan-Cobar line in almost every respect? It will be cheaper than that line.

259. Will the ballast be the same? There will be less ballast.

260. Is the Nyngan-Cobar line working satisfactorily? So far as regards maintenance, it is working very well.

261. Is it carrying the traffic satisfactorily? Yes; it could carry a lot more traffic than it gets.

262. Have you any reason to doubt that this line will serve the traffic for many years? No; I believe it will answer the purpose thoroughly.

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263. You appear to hesitate—have you any misgivings about the matter;—is there a weak point in the line? No; but I want to answer your question in a fair manner. I consider that this line will answer the purpose. If it is a little weak, that is chiefly because the foundation will be weak, and that is a defect which can easily be remedied by putting on more ballast as time goes on. I would not recommend a weakness which was not curable.
264. Would the addition of extra ballast strengthen the line for all traffic? Yes.
265. If it is discovered that more ballast is necessary, that ballast can be put on without interfering with the traffic? Without interfering with it in the slightest degree.
266. And without raising the rails? In putting on more ballast the rails will have to be raised; but that will not interrupt the traffic.
267. What would be the cost of the work per mile, as far as you can estimate it? That would depend very much as to how much was done. I do not know that I could give an estimate very well.
268. If the whole length had to be strengthened by the addition of ballast, what would the work cost? I should rather give an estimate after I had seen the effect of the working upon the line. I have estimated that the ballast will cost 3s. 6d. a lineal yard, and for another 2s. 6d. a lineal yard a good job could be made of that part of the work.
269. What would it be a mile? £220 a mile. If the ballast appeared low in places, a little more could be put on. The work could be done gradually, without interfering with the traffic.
270. In estimating the cost of the ballast at 2s. 6d. per yard, do you include the cost of labour? Yes.
271. Do you think that anything more besides ballast would be necessary to make the line sufficient for all traffic? I do not see the objection to this line, because of its being of a lighter character than the main line. There will be no difficulty in working it. There will be less done to the formation of this line and the banks will be kept lower than on the Werris Creek to Narrabri line, so that you can never make it a line of the same character, but it will answer all traffic purposes very well.
272. I am speaking of the line being sufficient for the probable development of traffic between Narrabri and Moree? So far as I can tell, I think it could be made suitable for any traffic at a cost of from £200 to £500 per mile.
273. You think there is no other contingency, except the possibility of additional ballast being required, that need be taken into consideration by the Committee? No.
274. *Mr. O'Sullivan.*] Mr. Robert E. Jones in his report to the Under Secretary argues very strongly in favour of the Gurleigh Point route. Are there any engineering objections to that route? No; and I was strongly in favour of it myself until this new crossing was found. There is a very good crossing on the Gurleigh Point route, but it is further down the river, and it is stated that a good deal of the low-lying country along the route is inundated at flood time.
275. But the proposed line will run through country likely to be inundated? Not much after passing the Namoi.
276. Will it not have to cross a great number of creeks? Yes.
277. Are they not subject to floods? They all spread out a little.
278. Mr. Jones, in his report, speaks about the route generally being subject to floods? Wherever you go you are likely to meet with floods, small or great.
279. Does this line traverse for any distance the range of mountains shown on the map? The mountains are about 15 or 20 miles away from the line.
280. There is no doubt about a good crossing having been discovered? No doubt at all.
281. It is maintained here and elsewhere that the best crossing is on the Gurleigh Point line? Some years ago I went to Narrabri in order to examine the river. I started from Narrabri and went down the island which lies to the west of the town between the Narrabri Creek and the Namoi River. Then I followed the river below where the purple line crosses, as far as Mollie, where I think the road-crossing shown on the map is. The floods spread very widely over all that country, and the whole of the island to which I refer, except perhaps to one or two small spots, is covered in the highest floods. The Sectional Committee will, of course, see this place themselves, and they will notice where the proposed line crosses there is a patch of land which is never flooded. The class of vegetation itself shows that, because if the flood-water went over it it would be killed. The ground I refer to is quite high, and is the only place near about which is dry during the highest floods.
282. Why was the line not taken to Narrabri before? I imagine that it was expected that any future extension would be to Walgett.
283. If you took the line *via* Gurleigh Point, Narrabri proper would be deserted, and a new town would be created at what is called Narrabri West? There is a town there now. A lot of land has been sold there.
284. But if the line were taken *via* Gurleigh Point, Narrabri would be destroyed as a market for the Moree trade? Yes, certainly.
285. *Chairman*] There is a crossing 5 or 6 miles to the west of Narrabri, where the purple line crosses the river; is it a good one? Yes.
286. If the railway had not already been taken to Narrabri West, and you were making a line from Werris Creek to Moree, would you cross there, or would you go up to Narrabri? I should cross at the rocky crossing.
287. It is because a railway already goes to Narrabri West that you cross where you do? Yes.
288. How is it that this new crossing was never found before? I cannot say.
289. You went down to Gurleigh Point, 17 miles away, to obtain a good crossing when there was one at your very door? Yes. It was never supposed that this crossing existed. The residents of Narrabri seemed to be unaware of it.
290. How did you test it—by sinking holes? No; I have not sunk any trial shafts or made any borings.
291. Is the river so narrow that you can span it without putting in supports for a bridge? No; but I know what the character of the river is. We have borings on the permanently staked line, so that I know the general character of the river bottom. There is no doubt that it is quite safe.
292. Are the Committee to understand that the Gurleigh Point route was suggested in order to obtain a good crossing, rather than with the view to taking the line further west? A little of both, I should say. There was a better crossing on that line, and, of course, the fact that there was more traffic from the west may have been taken into consideration.
293. I think Mr. Paul was the engineer who surveyed the line from Moree to Woolabrar? Yes; the top part of the line.

294. Is he in the office now? Yes.
295. Is the engineer who surveyed the line from Narrabri West to where Mr. Paul ceased his labours available? No; Mr. Sams is not in Sydney.
296. You have seen this crossing yourself? Yes.
297. I presume that he could not give us any more information about it than you have given? I do not think that he could.
298. All the facts and data were laid before you for consideration? Yes.
299. *Mr. Dawson.*] Is the red line less liable to be flooded than the others? Yes.

H. Deane,
Esq.
15 Nov., 1893.

Hugh McLachlan, Esq., Secretary to the Railway Commissioners, sworn, and examined:—

300. *Mr. Hoskins*] Can you say of your own knowledge whether the Railway Commissioners are in favour of the construction of the proposed line from Narrabri to Moree? Yes.
301. Can you give me their reasons? They consider that it will practically pay interest upon the cost of construction. In their report they recommended it, "Upon the ground that it will tend to largely develop a considerable tract of valuable country, and will be an extension of the existing north-western line in the direction which will probably, at a future date, warrant a continuation to the Queensland border." By the figures they have given you will see that the line will practically pay interest upon the cost of construction.
302. Do the Commissioners consider that it will obtain traffic which would otherwise not come to the railway? I could not say that. The estimate is based upon the traffic that we already receive.
303. If the line is constructed is it anticipated that it will take some of the traffic that would otherwise gravitate to Inverell? I consider it would.
304. *Mr. McCourt.*] You estimate the goods traffic at nearly £10,000? Yes, goods and live stock. That is borne out by the existing traffic. I understand that you are to examine Mr. Harper, who collected the estimate. The estimate is based very largely upon the traffic of Narrabri. The Commissioners know the direction from which that traffic comes.
305. The Commissioners estimate the total working expenses at £7,000? Yes.
306. The length of the line is 63 miles? Yes.
307. Are you aware that the estimated working expenses of the Jerilderie line, which is only 45 miles long, are £8,500? I do not recollect what that estimate was.
308. How do you account for the difference? I only know that this estimate has been carefully considered by the Commissioners.
309. Will Mr. Harper be able to give us the information? Perhaps you might get it from the Commissioners. I do not recollect the facts.
310. I have got it before me that the Railway Commissioners estimated the working expenses of the Jerilderie line at £8,587, namely, locomotive expenses, £1,800, permanent-way expenses, £5,625, traffic expenses, £1,162. In the case of this line, however, the Commissioners put down the permanent-way expenses at only £4,000? Yes; there is a difference of nearly £1,600 in the permanent-way expenses; but I cannot say, from memory, how that comes about.
311. Will you have the information supplied to the Committee? I will ask the Commissioners for it.
312. *Mr. Wall.*] Have the Commissioners considered this line, irrespective of the application of the betterment principle? Yes.
313. They would recommend its construction whether the betterment principle was applied or not? Yes.
314. In making their estimate of receipts have they charged special rates, as upon the Cobar line, or have they based it upon the ordinary rates? Upon the ordinary rates. I do not think that the question of special rates has been considered.
315. What rates are they charging on the Narrabri line? The ordinary rates. The Commissioners' views, in regard to the betterment principle, are laid down in their report for 1891, and also in their report on the Lismore to the Tweed railway.
316. It is recommended that this line should be constructed upon the betterment principle? That is a matter of policy which they would not go into.
317. *Mr. Collins.*] Do you know if the Commissioners are prepared to take the line over under the conditions put forward by the Engineer-in-Chief? The Engineer-in-Chief consulted them, and I understand that they are quite satisfied with his proposal.
318. You do not consider that any local rate will be necessary upon this line? That has not yet been determined.
319. Seeing that the Narrabri to Werris Creek line pays so well, would it be necessary to impose higher rates upon this line? That would be a matter for the Commissioners to determine. So far they have not come to any decision with regard to it.
320. If the ordinary rates were charged there would be only a loss of £800 or £900 a year? Yes.
321. There was a considerable loss upon the Werris Creek line at first? I think so, in the earlier years; but the last report shows a small profit.
322. After the interest has been paid? Yes.
323. *Mr. Ewing.*] The Commissioners' views are set forth in the representation made by them to the Works Department on the 30th September? Yes.
324. *Mr. Humphery.*] The Nyngan to Cobar line is not fenced? I think not.
325. It is not proposed that this line should be fenced? No.
325. Can you say whether any difficulty has been experienced in working the Nyngan to Cobar line because of the absence of fencing? This will be a line worked in the daytime. I think the Commissioners' views on the subject of construction have been put before the Committee by Mr. Barling.
327. Do you not think that it would be necessary to fence the line? Not for the present at any rate.
328. Has the ballasting on the Nyngan to Cobar line been found to be sufficient? The Cobar line was a dearer one than this.
329. I think it was estimated to cost £2,500 per mile? I think it cost over £3,000 per mile.
330. That was because the grade was reduced? I think an additional cost of £20,000 had to be incurred in regard to that line.
331. What is the grade on the Cobar line? One in 100.
332. The first estimate was for a grade of 1 in 75? One in 70 I believe.

H.
McLachlan,
Esq.
15 Nov., 1893.

H.
McLachlan,
Esq.
5 Nov., 1893.

333. *Mr. Davies.*] How far does the differential rate system extend on the Northern line? There are no differential rates on the North-western line. Differential rates were only charged beyond Glen Innes on the Northern line.
334. Do you know anything of the country through which the proposed line will go? Nothing, except of the country that I have seen around Narrabri. Mr. Harper, however, has been over it within the last ten or fourteen days.
335. What kind of traffic is expected upon it? Largely wool and live stock towards Narrabri, and general goods to Moree.
336. What would be the distance from Moree to Sydney? About 414 miles.
337. What would be the freight upon wool? All that information is published in the general-rate book. No doubt a good deal of the wool would go to Newcastle, or to Morpeth. Moree would only be about 314 miles from Newcastle, which is not much more than the distance from Dubbo to Sydney.
338. How far is Bourke from Sydney? Five hundred and four miles.
339. Is there any probability of wheat being carried over the line? That traffic may develop; but at present very little wheat is grown in the district. I have heard people say, though I do not know how far they are correct, that wheat will be grown in the district.
340. In the estimate of earnings you have not taken wheat into account? No.
341. You simply deal with wool and live stock? And with general goods—the ordinary traffic of to-day.
342. The Commissioners strongly recommend the construction of this line? Yes; in the report that has been submitted to you.
343. Believing that if the line can be constructed for £153,000 the earnings will be sufficient to cover the cost and interest? Yes, practically.
344. From the first? From the first.
345. *Mr. Neild.*] At what rate of speed do you anticipate running over the line? The Commissioners put down 15 miles an hour as the maximum.
346. Would that enable you to compete with the teams? Sometimes a team cannot travel at all. I have known a four-horse coach to take nearly two days to go 44 miles in that country.
347. You already have to bear a considerable amount of competition with the teamsters? Not any great amount.
348. *Chairman.*] In your estimate of expenses you have allowed for interest at 4 per cent., while in previous estimates you have reckoned the interest at 3½ per cent.? The Commissioners thought that 4 per cent. would be a fairer charge.
349. In all the other proposals put before us the estimate was based upon a charge of 3½ per cent.? A few years back you could get money on more favourable terms.
350. This is the first time that 4 per cent. has been charged? I think so.
351. Who are the officers responsible for the estimate of the cost of maintenance? The Commissioners are responsible.
352. But who is the officer immediately responsible? They consulted with the engineers; but they are responsible for the estimate. It is their estimate.
353. Then why could you not answer Mr. McCourt's question as to why you allow so small a sum for maintenance in connection with this line as compared with the Jerilderie line? I did not expect that the question would be asked, and I should not like to give an answer to it without consulting the Commissioners.
354. This is the first of what you term pioneer lines? Yes.
355. You put it on a different footing from lines which have previously been constructed? Yes.
356. What would you call the Jerilderie line; it was not a pioneer line? It was brought forward as an ordinary light line, and was to cost from £2,500 to £3,000 a mile.
357. Will you consult with the Commissioners and be in a position to inform us to-morrow as to why there is this disparity in the two estimates? Yes.
358. How do the Commissioners justify their advocacy of this particular route when in 1889 they recommended the deviation from an even straighter line—that marked blue? They did not recommend a deviation, they simply recommended that a survey should be made for a deviation. When they made their report in 1889 it was thought that it would be difficult and costly to get a crossing at Narrabri, but since then a cheap and convenient crossing has been found close to Narrabri. It was on account of the difficulty of getting a suitable crossing that they recommended that the line should elbow out a bit.
359. It was not in order to get more trade, but simply so that a better crossing might be obtained? Purely that.
360. So the Commissioners took it upon themselves to teach the Constructing Authority, and left the matter of trade altogether out of the question? They simply recommended another survey, because they understood that it would be inconvenient to get a crossing at Narrabri, and they pointed out, as a compensating advantage for taking the line further west, that it would go nearer Millie.
361. Were the Commissioners in power when the Werris Creek line was made? No; that line was opened before 1883 or 1884.
362. Can you tell us why it was taken to West Narrabri? No; the work was done before the appointment of the Commissioners.
363. You have been in the Railway Office for a long time;—do you know why the line was taken to Narrabri West; was it in view of a possible extension to Walgett? I do not know.
364. We have been informed by Mr. Deane that if the line had not been taken to Narrabri West he would have crossed 3 or 4 miles further down the river? That is a matter of which I have no knowledge, nor do I think the Commissioners have any.
- 365-6. If this line was continued to Narrabri would the West Narrabri station be shut up? No; there will be a small station at Narrabri for booking and local goods; but the stockyards will remain at old Narrabri. At Maitland we have no less than three stations, and we have also East and West Tamworth.
367. But there the line goes straight on, and here you double right round? The line, if extended, would go nearer to the township and be handier for passenger traffic.
368. Did I understand you to say that you expected that the Warialda traffic would be diverted this way? I do not think I was asked the question.

369. Do you know if the Warialda traffic comes to Narrabri? The traffic from that district is split up a great deal—some of it goes through Inverell, some to Tamworth, and some to Narrabri. I think a good deal of it would go to the new line. From Moree to Newcastle is only about 314 miles, while Glen Innes is further away than that.

370. The only thing you have considered in your estimate is the trade which now comes to Narrabri from the district to the north? And we have provided for a small increase, made up by the traffic that now goes to Tamworth and Inverell.

371. So you are robbing Peter to pay Paul? A small quantity of that traffic would be diverted, but we should get the longer mileage as against Tamworth.

372. But not as against Glen Innes? Mr. Harper will be able to give you all this information, but you will find that there will not be a great deal in the estimate of traffic diverted.

373-4. Has Mr. Harper been in the district more than once? I think he has. At any rate he was there a fortnight ago.

H.
McLachlan,
Esq.
15 Nov., 1893.

THURSDAY, 16 NOVEMBER, 1893.

Present:—

JACOB GARRARD, Esq. (CHAIRMAN).

The Hon. WILLIAM HENRY SUTTOR.
The Hon. JAMES HOSKINS.
The Hon. FREDERICK THOMAS HUMPHERY.
The Hon. JOHN DAVIES, C.M.G.
The Hon. WILLIAM JOSEPH TRICKETT.
THOMAS THOMSON EWING, Esq.

WILLIAM CHANDOS WALL, Esq.
WILLIAM McCOURT, Esq.
JOHN CASH NEILD, Esq.
EDWARD WILLIAM O'SULLIVAN, Esq.
CHARLES COLLINS, Esq.
HENRY DAWSON, Esq.

The Committee further considered the proposed Railway from Narrabri to Moree.

Hugh McLachlan, Esq., Secretary to the Railway Commissioners, sworn, and further examined:—

375. *Mr. McCourt.*] Your attention was called yesterday to the difference between the estimate of the working expenses of the Jerilderie line and the estimate of the working expenses of this line—have you anything to say in explanation of the matter? I spoke to the Commissioners about it, and they point out that everything depends upon the character of the line and the nature of the traffic. This line has to be considered as a pioneer line. I do not know if Mr. Barling put the views of the Commissioners on the subject of pioneer lines before the Committee. The Commissioners reported upon the matter.

376. Will you kindly read the report? It is as follows: "That the country is right in insisting on cheaper railways where it is a question of 'a railway or no railway,' there is no doubt; but it would, in our opinion, be absolutely wrong to introduce a different gauge from the standard gauge. We do not think it is practicable or desirable to construct a subsidiary trunk line, or a line likely to convey any amount of traffic upon it, on cheaper principles than that recently carried out in connection with the Cobar line, the cost of that line, including all construction charges, being about £3,300 per mile. There is no doubt, however, that for purely pastoral and level country, where the traffic would be exceedingly light, a line capable of carrying a light locomotive with the ordinary class of rolling stock, at a speed of about 15 miles per hour, in daylight only, could be constructed, exclusive of bridges, waterways, and station accommodation, which latter should be of the most simple nature, for about £1,750 per mile, money being voted later on, when the traffic had increased sufficiently to justify a better class of line, to raise the line to the ordinary standard. This could only be considered a 'pioneer railway,' and would be altogether different from a standard railway line even of light construction, such as that to Cobar; it would be simply a line to carry traffic with reasonable speed at a lower rate of charge than it is now carried by road. The rates for such lines, on whatever scale fixed, would bring about a material saving to the users of it, as compared with the rates now paid for carriage by road, and the scale of charges fixed should be such as to avoid any material loss to the country in connection therewith. Lines of this character would avoid the great disadvantage of break of gauge; they would cost scarcely anything more in the first instance than a narrow-gauge line, and the whole of the ordinary rolling stock, exclusive of engines which could be selected from the lightest types existing in the service, could pass over them."

377. That report seems to be only upon the question of gauge? No: it gives a description of what the Commissioners mean by a pioneer line of railway.

378. This is what I want to get at: The Commissioners estimate that the maintenance of the permanent-way of this line will cost £4,000, while they estimate the maintenance of the permanent-way of the Jerilderie line, which is 20 miles shorter, at £5,625—why is there that difference? All lines previously dealt with were considered in the light of standard lines, and we know that the maintenance of the permanent-way upon the main lines and the principal branch lines is a certain sum, which depends entirely upon the character of the traffic. If trains are run upon a line at high rates of speed, the cost of maintenance is thereby increased; while if they are run at low rates of speed, the cost of maintenance is lessened. Besides, since the Jerilderie estimate was made, the cost of maintenance has been reduced in various ways, and greatly by the increased use of tricycles, which enable the men to do more work, by allowing them to get from place to place more quickly. We are getting out a tricycle now which will carry more than one man and the tools, and in this way, time, which would otherwise have to be spent in walking from place to place, can be spent at work. Then this line is essentially different from the Deniliquin line. All these matters were considered in making the estimate.

379. How many maintenance-men are there to the mile on the Cobar line? One to about every 3 miles.

380. On the Werris Creek line how many men are there to the mile? I do not know these details. The Commissioners did not expect that the Committee would go into details.

381. But this is not a matter of detail? It is a matter of railway management. The Commissioners think that the 63 miles of permanent-way could be maintained at an annual cost of £1,000.

382. Previous estimates given by the Commissioners have made it appear that certain lines would not pay because of the working expenses, and I want to know if this estimate has been purposely lowered? This is quite a different line from others which have been considered, and is simply intended to carry traffic at a slow speed.

H.
McLachlan,
Esq.
16 Nov., 1893.

- H. McLauchlan, Esq.
16 Nov., 1893.
383. It will not be so good a line as the Cobar line? We are not going to run so fast upon it.
384. But if it is not so good will that not make the cost of maintenance about the same? I do not think so. The Commissioners think that the line can be maintained for the expenditure which they have estimated, and they have experience to guide them—experience of other light lines.
385. Who are the officers who usually supply these estimates? This is a matter largely thought out by the Commissioners. They consult the engineers.
386. Who are the engineers they consult? The Engineer-in-Chief for maintenance, Mr. Foxlee, would be one.
387. You state that the permanent-way maintenance throughout the Colony has been cheapened since the Jerilderie estimate was made? That estimate was made shortly after the Commissioners were appointed, and it was based upon figures obtained from the Engineer in office at the time.
388. How much has the maintenance of permanent-way been cheapened—10 or 20 per cent.? I could not answer that.
389. How many trains a day is it proposed to run over this line? It is proposed to run a daily train in and out.
390. You estimate the cost of running that train at £1,500? Those are the locomotive expenses.
391. On the Jerilderie line it was proposed to run three times a week? Yes.
392. And the estimated expense was £1,800? But probably the same staff of men would be required to do the work. On the Temora line we have one set of men to see to the running of a train three times a week, and probably the locomotive expense would be the same if we were running six trains a week.
393. Then the men on the Jerilderie line are often idle? They can be used about the goods sheds and pumping stations. They can be used profitably in one way or another. But it is difficult for the Committee to go into these details. The Commissioners have thought the whole matter out, and they are responsible. They are inclined to think that in these matters the responsibility rests with them, and that it is unnecessary for them to give detailed information.
394. I think we are entitled to have detailed information; at any rate previous estimates given by the Commissioners have been excessive? I think the Jerilderie estimate might be reduced as far as the permanent-way is concerned.
395. Would not the same remark apply to all cases; take the Inverell line, for instance? No; that is a comparatively recent estimate, and the line passes through altogether different country. The country there is heavy.
396. At any rate these estimates would be cheapened if the Commissioners had to make them now? Yes, the estimates made by the Commissioners directly after they were appointed. The Jerilderie estimate was made early in 1889.
397. Mr. Foxlee supplied the estimate before us? No, he did not supply it; the Commissioners only consulted him. It is their estimate.
398. Did the Commissioners visit this district before they made their report? Yes.
399. Recently? Not very recently.
400. They made their report without having recently seen the district? They have not been there during this year.
401. Do you know how long they were in the district—were they there one day, or a week? I think they were there two or three days.
402. Is this the first report they made, or did they make two reports? They made a previous report.
403. Did they visit the district before making the first report? I think so.
404. Will the construction of this line largely increase the traffic on the Werris Creek line? I do not know that it will to a very large extent—at any rate, not to start with.
405. I suppose the character of the construction has been referred to the Commissioners; they know that only 3 inches of ballast will be used, and they approve of that being done? Yes. This is purely an experiment; but they think that the line can be satisfactorily worked. The country is level.
406. They are prepared to incur any extra expense which may be occasioned? Yes. If the traffic increased an additional vote could be taken to raise the standard of the line. This is an experiment. A similar line has not been made in the Colony before, but the Commissioners think that it will answer.
407. You are aware that only 3 inches of ballast will be used instead of 6? Yes.
408. Suppose the Commissioners find it necessary to put 3 inches more upon the line, to what account will the cost be charged—to the revenue account, or to the capital account? That is a matter which has not been considered further than stated, but it would seem right, if it were desired to make the line a standard line, to get a further vote to pay for the improvements.
409. But what is the practice? This is the first line of the kind which we have had. When we improve an existing line it is usual to debit the cost to working expenses, because it is really maintenance. A line is always kept up to its normal standard of strength.
410. Then if you had to put 3 inches of ballast upon this line you would charge the cost to working expenses? I do not say that. If we have to spend £50,000 in bringing the line up to the standard and making it fit for high speeds it would be only reasonable that a vote should be taken to pay for the improvements.
411. But do not the Commissioners follow out a settled practice? The maintenance of a line is always charged to revenue, unless it is of an unusual character. Everything is debited to revenue; but if you put up a new station that would go to the capital account.
412. But if you replaced an old station? That would generally go to working expenses.
413. You are aware that three classes of rails are to be used in the construction of this line? No, only two I think—double-headed rails and flat-bottomed rails.
414. If, after the opening of the line, one class of rail does not work, and new rails have to be procured? I do not see how that could happen. I do not think it is worth while discussing a supposititious case.
415. Suppose it did happen? If we renew rails upon the existing lines the cost is charged to working expenses.
416. But what about this line? The matter has not been considered, but the Commissioners do not think that such a possibility comes within practical working.
417. It is a very important matter for us to know whether, if the rails on this line had to be renewed, the cost would be charged to working expenses? I think it would.

H.
McLachlan,
Esq.

16 Nov., 1893.

418. *Chairman.*] Has your attention been drawn to the estimate in connection with this line prepared by the Commissioners in 1889? Yes.
419. In that estimate the locomotive expenses are the same as in the present estimate, the traffic expenses are reckoned at £1,660, or an increase of £160, and the permanent-way expenses are put down at £7,000—an increase of £3,000? I think the answer which I gave to Mr. M'Court shows the reason for that. That estimate was prepared for a standard line, and at the time it was prepared the cost of maintenance was somewhat higher than it is now. The Commissioners have been able to introduce various economies to cheapen the cost of maintenance, and these two things have combined to bring down the estimate. There is no comparison between a pioneer line and a standard line. When the first estimate was made it was also proposed to fence the line.
420. But the annual expense of maintaining fences is very small? Still it all comes in.
421. But since this will be a less substantial line, is it not reasonable to suppose that the wear and tear will be more? A great deal depends upon the speed at which the trains are run, and it is intended to run the trains on this line at a low rate of speed. The Commissioners have recent experience to guide them in this matter, and they are quite satisfied with their estimate, and will endeavour to keep the expenses down. I may give one instance as to how the cost of maintenance has been lessened. On the Cobar line the cost of maintenance is not £50 a mile, while the estimate is £63 a mile in the case of this line. The two lines were not considered together, however. I only give this as an instance of how the cost can be cheapened.
422. But on the Cobar line you run three trains a week, while on this line you propose to run a daily train? But on the Cobar line the trains are run at high rates of speed, which would more than compensate for that.
423. At what rate are they run on the Cobar line? I think they sometimes run at 30 miles an hour. The ordinary rate of speed is run there.
424. Is it because the trains will be run at a low rate of speed and the rolling-stock will be comparatively light, that you will be able to save in permanent-way expenses? Yes.
425. *Mr. Neild.*] What rates do you propose to charge on this line—the ordinary ones? The estimate has been based upon the ordinary rates.
426. In the report which you read this afternoon, special attention is drawn to the possibility of its being desirable to charge special rates? The report refers to the desirability of charging such rates as will make the line pay; but the Commissioners estimate that it will pay working expenses and interest upon ordinary rates.
427. You said just now that you did not think that the proposed line would increase the traffic upon the existing line to Narrabri? The estimate does not provide for any material increase. It does not provide for a new development of traffic to any great extent.
428. I think evidence has been given to the effect that the Commissioners very strongly recommend the construction of this line, regarding it as a profitable one? Yes.
429. According to your evidence it will be profitable merely as a local line;—it will not be profitable as a feeder to the main line? It no doubt will develop traffic; but the Commissioners in their estimate have not taken any great value for that development. Their estimate is based very largely upon the traffic that exists to day.
430. It is a line that as far as revenue is concerned will practically stand distinct; it will pay its own way, though it will not specially feed the main line? It must tend to the development of country, but how far is problematic. Many people are sanguine that it will open up a grain district. The local residents will tell you that.
431. Most of the country is liable to flood? Oh! no—only about the creeks.
432. Will not the line have to be specially constructed to provide against floods? Only in one or two places so far as my knowledge goes; but the engineers could give you that information.
433. *Mr. Davies.*] Did I understand you to say that it was less expensive to maintain a cheap and practically effective line than to maintain a permanent line? As a rule that would apply, because—
434. It is easier to maintain a cheaply constructed line? Simply because there would be less traffic on this line, and trains would be run over it at a low rate of speed. Two great elements in the cost of maintenance are speed and weight. There can be no comparison between the wear and tear occasioned by running a heavy engine over a line at 50 miles an hour and running a light engine over it at 10 miles an hour.
435. But if the road is defective from want of ballast? It is not defective.
436. If it is not up to the usual standard it must certainly be more expensive to maintain than a road which has been properly made? So it would be if you ran over it at the same speed and with the same rolling stock.
437. You know that the country through which the line would pass is subject to floods? Yes.
438. And that it is a rotten kind of ground when wet? The Commissioners are aware of that.
439. Still you are of opinion that the cost of maintenance will not be more than £60 a mile? The estimate is £63, and the Commissioners are sanguine that it will not be exceeded.
440. What would the maintenance of the main lines cost? On an average about £200 a mile.
441. So that this estimate is very low? If you took sectional estimates they would not all be so high. On the Cobar line, for instance, the maintenance only comes to £50 a mile.
442. But there only three trains a week are run? But they are heavy trains, and run at a fair rate of speed.
443. What load would you be able to take upon the proposed line? That I could not say; but the country is level, and we should probably be able to take all the traffic.
444. How many tons of wool could a train take? I should think 150 or 200 tons.
445. What would be the weight of the locomotives used on this line? The Commissioners speak about using the lightest rolling stock we have. Some of our engines weigh as much as 92 tons, while others only weigh 30 or 40 tons. The Commissioners would use the lightest class.
446. You would not use any weighing less than 50 tons? That would be somewhere about the weight I should say.
447. Do you think the line will be strong enough for rolling-stock of that weight? The Commissioners think it would be suitable for the lighter kind of rolling-stock.
448. *Mr. Trickett.*] It is not proposed to fence in this line? No.

- H. 449. What other lines are unfenced? Only the Cobar line.
 McLachlan, 450. What has been the experience there; have there been any accidents with stock? I do not
 Esq. recollect any.
 16 Nov., 1893. 451. Had there been any I suppose they would have come to your knowledge? Yes.
 452. You do not know of any? I do not recollect any.
 453. *Mr. O'Sullivan.*] What would be the cost of working eleven additional miles of railway;—what would
 the traffic and locomotive expenses be? That I could not answer off-hand.
 454. I suppose it would be proportionate to the whole length of the line? I think so.
 455. The permanent-way expenses then, would come to about £650? I think it would be a fair thing to
 take a proportion.

John Harper, Esq., Goods Superintendent, Department of Railways, sworn, and examined:—

- J. Harper, 456. *Mr. McCourt.*] Have you visited this district lately? Yes.
 Esq. 457. You estimate the goods traffic at £9,900? I have not taken it out in that way. I estimate the
 16 Nov., 1893. total traffic at £12,000.
 458. How is your estimate made up? From the goods actually taken to and from Narrabri Station during
 the last twelve months.
 459. What was the nature of them? Wool, that is outwards from Narrabri, and inwards general
 goods.
 460. Most of it would be wool? All the outward tonnage from Narrabri would be wool, except about
 200 tons of sheep-skins and general merchandise.
 461. Have you taken into consideration the increase which the construction of the line would be likely to
 bring about? No; I have simply taken the bare figures as they stand in the books to-day.
 462. Do you think that the construction of the line will cause an increase in the traffic? I think that it
 naturally will.
 463. To what extent? You could scarcely gauge that.
 464. Do you know that country through which the line runs? I practically followed the route which it
 takes.
 465. Is there any settlement along the route, or are there only two or three stations? There is nothing
 that you can call settlement. The land is held in pastoral holdings, though there are a few selectors.
 466. How many pastoral holdings are there between Narrabri and Moree? I think about four.
 467. There are very few selectors? Very few selectors, that is along the route. I did not go away from
 the surveyed route.
 468. You do not know whether the best route has been surveyed? I simply dealt with the figures in the
 books at Narrabri Station, going through every clip of wool coming in there.
 469. What do you estimate the passenger traffic at? At 6,000 passengers a year.
 470. What would that be in money? £2,000, charging 1*d.* per mile.
 471. Have you anything to state with regard to the construction of the line? No; nothing beyond the
 estimates submitted by the Commissioners.
 472. Do you think it is a desirable line to make? I do.
 473. If it were constructed would it increase the traffic on the main line? I think it is necessary to
 construct it to preserve what we have.
 474. If it is not constructed will you be in any danger of losing traffic? I think so.
 475. *Mr. Trickett.*] Did you visit the district yourself to get these statistics? Yes.
 476. In what radius is the district comprised from which the traffic will be drawn? The traffic will come
 from Mungindi and places beyond it in Queensland. We already have that traffic.
 477. How far is Mungindi from the proposed railway? It is about 70 miles from Moree.
 478. You think the traffic from there would come to this line? It already comes to Narrabri.
 479. What station on the proposed line would it come to? To Moree.
 480. Have you considered the question of rival routes? No; it scarcely came within my province.
 481. Can you give the Committee any information about the line which follows the travelling-stock route?
 I think, on general grounds, that the straighter you make a railway to an objective point the better.
 482. Regardless of the country it goes through? I think so, especially in country of this character.
 483. Supposing a straight line would go through very few properties, while a slight deviation would enable
 you to go through very good country, would you make the deviation? Decidedly; but where there is
 good country beyond to be served, I should not burden it with added mileage.
 484. To what extent—would you make a limit of 5 or 10 miles? I should not increase the mileage
 further than was necessary, if I wanted to connect two points.
 485. What rates are proposed to be charged on this line? The ordinary rates. My estimate has been
 made up on an added mileage from Narrabri beyond Newcastle on the ordinary rates.
 486. Does it include the coaching traffic from Narrabri to Moree? From Narrabri to Moree, and the
 intermediate district.
 487. Is the travelling between the two places mostly done by coach? No; there is a great deal of buggy
 travelling.
 488. Did you take it into consideration? Decidedly. Our estimate was arrived at from experience of a
 somewhat similar district.
 489. You have taken into consideration the probable number of people who now drive their own vehicles?
 Yes.
 490. The trains on this line will travel at a slow rate of speed;—did you take that into consideration?
 That is a matter which has been dealt with by the Railway Commissioners, I believe.
 491. But so far as the convenience of the public is concerned? I think the line will serve them very
 well. There will be a 15-miles an hour service, and that, I think, would serve them very well.
 492. The railway will be a decided improvement upon the coaches? Yes.
 493. Would the goods traffic be constant, or only partial? At present it lasts during five months of the
 year. The stock traffic is a constant one.
 494. Which would be the largest item? Wool would produce the most. It would give us a revenue of
 about £3,000.

495. What would the other items produce? Roughly, the revenue from the cattle traffic would come to about £500; from sheep to about £2,800; from inwards goods, that is supplies, to £2,800; from mails, £800; from parcels, horse carriage, and dogs, £150; and from passengers, £2,000.

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496. You put down £3,300 for sheep and cattle traffic? Yes.

497. Is that a class of traffic that pays? It does under certain conditions.

498. Under what conditions would it pay on a line like this? Certainly, because we could get a good load.

499. You must have a big load for each train to make it pay? Yes. For instance, from Bourke we can haul 100 trucks at a time.

500. Does it pay there? Decidedly, when we can haul 100 trucks at a time.

501. And you fancy that on this line the stock traffic would be a payable one? Yes.

502. *Mr. Wall.*] You have some knowledge of the traffic on the Cobar line? Yes.

503. Is the bulk of that traffic very heavy? Not very heavy, unfortunately.

504. At what rate of speed do the trains travel—about 20 miles an hour? They are timed to travel about 20 miles an hour, I think.

505. Did you submit a report in regard to the amount of traffic that was likely to take place on the Inverell line, supposing it was constructed? Yes.

506. Would this line, if constructed, take any great portion of that traffic? Not very much of it, as I have made out my estimate. I had regard to the Inverell estimate in preparing this one.

507. Can you say from your knowledge of the place whether this traffic is likely to increase? I should think so.

508. Evidence has been given to the Committee which shows that if the leaseholds were thrown open the land would probably be taken up freely? I should imagine that that would happen; but the matter is out of my province.

509. If the leaseholds are not thrown open where do you expect an increase of traffic to come from? If railway communication is given to the district the people holding property there will probably be forced by circumstances to get better results from it. We find that that has occurred on the Jerilderie line.

510. You anticipate that the principal source of revenue will be the stock traffic, and you think that the people of the district would increase the number of their stock if the line were constructed? Yes. My estimate is based upon what we are actually dealing with now.

511. Would the sheep traffic be fat sheep or store sheep? Fat sheep.

512. *Mr. Dawson.*] Have you based your estimate upon the traffic carried during the last two or three years? Yes.

513. Have we not had favourable seasons during that time? Yes; I suppose they can be considered as generally fair seasons.

514. If there were droughts you would carry no stock at all? We hope that the country would stand a drought now much better than it has ever stood it before, so that I do not know that that would be so.

515. Are there any boiling-down establishments about Moree? There is one at Narrabri.

516. That would not affect the traffic, except that stock might be brought to it from Moree? Yes.

517. That traffic you cannot calculate? No; I have allowed nothing for it. I have simply based my estimate upon the existing traffic.

518. *Mr. Ewing.*] I think you told Mr. Wall that we need not take into consideration the possible extension of the railway from Glen Innes to Inverell? I have not considered it at all.

519. You do not think that it would compete with this line in any way? I should not like to give an opinion about that. I have only been asked to make an estimate of the probable traffic on the line.

520. But if a railway were made to Inverell, would it, in your opinion, draw off any of the traffic? It would not withdraw any of the traffic that I have credited to this line.

521. *Mr. Humphery.*] To what distance on either side of the line will the country be served by this railway? I think that in that country every mile of railway communication you can give as against road communication will be a consideration to the residents.

522. But can you say how many miles the traffic would come from? No, I cannot.

523. Have you taken into consideration the fact that the present traffic goes along a formed road to Narrabri? It goes via the stock route.

524. The Works Department have provided for four stations upon the line;—will it be necessary to open up approaches to these stations? No; you will notice that the travelling stock routes go through them. They are practically roads. In all cases the stations will be upon Crown land reserves.

525. Take Tycannah—is there an approach to that station from both sides of the line? Yes, a travelling stock road passes through it.

526. What about Gurley? It is the same.

527. And Woolabrar? The travelling stock route passes through Woolabrar and goes out towards Millie.

528. What about Edgeroi? There is practically a road running through that station. I have driven along it myself.

529. So that there would be no additional expense in connection with the roads of approach to the stations? That is so.

530. *Mr. O'Sullivan.*] If you were laying out this railway, for purely local purposes, would you prefer the proposed route to the Gurley Point route? What do you mean by local purposes?

531. If you were making a line for the local trade merely? If I were asked to provide for the Millie trade I should take the railway through Millie; but it would first be a matter for consideration what the Millie trade was worth.

532. Would Millie be better served by the proposed route than by the Gurleigh Point route? The Gurleigh Point route would probably mean 10 miles of additional haulage for them.

533. If the railway were purely for local trade you would take the western route? I should take the most direct route to the trade centre.

534. That would be one of the western routes—either the Gurleigh Point route or the travelling stock route? Yes.

535. But since this line is to go to Moree, and may possibly be extended still further, you would not study the local aspect so much as the national aspect, and in studying the national aspect you would recommend a direct route? Yes.

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536. You lay great stress upon the sheep traffic which will take place;—is it not a fact that nearly all the sheep on this country are what are known as store sheep? No; last year we trucked 632,000 fat sheep at Narrabri, of which 55 per cent. came from this district, and during the present year we have trucked nearly 1,000,000 fat sheep from here.
537. Do they come principally from the stations served by the proposed line? From all along the line of route, and right away from Queensland. Our biggest supply comes from Narrabri.
538. It would not pay to truck store sheep? They would not truck store sheep—we rarely carry them.
539. If the leaseholds were thrown open it is possible that a considerable amount of settlement may take place along the line;—I suppose you bore that in mind in making your recommendation? Yes.
540. Are the leaseholds there fit for settlement? I think that a lot of the country under the Nandewar Range, which will be served by this line, will develop into very good agricultural country. The conditions of rainfall are suitable for agriculture, and the soil is basaltic. It is different soil from that on the plains. I expect to see a good deal of settlement there.
541. Do those remarks apply to the land on the west side of the line? No; you get more out on to the plains there. I think agriculture will be developed upon the eastern side of the line.
542. Is it a fact that much of the Crown land which would be served by this line is very scrubby? There are occasional belts of timber. Eckford's forest is the biggest of the lot, though I do not know what its area is. That country, however, is not necessarily bad.
543. But the scrub would be a bar to settlement if it cost much to clear? The pine scrub country in the south and west has proved to be some of the best wheat country we have.
544. You hold the opinion that when the leaseholds are thrown open the line will go through settled country? I think so.
545. Have you travelled along the route of the line? I crossed and recrossed the line about half a dozen times I suppose. Leaving Narrabri I went through Edgeroi out to Gurley station. Mr. Firth was with me, and we were looking for ballast. Then we crossed the line again at Tycannah.
546. You kept within a reasonable distance of it all along? Yes.
547. So that you are able to form an opinion of the engineering difficulties to be encountered? Yes.
548. Is it not a fact that there are twelve dangerous creeks to cross? There are a lot of creeks, though I do not know that they are dangerous. There is a lot of flooded country.
549. Is there likely to be a catastrophe in connection with any of them, such as there was at Cootamundra? I do not think so. There will never be the heavy rush of waters that there was there.
550. What would be the effect upon the existing line to Narrabri if the line were taken *via* Gurlough Point to Moree? If I were a resident of Narrabri and that were done, I should feel very much aggrieved at being left out in the cold.
551. You think that the effect upon the town would be disastrous? Yes; they are now 3 miles away from the station, and if the line were taken *via* Gurlough Point, they would be cut off from it for all time.
552. If the line were taken *via* Wec Waa along the Gurlough Point route it would serve the country from which the present trade of the town of Narrabri is practically drawn? I do not know that it would have much effect upon it. Assuming that in twelve or eighteen months the Walgett trade goes to Bourke, I do not think it will. That trade is already beginning to go to Bourke, and it is only a matter of months, unless the railway is taken to Walgett, before it will find its way down the river.
553. Mr. Davies.] On your return from your visit to Moree did you furnish the Commissioners with a report? Yes.
554. Have you a copy of it with you? Yes.
555. Would you mind reading it? I should prefer not to read it. I take it that the Commissioners are the officers responsible to this Committee, and whilst there is nothing in the report that the Committee might not see I would rather not read it. There is a certain element about it that I think the Chairman will understand which makes it undesirable that I should read it.
556. Were you sent by the Railway Commissioners to Narrabri and Moree for the purpose of reporting to this Committee? For the purpose of estimating the traffic.
557. With a view to furnishing information to the Committee as well as to the Commissioners? Yes.
558. The information which you have acquired appears in your report? Yes.
559. You have already furnished the Commissioners with a copy of the report? Yes.
560. Then what objection can you possibly have to furnishing it to the Committee? I am here to give evidence upon the report, and to answer any questions put to me by the Committee. Of course it is not for me to discuss the matter with you, but I am ready to give any evidence which is asked for.
561. Can you give us the purport of the report? I think that that has already been given in the recommendation of the Commissioners.
562. The principal commodity carried on the line will be wool and live stock? Yes.
563. Is there a very large settled population in Moree? One thousand one hundred or one thousand two hundred, I should think.
564. Is it a growing or progressive place? Very progressive. At no place where I have been lately is there so much work going on.
565. You strongly recommend the construction of this line in preference to any of the others which have been surveyed? Yes.
566. Have you at any time examined any of the previous surveys? No; though practically, I have been over both routes. I have returned by way of the travelling stock route.
567. You see the blue line; it runs very close to the proposed line? Yes; I think they are about 8 miles apart.
568. Do you think the red line is preferable to the blue line? That is rather an engineering question, but I believe there were engineering difficulties in the way of getting an absolutely straight line.
569. You have not been over the blue line? No.
570. The only line you have been over is the red line? And the green line.
571. What is the character of the country through which the green line passes? Open plains, and belts of timber.
572. Mr. Neild.] I think you informed the Committee that an officer of the Department and yourself had been searching for ballast? Yes.
573. Did you find a good supply of ballast? Yes; at a place named Bald Hill, just this side of Waterloo Creek.

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574. Was it gravel? No, basalt. There is gravel in the river at Narrabri, and also at Moree.
575. There is no timber along the route? None that would be of value for railway purposes.
576. How far would they have to go for sleepers? I think the Commissioners are getting their sleepers now within 15 or 20 miles of Narrabri, and there is supposed to be timber out on the Nandewar Ranges at the back of Gurley.
577. I understand that you have based your estimates upon the ordinary rates? Upon an extension of the through rates.
578. That is without any reference to the differential rates? Yes.
579. Do the differential rates apply to the existing Narrabri line? No; ordinary rates are charged there.
580. How far does the differential rate system extend? The differential rates practically commence at Glen Innes on the Northern line.
581. Has there been any large development of the traffic to Narrabri within the last two or three years? An extraordinary development.
582. The Narrabri line is one of those which pay fairly well? Yes. There has been an extraordinary development of the sheep and cattle traffic since the Hawkesbury bridge was made.
583. Have you any examples of a similar development in other parts of the country? No; I think it is the most extraordinary development we have had. No doubt the opening up of direct communication with Sydney has largely contributed to it.
584. The extension of the line to Moree will increase that development? I think so, or at any rate it will maintain the trade we have.
585. You strongly advocate the construction of the line which has been submitted to the Committee? Yes.
586. *Mr. Hoskins.*] How far is it from Moree to Mungindi? Seventy miles.
587. And from Mungindi to Inverell? I could scarcely tell you.
588. Is it more than 70 miles? Yes; twice that.
589. Mungindi is on the main travelling road, to the extreme north-western part of the Colony? Yes.
590. Would this railway not provide accommodation for a great deal of the country between Moree and Inverell? Yes; the Warialda district would be affected by it, and some traffic would come from the Bingera District.
591. The probability is that the railway would take all the traffic from the Warialda and Bingera districts? I do not think it would take all.
592. A good deal of it? Some of it probably.
593. What do you mean by portions of those districts? Where the road carriage to Moree was cheaper than the carriage to Glen Innes or Inverell the traffic would come to Moree.
594. As a matter of fact, would not the people who are settled in the extreme north-western part of the Colony be better served by a railway to Moree than by a railway to Inverell? Yes; because a railway to Moree would be more direct.
595. *Mr. Collins.*] What sort of country does the line go through generally? Splendid country; improving to the east as you get under the mountains.
596. Do you know of your own knowledge that the five stations which it traverses are the best stations in that part of the district? I should judge so from their clip, and from the annual rental which they pay on their leasehold property.
597. Can you tell us what rent they pay? I could not tell you what they are paying now. My information only goes up to about two years ago.
598. Do you know that on the eastern side of the line there is a lot of country which is fit for agricultural purposes? That is my impression.
599. You are not aware, of your own knowledge, that wheat is grown underneath the Nandewar Range? No; I am not.
600. If the line were opened, and wheat were grown in the district, there would be an increase of traffic? Yes.
601. How far would Millie be from Woolabrar Station? If you scale it off on the map it is only about 12 or 14 miles.
602. You think that that station would serve most of the properties to the west of the line? Yes.
603. Gurley would serve those to the north-west? Yes, and places like Terry-Hie-Hie.
604. There are a lot of places to the east of the line out towards Bingera which would come into Gurley and Tycannah? Yes.
605. Have you been to Bingera? No.
606. You do not know of your own knowledge that there is a large agricultural and mining population there? I do not know it of my own knowledge.
607. Seeing that Bingera is about 40 miles from the proposed line, do you not think that the traffic from there would come to the railway? I think a certain proportion of it would, except where the range intervenes to prevent it.
608. Since some of the traffic now goes to Narrabri, 80 miles distant, is it not likely that it would come to the proposed line? Yes, it is fair to assume that it would; but a lot of it goes to Tamworth, and would continue to go to Tamworth.
609. In your opinion will there be a large increase of population, both pastoral and agricultural, when the leasehold areas are thrown open? Yes.
610. *Chairman.*] Presuming that this line was constructed, and that the line from Glen Innes to Inverell was also constructed, where would you fix the dividing line between the traffic for the two places? At Warialda and Bingera.
611. And running up north you would include Bengalla? I should expect the traffic from the whole of the district north of Moree to come to Moree, because the mileage would be less.
612. You would expect the traffic to come to Moree, even if the railway were constructed to Inverell? Other circumstances being equal I think the shortest route would be adopted.
613. If the Inverell people anticipate getting the Bingera traffic they are likely to be wrong? I do not think that they anticipate getting it. At all events, when I estimated the probable traffic upon that line I did not take it into account.
614. Where does the Warialda traffic go to now? Some of it comes to Narrabri, and some to Tamworth, while a little of it goes to Glen Innes. The bulk of it comes to Narrabri.

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615. Supposing the Glen Innes-Inverell line was not constructed, and the line which we have now under consideration was constructed, how much further eastward would you put the line of demarcation between the Glen Innes and Moree traffic? I should not go very much beyond Warialda. They have a considerably shorter route to Tamworth, and comparatively good country to travel over. Anything to the south of Warialda would go to Tamworth, and anything to the east would go to Glen Innes.
616. So that if the Glen Innes line were made it would not affect the line of demarcation? I think not.
617. Have you visited Wee Waa? No.
618. Is this the first time that you have visited Moree? No; but I never visited it before with the distinct object of estimating the trade.
619. Does any traffic come now from Pilliga? Yes.
620. The whole of it? Not all of it. I understand some goes by river to Walgett, and thence to Bourke.
621. Is the trade from Pilliga gradually being diverted down the river? I think it has been affected during the last year or two.
622. Is that state of things likely to continue? Yes; if my information is correct, there will be a big diversion of trade in the future.
623. But if the traffic goes to Bourke you get a longer mileage? Yes.
624. And so you are not very anxious that the Pilliga traffic should come to Narrabri? No.
625. Is it only when the river is navigable that the Pilliga traffic goes to Bourke? Yes.
626. Do you think it is worth while, with a view to getting more of the trade to the west of Wee Waa, to adopt the Gurleigh Point route? I do not. I think the best way of getting to Walgett with the railway would be to go from Dubbo or some western station.
627. How does the Wee Waa traffic compare with the traffic of places further on, such as Edgeroi? The greater part of the traffic comes from the north-west. Out of 66,000 bales of wool last year, I think 40,000 came from that district.
628. If the proposed route is adopted you will not lose any of the traffic that now comes from the direction of Wee Waa and Pilliga? No. If the other route, however, were adopted, the town of Wee Waa would probably cease to exist and another town would spring up further to the east.
629. But you would still have the traffic from Wee Waa to Narrabri West? Yes.
630. You do not think, however, that the people to the north should be put to the disadvantage of an additional 10 miles of haulage? No.
631. Did you visit Millie? I passed within sight of Millie; but as I got better accommodation further on I did not stay there.
632. If the proposed line is constructed it will pass within 10 or 12 miles of Millie? Yes.
633. Do you think that that is sufficiently close? It would save the people there 28 miles of road carriage I daresay.
634. You do not think it desirable to divert the line nearer Millie in order to get more traffic from the west? I do not.
635. Is the country over which the proposed line runs more out of the reach of flood than the travelling stock route? That was the general statement of the people there. Mr. Firth was making inquiries on the subject, and, although I was not studying the engineering question, I kept my ears open, and I found that the general impression was that as you went west the water-courses opened out.
636. You spoke of the possibility of agricultural settlement on the Nundawar Ranges to the east of the proposed line? Do you think that the possibility of the development of traffic from that place would warrant us in taking the line more to the east? If you went more to the east you would not get such a direct line to Moree.
637. You think it is better to aim at the trade of the district of which Moree is the centre, than to aim at any possible trade to the east or west, and consequently you advocate the more direct route? That is so.
638. You see the land office plan? Yes.
639. Have you paid any attention to the area likely to be benefited by the railway, and which should come under the operation of the betterment principle? No; that matter is outside my province.
640. If the Public Works Department had taken Moree as the centre, and estimated that the influence of the railway will be felt to a distance of 60 miles, do you think that that is too far? I do not know. I would rather not express an opinion about the matter. It is very hard to say how far the effect of the railway would be felt. Of course even a mile makes a difference if you can carry over it for 2d. what otherwise it would cost 1s. to carry.
641. If you were a land owner residing 60 miles to the west of Moree, and this railway were made, would you consider it fair to include your property in the betterment area? If I were a land-owner I should be prepared to pay higher rates of road-carriage to show that my property had not been improved by the construction of the line.
642. Do you think that the area to which I have referred will be influenced by the railway? I think so.
643. If the proposed route is adopted will the station at Narrabri West be done away with? No; that is not the intention of the Commissioners.
644. You would keep that station for goods traffic? Yes.
645. Presuming that you were making a line from Werris Creek to Moree *via* Narrabri you would not think of putting a goods station at West Narrabri, and a passenger station at Narrabri? No.
646. It is only because you have the buildings there that you propose to utilise them? Yes.
647. Does that mean that two staffs will have to be kept up—one to deal with goods traffic and the other to deal with passenger traffic? I think that we may be able to distribute the work so that the staff at one station will do the work for two.
648. Will they go about on tricycles? Not necessarily.
649. The more you can concentrate a staff the more economical it is? That holds good as a general principle.
650. Is it because you are afraid that there might be a local agitation there that you intend to keep the station at West Narrabri? No; it is because a lot of public money has been spent there which we think ought not to be wasted.
651. That would counter-balance any extra cost in providing for an additional staff;—no local influence has been brought to bear to keep the station open? I have not heard of any—none has been brought to bear upon me. I have not heard a voice from the people of West Narrabri upon the subject.

652. You know where it is proposed to put the passenger station at Narrabri? Yes.
653. Do you think that the position is a good one? I do not think the Commissioners have expressed an opinion on the subject. I think they would rather see a permanent survey made first. The position shown on the plan is only approximate.
654. Do I understand that you rather doubt the advantage of the position? I think that further inquiry might show that there is a better site.
655. *Mr. Neild.*] What settlement is there between Moree and Narrabri along the proposed route;—is there any? No; the land is practically all comprised in large pastoral holdings.
656. It consists of two or three large estates? There are four or five altogether.
657. Would the same remark apply to the land more to the west? I do not know. I could not speak about the holdings there.
658. Have you seen Mr. Jones' report upon this subject? Yes.
659. He states that the Gurlcigh Point line would serve Wee Waa, Pilliga, Millie, Moree, Palnellawa, Yetman, Boggabilla, and a number of other places. Would the same number of towns be served by the proposed line? Yes; if you except Wee Waa and Pilliga, which are down the Namoi, they would probably be wiped out. All the other places are to the north, and either line would serve the whole of them.
660. You do not think anything would be gained by deviating from the direct route? I do not think that any of the other places in the district are of sufficient importance to warrant a deviation.
661. The proposed line goes through a saw-mill at Narrabri;—is that an establishment of any importance? It is not a very big one. Mr. Firth and I looked over that part of the line. Only a trial survey has been made, and I believe that it can be improved, and that they will be able to get over the river without going through the saw-mill.
662. *Mr. Suttor.*] What was the profit upon the Narrabri line at the end of June, 1892? The comparison is made with the year 1887. In 1887 the loss upon the working was £14,946, and in 1891 there was a profit of £907; in 1892 there was a profit of £9,432; and in 1893 there was a profit of £14,000.

J. Harper,
Esq.
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Carrick Paul, Esq., surveyor, Railway Construction Branch, Department of Public Works, sworn,
and examined:—

663. *Chairman.*] How long have you been engaged in the department? Three and a half years.
664. Where did you obtain your experience? In New Zealand and in England.
665. Principally in connection with railways? Yes; I have had about fifteen years' experience.
666. Do you hold any certificate or diplomas? Yes; I am a member of the Surveyors' Institute, and a licensed surveyor.
667. Of England? No; of this country.
668. You served your articles in England? Yes; with the Great Eastern Railway Company.
669. What railway work did you do there? I was engaged in construction work between Banbury and Cheltenham. I was engaged on half-a-dozen different surveys there.
670. Were you engaged on railway construction work in New Zealand? Yes; on the Te Arawa and Morneville line, and on one or two light lines in Otago.
671. What lines have you been engaged on in New South Wales? On the Molong to Parkes line, the Kiama to Nowra line, the Nowra to Jervis Bay line, the Wolumla to Cathcart line, and the Narrabri to Moree line.
672. You have a fair knowledge of the country traversed by the lines to which you refer? Yes.
673. How long were you engaged upon the line from Narrabri to Moree? About seven months.
674. Are you conversant with the whole of the line? Yes.
675. Which end did you start from? I commenced at the Moree end, and worked towards Narrabri. But before doing that I went over the route two or three times from end to end.
676. What is the character of the country between Moree and Tycannah? Flat black soil country.
677. Is it suitable for the construction of a cheap line of railway such as that proposed? Yes.
678. As far as Tycannah there is not much difference in the routes? Yes.
679. Have you surveyed the various routes from Tycannah to Narrabri? No; I did not survey the travelling stock route, but I have been over it three or four times.
680. Taking the proposed line first what is the general character of the country between Tycannah and Narrabri? The greater portion of it is open country; but we go through the Eckford Forest reserve for 7 or 8 miles.
681. The country is comparatively level? Yes.
682. And easy for railway construction? Yes.
683. What would be the steepest grades on the line? I think 1 in 75, and 1 in 100 on the up line. There is only a very short stretch of the 1 in 75 grade.
684. How long is it? Only about 11 chains, I think.
685. Is there only one such grade? Yes; the grades are very flat, taking them all through.
686. They are principally 1 in 100? Rather 1 in 500, or 1 in 1,000.
687. Do the brown markings on the map represent spurs? No; they show the boundaries of the black soil country.
688. Will you name the most difficult creeks that have to be crossed, starting from Moree? I do not consider that there are any difficult creeks until you come to the two rivers at Narrabri.
689. Except close to Narrabri the creeks will not be troublesome? No.
690. They can be spanned by wooden bridges, I suppose? Yes; but that is a matter for the Engineer-in-Chief to decide.
691. Do you know if it has been taken into consideration? I believe so.
692. The bridges are to be wooden ones? I believe so.
693. Will they entail the expenditure of large sums of money? No.
694. Can you tell us what each of them would cost? No.
695. What creeks and rivers have you to cross close to Narrabri? The Namoi River and the Narrabri Creek.
696. What do you think will be the cost of constructing suitable bridges over those water-courses? I cannot tell you. You must get that information from Mr. Deane.
697. You have not gone into figures? No.

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698. You would not like to say whether the work could be done for £5,000? No; I should not.
699. You wish to confine your evidence chiefly to the character of the country and the practicability of making a railway through it? To the country and to the survey.
700. Can you say what the line will cost? We know the cost.
701. What will it be per mile? I know that it will cost considerably less than £3,000 a mile. I have seen the estimate, because it was got out in the office.
702. You did not work it out? No.
703. This is what is called a pioneer line;—have you had any experience in constructing lines of this character? Yes; in New Zealand. They have light railways there.
704. Is the country to be traversed suitable for the construction of a light line? Yes; in my opinion it is.
705. What quantity of ballast will be required upon the line? I would rather not give an opinion upon that subject.
706. Still, since you have had experience in connection with lines of this character, the Committee would be glad to know if you consider that a thin layer of ballast would do? My chief will give all that information.
707. *Mr. Ewing.*] You are not the engineer for this line—you have only done the surveying work in connection with it;—is not that your position? Yes.
708. *Mr. Trickett.*] How does the country traversed by the proposed route compare with the country traversed by the travelling stock route? It is similar, as far as the soil is concerned, but the country to the east is higher and the natural drainage is better. Along the travelling stock route there are great basins, which for a week or two after rain has fallen are practically small lakes.
709. Then the travelling stock route is more likely to be flooded than the proposed route? That is the conclusion I have formed.
710. With regard to the country served how do the two routes compare? I think that one would be as good as the other.
711. Is there more settlement upon the travelling stock route than upon the proposed route? Yes.
712. There are more settlers living there? Yes; but there is not much settlement on either route.
713. Is not the country held by two or three people along the proposed route? Yes; though a considerable amount of it has not yet been alienated.
714. If you object to state your opinion on the character of the line which it is proposed to make what other evidence have you to give us? The evidence I can give to the Committee is simply with regard to the location of the line and its position for construction. I think that the direct route is to be preferred to the travelling stock route, because the natural drainage is better, the mileage is less, and ballast and timber are nearer at hand.
715. Did the question of ballast form part of your inquiry? Yes.
716. Was Mr. Firth with you when you made the investigation? No; I was by myself. As you go further west you come to a vast plain; but as you get up towards the ranges the country rises a little, and the drainage is better.
717. Is the country along the travelling stock route so bad that it is likely that a line there would be injured by water? I think so, unless you resorted to a considerable amount of banking.
718. Would a line, as light in character as that proposed, answer satisfactorily if the travelling stock route were adopted? I think not. At any rate it would not be so satisfactory.
719. You think a more expensive line would have to be constructed along the travelling stock route than along the proposed route? I do.
720. What about going more to the east;—have you any suggestions to throw out concerning that? Nothing would be gained by going further to the east. The proposed route is practically a direct one, though slight deviations have been made to avoid going through private property, and to suit the grades and curves.
721. *Mr. Ewing.*] You say that there are 15 chains of the 1 in 75 grade? I think there are 11.
722. Why cannot you cut it out? No doubt that may be done when we make the working section.
723. If the rest of the line has a grade of 1 in 100 it is a pity to allow that grade to remain? Yes; it might be taken out by doing a bit of cutting.
724. It is about 10 miles from the travelling stock reserve to the proposed route? Yes.
725. The water runs from the proposed route to the travelling stock reserve? Yes.
726. Therefore the travelling stock route must be a good deal lower? It is lower.
727. *Mr. Neild.*] Have you had any experience in constructing railways upon loose black soil such as this? No; not upon soil exactly the same as this, though I have constructed railways over low-lying swampy country in New Zealand.
728. Narrow-gauge lines? Three feet six inches.
729. When you spoke just now of having had experience of light lines in New Zealand did you refer to narrow-gauge lines? Yes.
730. What weight of rails was used there? Forty and 50 lb.
731. Do you know the weight of rail intended for this line? No; I do not.
732. What depth of ballast was used upon those rails? Only about 12 inches.
733. But here it is proposed to use only 3 inches with 70-lb. rails? I have not dealt practically with any of this black soil country.
734. Who can give us any information with regard to the question of ballast? I think the Engineer-in-Chief is the best authority.
735. But Mr. Deane has not been over the line? No, but Mr. Firth has.
736. Where is he now? In Sydney. He is the Inspecting Engineer.
737. What is the difference between the country on which you used 40-lb. rails and 12 inches of ballast, and this country? The New Zealand country is swampy—this is not.
738. But I suppose earthworks were thrown up there? To some extent, but we really got over the difficulty by making drains on each side of the line, and carrying the water away.
739. Had not those drains the effect of creating an embankment? Yes.
740. But you required 12 inches of ballast to give a bed for the rails? That was the opinion of the Chief at the time.
741. Do you know what the life of that line would be? No; but I believe it is still in existence.
742. Do you know if it has cost much for repairs? No.
743. You do not know if it has been found necessary to take it up, and reballast it? No; but I believe it has stood well.

744. What was the nature of the soil after it was drained;—was it sandy? It was peaty soil.
 745. Somewhat similar to this? It was, and it was not. This is hardly a peaty soil.
 746. It is more greasy? Yes.
 747. It is a soil that rapidly absorbs heavy weights? Yes.
 748. I understand that you do not like to express an opinion as to whether the proposed depth of ballast would be sufficient? No.
 749. You would rather not answer that question? I believe it would be sufficient.
 750. Is the proposed route liable to floods? Portions of it, where the natural fall of the ground is so slight that when there is a heavy fall of rain the water cannot run away quickly enough; but it is only a matter of raising the line a few inches to clear it.
 751. Would not that state of things be increased by the construction of an embankment? We should cut waterways through the embankment.
 752. Would they have to be very frequent? They are shown on the plan. They will not be very frequent.
 753. The tendency of an embankment, however slight, would be to keep back the water rather than to allow it to escape? Yes.
 754. The black soil rapidly absorbs water? Yes.
 755. If water were lying alongside the embankment would it not undermine it to a certain extent? Yes; but a drain will be cut on the east side of the line, which will carry the water to the nearest opening.
 756. You do not anticipate that it will obtain any lodgment? Not because of the embankment.
 757. Have you seen any stone along the line which would be suitable for ballast? Yes; there is gravel wash on one part of the line, and within a few miles of the line we shall be able to get good stone.
 758. Three inches of gravel wash would not do for ballasting? They would have bigger stone at the bottom.
 759. Is there any timber there? Not within 15 miles of the line.
 760. It would have to be drawn by drays over the black soil? Yes.
 761. It could not be approached by rail? It would be a question whether it would pay the contractor to do that.
 762. You do not think there would be sufficient demand for it? I do not think so with only one contract.
 763. *Mr. Collins.*] Why was the blue line abandoned between Boggy Creek and Tycannah, since it is the straighter of the two? The main reason was to go through the reserves. The blue line cuts slightly into freehold property in an awkward fashion, while the red line will skirt that property.
 764. If 3 inches of ballast is sufficient for the proposed line how much would be required for the travelling stock route? I think it is not so much in the ballast as in the draining.
 765. Do you think the travelling stock route would cost more? I think so.
 766. The country traversed by the proposed line is as good as that traversed by the travelling stock route? It is similar to it.
 767. Do you think that if the leaseholds in the Central Division are thrown open a large population will settle in this district, and give traffic to the railway? Of course mine is an outside opinion; but I think that that is probable. Whatever land was available would be taken up.
 768. Have you seen any country to the east of the line which is fit for agriculture? Yes.
 769. It is not opened up yet? No; it is all occupied for sheep runs.
 770. You think it is good agricultural country, and fit for wheat growing? Yes.
 771. *Mr. O'Sullivan.*] How far is the proposed line from the Nundewar Mountains? I think 15 or 20 miles, on the average.
 772. Is there much danger of the creeks flooding? No. The floods there are caused wholly by the immediate rainfall, and two or three days after the rain has ceased the water evaporates. We do not get immense bodies of water rushing down from the mountains, because we are too close.
 773. Where would there be the greater danger from floods;—upon the proposed route, or upon the travelling stock route? Upon the travelling stock route, because there are great basins there in which the water would lie.
 774. The water lies longer there than it does near the proposed route? Yes.
 775. Is there any danger of washaways because of the creeks coming down from the mountains? No; I think not.
 776. Ample provision will be made to prevent them? Yes.
 777. *Mr. Ewing.*] Where is the 1 in 75 grade? It is near the Eckford Forest—about the 287 mile-peg. That is where we go through the gravel-wash.
 778. Is it near Waterloo Creek? Between Waterloo Creek and Myall Hollow.

TUESDAY, 5 DECEMBER, 1893.

Present:—

JACOB GARRARD, Esq. (CHAIRMAN).

The Hon. WILLIAM HENRY SUTTOR.	WILLIAM CHANDOS WALL, Esq.
The Hon. JAMES HOSKINS.	WILLIAM McCOURT, Esq.
The Hon. FREDERICK THOMAS HUMPHERY.	JOHN CASH NEILD, Esq.
The Hon. JOHN DAVIES, C.M.G.	EDWARD WILLIAM O'SULLIVAN, Esq.
The Hon. WILLIAM JOSEPH TRICKETT.	CHARLES COLLINS, Esq.
HENRY DAWSON, Esq.	

The Committee further considered the proposed Railway from Narrabri to Moree.

Robert Richards, Esq., grazier, sworn, and examined:—

779. *Chairman.*] What are you? Grazier, meat exporter, and carcass butcher.
 780. You have a place of business at Riverstone? Yes.
 781. *Mr. O'Sullivan.*] You are in the habit of obtaining much of your stock from the Narrabri-Moree district, are you not? Yes.

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R. Richards,
Esq.
782. 5 Dec., 1893.

- R. Richards, Esq.
5 Dec., 1893.
782. You have a leasehold estate there? We have two stations—one at Moree, on which a portion of the town is situated, and one on the Namoi, about 20 miles above Walgett.
783. What is the name of the station at Moree? Tyreel.
784. And that near Walgett? Yarraldool.
785. So that you know the district well? Yes; I have lived there twenty years.
786. In your opinion, which would be the better route for a railway from Narrabri to Moree—that known as the direct route, or the Gurleigh Point route? I should favour the Gurleigh Point route, because it would enable the people settled in the best part of the country to truck their stock to Sydney more conveniently than they can do it at the present time. Stock coming from the lower Namoi and Pine Creek would truck near Wee Waa, or a few miles from there, towards Millie, out on what they call Gunnedah Creek. In flood time my drivers invariably select that route. They are sometimes blocked near Wee Waa by the Gunnedah Creek, but they can invariably get to a point on the other side of the creek. All the stock fattened on the Upper Narran, and the whole of that district where the water spreads after it leaves the Balooone, comes into Collarendabri, along the Thalaba Creek, and by way of Millie.
787. By which route does the stock that you use at Riverstone come? Invariably through Wee Waa, and up the Thalaba.
788. Is it not a fact that at times they have to come by what is called the Millie route? That is up the Thalaba. Nine-tenths of the stock *via* Collarendabri come in there. This year, between January 3rd and December 4th, I sent 1,135 trucks of sheep from Narrabri and Boggabri. About 10,000 of them were bought just beyond Moree, at a place called Midkin, but all the rest, if the line had been constructed that way, would have been trucked below Wee Waa or Millie. The country round about Moree, and down below Midkin towards Mungindi is very good; but, as a fat stock buyer, my business does not take me beyond there. It invariably takes me to where the waters break out from the Balooone into the Narran, Birrie, Culgoa, and Bokhara. That is a good fattening district, from which the direct route is to Collarendabri. I have also a station just over the border in Queensland, at what I call the top of the good country, just where the waters break out at the junction of the river. I could come into Mungindi from there, and then on to Moree; but there is no road, and I should have to get permission to travel through the Australian Pastoral Company's land. At present I come down to Mogil Mogil, and then on to Collarendabri, and through Millie.
789. If the proposed line were constructed, would your stock go to Narrabri, or through Thalaba to Millie? They would go to Narrabri. It does not pay you to go out of your way to get to the railway, when you can save 40 or 50 miles of rail carriage by travelling ahead for two or three days more.
790. What part of the country is best settled by graziers—the western part towards Collarendabri, or the country to the north of Moree? My knowledge of the country north of Moree is very limited, because there is not sufficient fat stock there to take me that way. My business takes me where the fat stock are. I have, however, a very good knowledge of the country around Moree. It may be splendid agricultural country or fair grazing land, but there is nothing like the quantity of fat stock available there. The principal fat stock comes from round about Moree and round the Lower Mehi, and the road leads into Millie from there. If I were thinking of my own personal interests I would say, "Give me as short a line as you can get from Narrabri to Moree."
791. Which would best suit the district out about Collarendabri—the Gurleigh Point route, or a branch line from Narrabri? A direct line from Narrabri would, in my opinion, serve the best interests of this Colony in any case, independently of Moree. I have no station at Collarendabri, and I have a station at Moree, but I should say that the best line would be to Collarendabri.
792. Would a line to Collarendabri be of any use to the people on the Wee Waa side? I take it that it would go near Wee Waa.
793. Would it not go further north? I do not think it would. The line I should favour would go near Wee Waa; but as I am not an engineer, I cannot tell you what it would cost to bridge the river. I have travelled the country in pretty near all weathers, and I have been there during two or three of the biggest floods. I was down there in the 1887 flood, when I thought it would be impossible to get anywhere, but with the assistance of a guide I managed to get along by way of Wee Waa. They took me to a place that Pat Quinn had once.
794. If the line went in the direction of Collarendabri, you say it would best suit the graziers in that part of New South Wales? I think so.
795. At the same time you would not object to the line going from Narrabri to Moree? Not a bit. To my knowledge there is no better land than that around Moree, and Moree itself is pretty closely populated. My idea is that if you take the line to Moree you should run it out near Millie, because in doing so you will make part of the line which will some day have to be taken to Collarendabri and out towards the Narran, Culgoa, Birrie, and Bokhara districts. If it can be shown that it is worth while to construct a railway in order to carry stock, that is the best route I know of.
796. Your stock *via* Collarendabri comes by way of Millie in preference to coming by way of Wee Waa? Yes.
797. Why is that? Because it is the direct route. The stock that go through Wee Waa have been bought on a place called Pine Creek, where the Barwon junctions with it, and on the Lower Namoi. It is all good fattening country from Moree to Walgett.
798. *Chairman.*] The country you describe lies south of a direct line from Moree to Collarendabri? Yes; and extends from Moree right through to Walgett.
799. Your stock comes by two routes, namely, through Millie and through Wee Waa;—on being asked why they come through Wee Waa, you say that stock coming from districts lying south of a line from Narrabri to Collarendabri would come through Wee Waa, whilst stock from districts north of that line would come through Millie? Yes; the Collarendabri stock invariably come through Millie.
800. If the railway were constructed out towards Collarendabri, do you think it would draw the trade from the Australian Pastoral Company's stations in Queensland? Two-thirds of it would certainly be taken by a line to Collarendabri. The southern portion of that land is very much the better. My station adjoins the Australian Pastoral Company's land, and lies to the north of it, at the junction of the Balooone.
801. *Mr. Davies.*] You sometimes send your stock direct to Homebush from the Narrabri district? Very seldom. I send them for slaughter to Riverstone.

802. Do you send them by road? Cattle from the Hunter district invariably come by road, but not stock from out west. R. Richards,
Esq.
803. Does any of the stock from the Narrabri district come by road to your slaughter-yards? Yes, sometimes in the spring months. This season we sent two draughts. 5 Dec., 1893.
804. What number of stock would come by road? Draughts of about 200 cattle.
805. What is the greatest number that you have sent by road? This spring only 400 have come by road, but I daresay that last year we sent 1,000. I have not the least doubt that we have sent 1,000 during the last twelve months by road.
806. The Sectional Committee were informed by the drovers in the district that you send a large proportion of your stock by road? In the spring we send the cattle by road.
807. Do you send sheep by road? No; I sent one lot last year as an experiment, but I have not continued the practice.
808. What number of fat cattle did you truck? I sent 140 trucks from Narrabri between the 28th February and the 22nd November.
809. Where did the stock come from? Some of it from the Balooone, north of the Australian Pastoral Company's land, and the balance from down the Namoi and about Pine Creek. A portion came from the district lying south of the line drawn from Narrabri to Collarendabri, and the remainder from beyond Mungindi, in the direction of St. George. There is a 15-mile stretch of country there without any water upon it, which the drovers avoid. They follow the Narran to a point opposite Mogil Mogil, thence to Collarendabri.
810. Do you frequently receive large numbers of fat stock from Queensland? No; except what comes into Bourke. I get some from my own place, but they invariably come in through Collarendabri.
811. Have you travelled to Moree along the stock route? Yes.
812. And to Millie? To Millie more often than to Moree.
813. Can you tell the Committee what, in your opinion, is the character of the country traversed by the proposed route and by the travelling stock route? With the exception of the belar scrub on the proposed route it is all very good plain country.
814. You regard it all as good fattening country? Yes.
815. Do you think it would be wise for the Construction Department to adopt the travelling stock route, which is some miles longer than the direct route, in making a line from Narrabri to Moree? Considering that the country to the west is so valuable, and would prove such a feeder to the line, I should say that it would be better to go by the travelling stock route.
816. Supposing that the cost of that line would be £500 a mile more, without taking into consideration the additional mileage? You will pick up very little stock between Narrabri and Moree by the proposed route. I know that in my own case nine-tenths of the stock trucked will still go to Narrabri.
817. In order to save the expense of train carriage, you would not mind being three or four days more on the road? I should not go out of my way to get to the line.
818. But supposing you had all the trucking appliances at a station nearer than Narrabri, would you not go there? A 12-miles journey would take me to the line, but there would be the freight into Narrabri.
819. Do you consider that it would be cheaper to take your fat stock by road to Narrabri than to truck them at some place like Woolabrar;—what do you think is a reasonable distance to expect stock to come to the railway? With stock you come to the nearest point that you can strike; but a good deal depends upon the season.
820. Would stock owners consider 15 or 20 miles a reasonable distance to travel with stock? People would be very lucky to be within 50 miles of the line.
821. Do you think that a railway would be of service to the settlers living within 15 miles of it? Yes.
822. Would you send your stock and produce to the nearest station within 50 miles? Yes; but I would not go 15 miles out of my way to get to the line. If the country were anything like suitable I would prefer to continue on 40 miles by road than to go 15 miles out of my way to strike the line and have to pay for that length of train carriage.
823. What would it cost to carry sheep or cattle 40 miles by train? The cost of train carriage is about 300 per cent. more than the cost of driving. If it would cost £5 to drive a lot of sheep from Millie to Narrabri it would cost £20 to take them by train, though, of course, if they were taken by train there would be a saving of condition, which would have to be taken into consideration.
824. If the railway were constructed to Moree you would use your own discretion and avail yourself of it, or continue to drive your stock—whichever you thought best? Yes; I would certainly not go 15 miles from Millie to the railway if the country was in good condition; I would go on to Narrabri. At the present time I sometimes travel stock which I have bought at Coonamble into Mudgee, although I could reach Dubbo more quickly, because the Mudgee route is better, and I save 4d. per head in train carriage.
825. Do you send wool away from your stations? We nearly always make the sheep carry it. Any wool we have we send to Narrabri.
826. How much have you sent down during the present season? We shorn about 35,000 sheep, and all that wool went to Narrabri.
827. Where did it come from? Yarraldool, 35 miles from Walgett.
828. By what route did it come? Across to Wee Waa.
829. Through Wee Waa? Yes. It goes along the northern side of the river as far as Gunnedah Creek, and crosses over the bridge at Wee Waa.
830. Does the stock from the Walgett district come by the same route? Yes.
831. It comes through Wee Waa? Yes. I take it that if the line is constructed along the Gurlleigh Point route it will pick up the whole of the stock coming from down the river.
832. That would mean 15 miles additional length;—do you think the country would be justified in spending so large a sum of money as would be necessary in order to construct that line? I think so, because it would serve a large producing district. Moree does not produce anything; it is the country round about Moree. I look upon these country towns as a sort of parasite;—you can make a country town anywhere.
833. But you told the Committee that the Moree country was very rich? Yes; and so is the Millie district. I am not here to run down the Moree district, because there is no richer district than it is. The Thalaba district is very good, but if I have any preference it is in favour of the Moree district. I look upon the Moree district as as good as any patch out there.
- 834.

- R. Richards, Esq.
5 Dec., 1893.
834. As good as any in Australia? Just about as good as any in Australia. I look upon the proposed route as a one-sided affair, because you will not pick up any traffic on the right-hand side of the line.
835. Will not the conditional leases be available next year for free selection and settlement? Yes.
836. Will not settlement come about? Yes, no doubt; but there is not a great area of country on the north east side of the line. Then, too, while the land might be taken up by small settlers, you must remember that it would cost a small settler as much to drive in 200 sheep as it would cost me to drive in 2,000 sheep.
837. You think that the route does not lie sufficiently north-west? Yes. I do not say that Moree is not entitled to a railway, because I think it is; but while I should like to have the line as straight as possible, I think it would be better to take it to the west, because it would then serve more country. It must be remembered that there is a mountain range on the right-hand side of the line, which limits the area of good land.
838. You do not regard the distance of 20 miles between the railway and the mountains as sufficient? No. It would be better to have the line 40 or 50 miles away from the mountains. With every mile that you go west you give additional facilities to the best producing districts.
839. Is not the country more to the north-west subject to floods? Yes.
840. Do you think it would be a good thing to construct a railway through flooded country? The country is flooded, but it is not impassable. Besides, the floods are not so heavy at Wee Waa as at Narrabri.
841. You admit that the country is flooded? The whole of the country is flooded.
842. But the proposed line runs through higher land than the route which you suggest, because it is nearer the mountains? Yes.
843. And therefore the country is not so subject to flood? The creeks there rise higher than they do further down. Lower down they spread themselves out, and the water is sluggish.
844. But would it not be easier to make a culvert over a creek than to take the line across the flooded flat? I do not know that the country which the proposed route would traverse is less subject to flood than the rest of the district.
845. Would you oppose your opinion to that of the engineers? Certainly not; but the road from Boolcarrol into Wee Waa is the road which my drovers invariably take. I asked one of them this morning why he went that way, instead of coming in by Thalaba, and he said that the Boolcarrol route was the best.
846. You regard the whole of the district as a good one? Yes; from the mountains to Moree, and right away to Walgett.
847. You admit that Moree is entitled to railway communication with the metropolis? I believe that it is entitled to a railway.
848. Have you anything further to state? No; but I say that if the line were taken 15 miles more to the west it would serve a greater number of people.
849. What would become of Wee Waa if the Gurleigh Point route were adopted? It would die a natural death.
850. Then the line, although it would be of no service to Wee Waa, would be a good one for the district? Yes; I believe that a town would spring up on the other side of the river towards Boolcarrol.
851. *Mr. Neild.*] The sum of your evidence is this, that a line some distance to the west of the direct route between Narrabri to Moree would serve a larger area of country, and lead to a larger amount of agricultural development? Yes. I cannot speak as to the agricultural development. It is principally grazing country there.
852. But such a line would serve a larger extent of country than the direct route? Yes; it would serve as much more of the district to the west as the distance between it and the direct route.
853. The direct route runs within 20 miles of the mountain range on the east? Yes.
854. If the line were taken 15 or 20 miles further westward, the railway would have a much larger amount of traffic? Yes; a very much larger amount.
855. Do you speak of passenger traffic, or of goods traffic, or of both? Of both.
856. Do you think that if the direct route line is constructed there will be much passenger traffic from stations between Moree and Narrabri? No.
857. Would the people of Millie drive to Woolabrar Station, or would they go to Narrabri? No doubt the people coming up from Thalaba to Millie would drive through Woolabrar; but they are only part of the whole population.
858. Would wool coming into Millie go to Woolabrar, or to Narrabri? I question very much whether it would not travel to Narrabri rather than pay the extra train carriage. A passenger, of course, studies his own convenience first, and travels as quickly as he can; but, with goods and live stock, the question of pounds, shillings, and pence, has to be considered.
859. Do you know the nature of the country along the two routes—the Gurleigh Point route, and the proposed route? I know the country well from Narrabri to Gurleigh Point, and on the other side right out to Millie.
860. Is the risk of floods greater upon the Gurleigh Point route than upon the direct route? I do not think so.
861. You told us just now that your sheep have travelled further west than the travelling stock route in wet weather, in order to escape the danger of floods? Yes; they came through Wee Waa past Gurleigh Point.
862. Where do they start from? From Collarendabri. They originally started from within 15 miles of Mungindi. They came across the Queensland border from a homestead lease near the boundary of Bagott's old run.
863. Is there much settlement in the way of homesteads between Narrabri and Moree? Not very much.
864. Are there any free selections? There are some, but not very many. The free selectors live principally out to the west.
865. Are they great in number out to the west? Yes, until you get to Moree.
866. There are more on the route which you advocate than on the direct route? Very many more.
867. *Mr. Wall.*] Do you think that stock in the Birrie and Culgoa districts would be likely to patronise the line if it were taken in the direction which you propose? Yes; it would come into Millie.
868. How far down the Birrie would they be likely to utilise this line? Pretty nearly down to a line west from Walgett.
869. That would be about Narran Lake? Just above there. I think the people at Narran Lake would very likely make towards Nyngan.

R. Richards,
Esq.

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870. If the line were taken to Walgett, do you not think that the people round Goodooga and just about the lake would be likely to send their wool to Walgett instead of sending it to the proposed line? Goodooga is nearer to Collarendabri than to Walgett.

871. But would it not be better for them to send to Walgett? It would suit the people below Goodooga to send to Walgett, but when there were no fences they invariably came in from Collarendabri.

872. If a railway were constructed to tap the Darling at Walgett, and also at Brewarrina, a great portion of that part of the country would be served by it? Yes; that is the country below Goodooga—20 or 30 miles below it.

873. Supposing the line were taken to Oonamble? Part of the trade round about the Narran Lake and Gilgoa would very likely go to Walgett.

874. You stated that you would not say that the places along the proposed route are not entitled to a railway, but that it would be better to take the line further to the west? The western route would be 15 miles longer, but I do not think that that affects the question. I admit that the people of Moree would be put to a disadvantage in having to pay for 15 miles additional railway carriage; but the people out in the western district, who are more numerous, and who control a larger area of good country, would get a distinct advantage.

875. Suppose a line were made to Moree, and another to Walgett, would not they, with the existing line to Bourke, serve that part of the Colony very well? Yes; but the country to the north of the Namoi would not go to Walgett. It is almost impracticable to go to Coonamble now, because of the difficulty of crossing the creeks.

876. Have you purchased any stock in the vicinity of Cobar? No; I have purchased a great number about Nyngan.

877. Are you aware that the people in that district drive their stock along the road in preference to trucking it? I do not care about buying sheep at Cobar. I do not care to buy them below Nyngan.

878. If you had stock 20 or 30 miles below Moree, would you take them to the nearest point on the proposed line, or would you go to Narrabri? I should not go out of my way to take them to the railway.

879. You would go to the nearest trucking point to the market to which you were sending your stock? Yes.

880. If you were 15 or 20 miles from the proposed line, you would, in all probability, send your stock to Narrabri? If I were to the west of Millie I certainly would.

881. Is there not a tendency, in that part of the country, to erect boiling-down works? Yes.

882. Do you not think that the surplus stock of the district will eventually be boiled down? No; if prices are low, no doubt the ewes will be boiled down; but if you can make other use of the ewes they will not be boiled down. Wethers are not likely to be boiled down, because they will give a better result either in the Sydney market or in the home market. I was instrumental in starting a boiling-down establishment at Narrabri to get rid of the old ewes that could not pay 1s. 6d. train fare.

883. They would not boil down ewes unless they were fat? No.

884. A great quantity will be boiled down? Ewes will often be boiled down. If a ewe will give 6 lb. of tallow it will pay to boil her down.

885. I suppose you know that they are selling fat ewes there at 1s. 6d. per head? No; I would give you 4s. for them if fat.

886. If boiling-down establishments are erected, they will be erected on the river? Yes; to the nearest point to which stock can travel.

887. And the tallow will probably be taken away by the river steamers? What is the good of talking of the river steamers. You could not let your tallow accumulate for three months while you were waiting for the river to rise. You can get your wool away, because the Darling is generally navigable after the winter rains.

888. Have you ever known the Darling not to be navigable as far as the Barwon? Yes; for two years I have known people not to be able to get up it. I went to the Darling when I was a boy of sixteen, and for four years you could not get up it.

889. You are aware that a steamer has been up to Mungindi? Yes; the steamer went up to Mungindi once.

890. You are aware that the Government propose to lock the river? No; I am not.

891. Some of the Government engineers have reported in favour of the scheme? I was not aware of it, but if there were railway communication the owners of boiling-down establishments and meat-preserving works will avail themselves of it. If you trusted to an intermittent steamer service, you would have to let your tallow accumulate for four or five months, and thus lose the interest on the money, besides running the risk attendant on keeping an inflammable article like tallow in store. I like to get my tallow away every two or three days if I can.

892. You know Messrs. Rich, at Bourke? Yes; I think they are at Brewarrina, too.

893. Have you ever heard of them getting merchandise up the river? Yes; two or three times.

894. And guaranteeing a return cargo of wool? No.

895. Do you know that those are the conditions under which they get their merchandise up at the present time? Will they guarantee their wool for the next season. They might guarantee it when the river is in flood. I would guarantee to supply you with meat for two months, but not for twelve months.

896. You know what the condition of the river has been during the last three or four years? Yes; it has been very good, because we have had unprecedentedly good seasons, but I have very often known it to be not navigable.

897. I want to know whether produce from this rich pastoral country will be taken down the river, or by the railway? It would go by the railway if that were cheaper.

898. If the river were locked, and made permanently navigable, it would monopolise the tallow, and produce of that character? I think that it would very likely come by rail.

899. If the railway were taken to Walgett a great part of this district would be to the west of the line? Yes; some of it would.

900. All the country round the Narran Lake would go to Walgett? That would be the direct route, no doubt.

901. *Mr. Suttor.*] What is the average number of cattle that a truck will take? Nine or ten.

902. How many sheep will a sheep truck hold? From eighty-six to 100, according to the length of the fleece.

903. You sent away 140 cattle trucks from this district? Yes.

904. And how many sheep trucks? 1,135, carrying 105,467 sheep.

905. Did they all come from Narrabri? They all came from Narrabri; but a few of them were trucked

at

- R. Richards, Esq.
5 Dec., 1893.
- at Boggabri. About one truck in ten came from Boggabri. They were congested at Narrabri, and to relieve the congestion I drove some of them on to Boggabri.
906. *Chairman.*] Had there been no congestion, you would have trucked them all at Narrabri? Yes.
907. *Mr. Dawson.*] I suppose you send between 350 and 400 bales of wool from Yarraldool? I cannot tell you; I have never looked into the matter. I leave that business to the station manager.
908. That wool, you say, went to Narrabri direct? Yes.
909. If the line had been made to Gurleigh Point would the wool have gone there? Of course it would.
910. Would it have gone through Millie? No; it would have gone direct to Gurleigh Point.
911. If the proposed line had been made, would the wool have gone to any of the stations on it? No; any stock coming up the Namoi would go direct to Gurleigh Point.
912. You know the Boolcarrol Run? Yes.
913. Do you know how many bales of wool they send from there? No.
914. Would any of it go on to the proposed line? It would all go to Narrabri. Everything to the west of the Thalaba Creek would go to Narrabri.
915. Would not stock routes branching off to each of the stations on the proposed line be required before any stock was taken to them? Yes; you would have to make roads to them.
916. And tanks every 6 miles? Yes; if you wanted to have good travelling roads. You must have suitable roads to travel stock on.
917. If the proposed line were constructed, it would be necessary to make three or four stock routes, branching off the present stock route? Yes.
918. Unless that were done, it would be impossible for anyone to get to the railway? Yes; people could not get to the line if there were no road.
919. You think that the Collarendabri traffic would come through Millie, and instead of going at right angles to meet the line, would continue on to Narrabri? Yes.
920. *Mr. Collins.*] If the line were constructed to Gurleigh Point, and you were sending stock from Yarraldool station to Narrabri, or to Sydney, where would you truck it? At Gurleigh Point, or on the other side of the river if I could.
921. If you were coming through Millie, you would not go to Gurleigh Point to truck this stock? I would continue on until I met the line. If the line went *via* Gurleigh Point, I should have to go right past it, and I would not go 15 miles out of my way to save 20 miles of train carriage to Narrabri.
922. Do you know as a fact that when wool has been put on to the drays, it generally goes direct to the nearest station? Of course, which, if the line went *via* Gurleigh Point, would be Gurleigh Point in my case.
923. Is there much settlement to the west of the line? Yes; there are a good many selectors.
924. Considering the nature of the country, do you think that it is fairly well settled? Yes.
925. We have evidence before us to the effect that some of the selectors own from 10,000 to 20,000 acres each;—do you consider that good settlement? I thought the holdings were limited to 2,500 acres.
926. If the evidence is as I have stated, would you call the settlement good? No.
927. If a direct line were taken from Narrabri to Moree, and the selections on that line were smaller than those to the west, would not the line serve more interests than a more westerly line? Smaller selections would, no doubt, give a larger passenger traffic, but not such a large stock traffic.
928. The direct line would be the best in the interests of the settlers along it? Yes.
929. Did you say that you thought a line ought to go to Mungindi? By no means.
930. To Collarendabri? That is the direct line which I would favour from Narrabri.
931. You think there ought to be a main trunk line to Collarendabri, and a branch to Moree? Yes.
932. *Chairman.*] I think I understood that you were well acquainted with the country south of Mungindi on to Walgett? Yes.
933. You have only an imperfect knowledge of the country between Mungindi and Goondiwindi? Yes.

Henry Septimus Badgery, Esq., stock and station agent, sworn, and examined:—

- H. S. Badgery, Esq.
5 Dec., 1893.
934. *Chairman.*] You are a stock and station agent? Yes.
935. Are you familiar with the project before the Committee? Yes.
936. *Mr. Humphery.*] Will you explain to the Committee the route which you favour, and your reasons for favouring it? I was over the mail coach road from Narrabri to Moree not very long ago, but I have not been to Wee Waa. I favour a line from Narrabri to Wee Waa because I think the more you go to the west the greater the extent of country which you benefit. There is a large extent of good country out in the direction of Walgett and Collarendabri, and a line more to the west would have the effect of opening up the Narran country. Of course if all that is desired is to make a line from Narrabri to Moree in the shortest possible way, all I would ask is, "what are the respective costs of the two lines." But if you ask me, from my knowledge of the country, and of the stock sent from there into this market, which would be the best route to take, I should say "keep away from the Nandewar ranges."
937. *Chairman.*] It is estimated that the direct line would cost £150,000, or, in round figures, less than £3,000 a mile, while the other route will be 15 miles longer, and will cost at least £400 a mile more? If the line is intended to give accommodation to the producers of the district I should favour the westerly route. The people living towards Wee Waa raise a large quantity of stock; and there are a great number of small settlers there. I do not, at the present moment, know any small holders on the eastern side of the proposed line who are sending stock to market.
938. *Mr. Humphery.*] In your opinion the district would be best served by a line 15 miles more to the west along the Namoi? I did not say how much to the west, but the further you go west the more country you open up and the more people you serve.
939. Would more people be served along the route which you propose than along the direct route? I have not been along the direct route; but I know that the other country is good, and that there are a number of selectors on it.
940. You have not travelled between Narrabri and Moree, or between Wee Waa and Moree? I have travelled from Narrabri to near Moree, not to Wee Waa or to Moree itself.
941. There is considerable settlement and production around Moree? Yes.
942. If the line were taken by the route you suggest the people of Moree would have the continual burden of 15 miles additional carriage? Yes.
943. Do you think there would be compensating advantages? I do, because if you kept the line to the east

east the people out in the west would ask for a line to Collarendabri, so that you would have two lines: whereas, if you took this line more to the west, the one line would do.

944. Notwithstanding the greater cost of the deviation and the increased distance, you still advocate the western line? I do; because while the Moree people would have 15 miles further to travel, the railway would benefit others who also require accommodation. If you made the direct line a great number of people, who would be served by the more westerly line, would not be benefited by it at all.

945. The people who would use the Gurleigh Point line, would not use the proposed line? Up towards Millie the people would come into the proposed line rather than go to Narrabri.

946. You think the people coming into Millie would use the proposed line at Woolabrar or Gurley? I think they would come to Woolabrar.

947. You think that Woolabrar would serve the Millie traffic if the line were not made further west? Yes; but they would rather have a line to Millie than travel 12 miles to the proposed line.

948. Is it your opinion that stock would continue to go to Narrabri? In travelling stock a great deal depends upon the state of the road and of the markets. We have to be guided by that. If the market was very low, and the country was good, we would say, "Travel on to Narrabri, because the market may improve." But in any other case we would say, "Truck at the nearest station."

949. Assuming that stock had reached Millie, would it go on to Narrabri if the country were good, or would it go to Woolabrar? It would depend upon the market. Sometimes, when we are on the railway line, we truck part of our stock, and travel the balance on to the next station.

950. It depends very much upon circumstances whether you would use the railway or the road? It depends upon circumstances to a great extent, but, generally, when we have a railway, we send stock by it.

951. Is there anything you would like to add in support of your opinion that it would be better to take the line through Gurleigh Point, than to take it direct to Millie? I think that the direct route keeps too close to the ranges. If the line were more to the west it would open up more country and give more accommodation, because it would go nearer to a very large producing district, which is as much entitled to a line as Moree is. I give it as my opinion that if the line runs out in the Gurleigh Point direction, and then on to Moree, as far as you can take it without making a right angle, it will serve a large producing district, which is as much entitled to railway communication as the Moree district. The country I speak of is very fine, and is likely to be thickly populated. My knowledge of it is gained from an intimate acquaintance with the stock which comes from all parts. I contend that the stock agents here know more about the country than the people who live on it. We know the relative fattening merits of different parts of the country by the way in which butchers buy stock coming from them, better than the people who live there, and who can only judge by appearances.

952. In your opinion, the earnings of a line going through Gurleigh Point, would be greater than the earnings of the direct line? I think that the earnings of the proposed new line would be greater, but the earnings of the whole line from Narrabri to Sydney might not be. These people, if they cannot get a railway to Gurleigh Point, will have to go to Narrabri. I think it would have been better if the map had given a better idea of the settlement along the route.

953. *Mr. Wall.*] You know something of the overflow from the Balooone? Not personally.

954. Do you think that country lying between the Culgoa, Birrie, and Bokhara, would send its stock past Walgett to Narrabri or Moree? If there were a railway to Walgett.

955. If there were a line from Coonamble to Walgett? No; it would be trucked at Walgett.

956. Do you think that the whole district would be fairly served by a line to Bourke, a line to Walgett, and a line to Moree, especially if they were carried to the Queensland border? Yes.

957. But any line to the west of this line would deprive it of a portion of its traffic? Of course, station-owners would consider which was the cheapest line for them to use.

958. Is a pastoral property fairly well served if the railway comes within 20, 30, or 40 miles of it? Yes.

959. Assuming that it is contemplated to make a line from Narrabri through Moree on to the Queensland border, do you think it would be wise to make the deviation you speak of? I do not think that a few additional miles would weigh very much when you can, by making a deviation, tap a highly-productive country. I do not believe that the country between Narrabri and Moree on either route is going to be a pastoral country for ever, and that is a matter which must be taken into consideration. It is a different thing to haul produce by teams to a railway line from simply driving stock there.

960. Would not the deviation you speak of simply give local accommodation, seeing that it will only be a matter of 15 miles? Although the country is good on both routes, I think the Gurleigh Point line would serve a much larger area than the other line.

961. But seeing that the deviation is so small, would not the district be as well served by the direct line? The people out towards Gurleigh Point are fairly well served as it is, but they would be better served if they had a railway. I should like an idea of the cost of the first mile or two of the line from Narrabri, and also of the Gurleigh Point line.

962. *Chairman.*] We have it in evidence that the crossing to the south-west of Narrabri is far better than the crossing at any other point which they have been able to find on the river, and that it will be much less costly?

963. *Mr. O'Sullivan.*] It would cost about £70,000 more to take the line *via* Gurleigh Point than to follow the direct route;—which, in your opinion, would be the best thing for the State to do, to make the Gurleigh Point line, or to make the direct line from Narrabri to Moree, and devote the £70,000 so saved to the construction of a branch line to Collarendabri, *via* Boolcarrol? I would sooner spend the money in constructing a branch line towards Boolcarrol. That is an important part of the country to open up by railway. If you can serve the district by a deviation it would be a wise thing to make that deviation, but if you can make a direct line to Moree and another line to Boolcarrol, the people will not complain.

James Moseley, Esq., sworn, and examined:—

964. *Chairman.*] You are a grazier, are you not? Not at the present time.

965. You are familiar with the plans before the Committee, and with the official evidence taken in connection with this inquiry? I think so.

966. *Mr. Trickett.*] You have resided in the district for a very large number of years? Nearly forty.

967. Whereabouts? I have lived at Gurley, Edgeroi, Millie, Tibbercenah, Boolcarrol, Wee Wee, Gundemaine, and Baranbah.

968. You are familiar with the whole of the country between Narrabri and Moree? With every inch of it. I have either owned or managed nearly every acre of it.

- J. Mosley, Esq.
5 Dec., 1893.
969. Which of the three routes marked on the plan do you consider would be the best to adopt? I can hardly answer that question without asking what is the railway for. Is it to open up the district, or is it to connect the town of Narrabri with the town of Moree? If it is intended to effect the latter object, then the straighter you make it the better; but if it is intended to open up the district and convenience producers, it should go as far to the west as you can take it. Do not let me be understood, however, to advocate the Gurleigh Point route, because there is not a worse crossing place on the river than that. Whenever there is a flood there is a regular congestion of water there. The Gurleigh Point crossing is bad, and the Narrabri crossing is bad; they are both very bad.
970. How can you avoid them? It is the engineers' duty to look for better crossings.
971. You venture the opinion that these are the worst crossings? During the floods of 1857, 1864, 1870, 1873, 1890, and 1893 the water was very many feet over the banks at both places. I do not advocate the Gurleigh Point route, because I know the crossing is particularly bad there.
972. Could you point out a better crossing at Narrabri than the one suggested by the Engineer-in-Chief? I do not know that I could; but in 1864 the water was about 15 feet over the banks at the spot which has been selected. It was up to 5 feet all over where the town of Narrabri is.
973. How has it been after recent heavy rainfalls? In 1890 the water was just awash of the road and of the bridge with one heavy storm in the mountains.
974. Is not all the country about there liable to flood? Certainly; at these two places. A great number of streams meet at these two places, and make the river particularly high.
975. Is the place which has been selected a place where a railway bridge could be cheaply constructed? I only speak as a civilian, but I cannot conceive how the construction of a bridge there would be otherwise than most expensive. During a flood which occurred about five months ago, there was fully half a mile of water to be crossed, taking the river and creek together. And I leave it to the Committee to judge whether a bridge could be constructed cheaply or not. I have boated on the river, built bridges over it, taken stock across it, and know it thoroughly. There is a tremendous rush of water at both places I have mentioned.
976. If it has been stated that a bridge could be constructed very cheaply at this spot, you do not think the statement is correct? I cannot conceive that half a mile of water, which is running very quickly, can possibly be bridged cheaply. An estimate given some years ago went up to £40,000 or £50,000.
977. Could you indicate a better crossing than the one which has been adopted, either to the east or to the west? Yes; I could to the west.
978. Whereabouts;—could you point it out on the plan? No; because the plan does not show enough of the country to the west. I was not with the Sectional Committee when they were taken over the river, but I believe that they were taken over near to the site which I would recommend for the bridge. An old friend, Mr. Quinn, assured me that in 1840 the land was not covered; it was not covered in 1864, when he lived there; in fact, it has never been covered by any flood.
979. *Chairman.*] You speak of a place about 2 miles east of Wee Waa? Yes; I believe that it is very close to the site for a bridge. I should advise to go a little bit higher up or a little lower down, because starting from the bridge straight out you would run into a lagoon. We had a bridge near there for crossing stock, and we used it for many years.
980. Can you give us the name of the place? Welbon or Yaralblucy. The latter place was where Quinn's house stood.
981. *Mr. Trickett.*] After you pass that crossing and go on towards Gurleigh, is the country subject to flood? I think you misunderstand me. Gurleigh is higher up the river. This crossing we are now speaking of is below Gurleigh.
982. Which do you think would be the better of the two routes from a traffic point of view? The further you go to the west the better.
983. If we adopted the Gurleigh Point route we might as well go right through Millie, as $4\frac{1}{2}$ miles to the east of it? Yes; and much more so if you go further down the river.
984. I understand that the line keeps a little to the east in order that it may pass through Government land? If you went more to the west you would cross some conditional purchases and conditional leaseholds, but very little freehold land.
985. The holdings there are very large? According to the evidence given at Wee Waa, various of the conditional purchasers seem to have joined and so made family holdings, so that many of them own 5,000 acres, and even more.
986. *Chairman.*] You would take the Gurleigh Point route on the south of the Namoi about 3 miles further west, and crossing the river, would go in a northerly direction to Millie, and thence in a fairly straight line to Moree? That is so.
987. *Mr. Trickett.*] But if the line went that way it would have to go through conditionally purchased land? Yes; from what I know of the country, and according to the map, it would cross conditionally-purchased or leased land in some places.
988. That is really alienated land? Yes; but we do not generally call it purchased land.
989. It would be better to go through land which has not been conditionally purchased? I should think so, unless the betterment principle were applied. But the conditional purchasers specially desire the western route.
990. What great advantages has the western route? It would tap the whole of the traffic coming up the Namoi through Wee Waa, Bookarrol, Collarendabri, Pian Creek, and Thalaba Creek, while the "red" line would not touch that traffic at all. I think that the western line would get fully two-thirds more traffic than the direct line.
991. The country to the west is very thickly stocked? Yes.
992. A large quantity of sheep and cattle are sent from there? Yes. I have before me the returns made up in Mr. Bruce's office of the owners of cattle, sheep, and horses in that neighbourhood.
993. How does the settlement of that part of the country compare with the settlement along the proposed line? By going as far as you could to the westward you would receive at least two-thirds more traffic than you would get on the proposed "red" line. Of course, Moree will be a centre, but that traffic will come in in any case.
994. All parties seem to be agreed as to the necessity for a line from Narrabri to Moree; the only question is, what route should be taken? Yes.

THURSDAY, 7 DECEMBER, 1893.

Present:—

JACOB GARRARD, Esq. (CHAIRMAN).	
The Hon. WILLIAM HENRY SUTTON.	WILLIAM CHANDOS WALL, Esq.
The Hon. JAMES HOSKINS.	WILLIAM McCOURT, Esq.
The Hon. FREDERICK THOMAS HUMPHERY.	JOHN CASH NEILD, Esq.
The Hon. JOHN DAVIES, C.M.G.	EDWARD WILLIAM O'SULLIVAN, Esq.
The Hon. WILLIAM JOSEPH TRICKETT.	CHARLES COLLINS, Esq.
HENRY DAWSON, Esq.	

The Committee further considered the proposed Railway from Narrabri to Moree.

James Moseley, Esq., sworn, and further examined:—

995. *Mr. Trickett.*] When the Committee adjourned last Tuesday you had given it as your opinion that the capabilities of the Gurleigh Point line were superior to those of the direct "red" line proposed by the Government? What am I to understand by "capabilities"?

J. Moseley,
Esq.

996. What traffic will the line carry;—will you amplify your answer by telling us, as far as you know, what amount of traffic would come to the "red" line and what would come to the Gurleigh Point line? What I said was that two-thirds more of the stock and wool of the district would come to the Gurleigh Point line than to the other "red" line. I have since worked out the figures, and I find, taking the stock returns of the several districts, that there would be about 1,256,340 sheep and 52,443 head of cattle within reach of the country traversed by the "red" line. I do not say that that number of stock would come to the "red" line, but they would be within reach of it. On the country traversed by or within reach of the line which I would suggest, there are 2,656,566 sheep and 55,000 head of cattle. The large proportion in the number of cattle is accounted for by the large number of cattle kept in the Moree district. My figures correspond very closely to the statistics of the traffic passing through and trucked from Narrabri last year.

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997. In order to arrive at your figures, how far would you go east of the "red" line;—40 miles? No; as in many places the mountains are only 15 miles from the "red" line.

998. You would go up to the mountain range? Yes. There is only one large station that would be within reach of the "red" line on the eastern side of the line, and that is Terry-Hie-Hie. The line is an irregular one, because the mountains run back in some places 15 miles, and in others 25. I have taken into calculation all the stations on which I know the stock would be within reach of the "red" line.

999. The district on the east side of the "red" line would be bounded by the mountain range, and would vary in width from 15 to 25 miles? In no place would it be as much as 25 miles across, except at Terry-Hie-Hie. It would vary from 10 to 20 miles, but very little of that land is available. The good land is alienated—the rest is scrub or mountain.

1000. How far would the district extend on the west side of the line? About 10 miles. That corresponds with the evidence which the Committee have heard, and with what I know of the country myself.

1001. The people within 10 miles of the line on the western side would avail themselves of it? Exactly. Of course a run might be a little further back than 10 miles, but that would be a fair average. It would be sometimes more and sometimes less.

1002. If people living within 10 or 15 miles on the eastern side of the line will avail themselves of it, why should you fix the boundary of the western district at 10 miles distance? I throw in all the runs lying on the east side of the "red" line, and between it and the mountains; but I think that the stock on the western side of the line beyond or to the west of the travelling stock route, would follow that road instead of crossing to the "red" line, because the stock road is better. It is metalled in bad places. There are bridges over the creeks, and generally water in the creeks, and where there is no other water the Government have provided tanks.

1003. Can you give us similar information with regard to the Gurleigh Point route? Before doing so I must tell you that as regards either route a great number of the stock from the south of Narrabri must be left out of consideration, and I have, therefore, cut off about 100,000. The Tarriaro stock and wool all go to Narrabri direct. The Baranbah stock and wool would truck at Baranbah. Then there is Thorobry Jacques' station. His stock and wool would truck at Boggabri. I have left 100,000 head of stock out of the calculation, because they would not come to either line in any case. This will account for any apparent discrepancy in the figures.

1004. How far do those runs extend from Narrabri? Tarriaro is 8 miles south of Narrabri, and Baranbah is about 20 miles. Jacques' station is nearer Boggabri about 25 miles from Narrabri.

1005. Will you now tell us about the more westerly route—the Gurleigh Point line? The Committee will understand that I do not recommend the Gurleigh Point line, because the crossing is not a good one. In taking into consideration the amount of stock likely to be sent to a more westerly line, I throw out the stations between Narrabri and Gurleigh Point and all those on the "red" line. All to the west of the line of which I am speaking, however, would come to a line near to Gurleigh Point, because they would have to cross it at one point or another.

1006. I understand that you give the Gurleigh Point line no credit for stock pasturing on the eastern side of the "red" line? Not until it gets to Millie.

1007. When the Gurleigh Point line gets as far as Millie, the people on the eastern side of it will avail themselves of it? Yes.

1008. South of Millie along the "red" line you do not think that more than 15,000 head of stock will be trucked? Owners situated as the Eckfords, who are within a few miles of Millie, would send there, but all the other stations along the "red" line would send to Narrabri, as they do now. Tycannah, perhaps, would send to Moree, but Gurley and Edgeroi would send to Narrabri.

1009. All the stations on the southern half of the "red" line would send to Narrabri? Yes.

1010. They would not avail themselves of it? Of course, if the railway were taken along the "red" line, the people there would use it, but I understand you to assume that the Gurleigh Point line is now under consideration for construction.

1011. If the Gurleigh Point line were constructed the people owning stock along the "red" line would drive them into Narrabri? Yes, from the above named stations.

1012. All south of Millie would do that? I think Tycannah would be the only station which would not, and that would not affect the number of sheep very materially.

1018.

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1013. Would these people south of Millie continue to drive their stock to Narrabri, whichever line was constructed? I think so. I do not think that that would make a difference of more than 10,000 sheep.
1014. North of Millie what traffic do you expect would be attracted to the line, independently of the traffic between Millie and Moree;—I want you to tell us how the Gurleigh Point line would be availed of by the people between Millie and Moree? More to the westward?
1015. Yes? In the Moree district there are 1,463,300 sheep. In round figures, about 463,000 sheep would belong to the stations in the Moree district, the owners of which have given evidence to the effect that that they are now sending, and will continue to send, *via* Millie, or Boolcarrol, or Wee Waa. I have therefore credited the western route with 463,000 sheep which would use the Gurleigh Point line from that district.
1016. How far does the Moree district extend;—does it fill in the gap between Moree township and Millie? I do not think the stock district is marked on the map before the Committee.
1017. Cannot you tell us of your own knowledge;—what does the district you have just mentioned embrace, starting on the “red” line, a little to the south of Gurley Station? I believe that Gurley Station would be in the Moree district; that is accurate enough.
1018. The district commences somewhere about there, as on the map, and extends northerly and then westerly near to Moree? Of course, Moree is in it.
1019. Then it extends 70 miles to the north of Moree? Yes; about 60 miles to the Queensland border; but the boundaries are very irregular.
1020. The district extends north nearly to the Queensland border? In one part it extends in the north to the Queensland border.
1021. How far does it extend west? It goes nearly to Mungindi.
1022. How many miles would that be? In one part it runs about 30, and in another from 50 to 60 miles.
1023. In talking of the Moree district, do you refer to the district as marked upon the plans? Yes; but the stock districts are not marked on the plan. Only, as I have told you, and as you heard from Mr. Hill and other witnesses, the traffic from the south-western portion of the district goes *via* Boolcarrol or Wee Waa to Narrabri, and would not feed the railway marked by the “red” line at all; therefore I did not take that portion into consideration when speaking about the probable traffic on the proposed line as by the “red” line.
1024. *Chairman.*] But it would come to the Gurleigh Point line? Quite so. That traffic would amount to the output from about 400,000 head from the south-western portion of the Moree stock districts, and the output from about 1,000,000 head would come from near Moree.
1025. *Mr. Trickett.*] In your opinion, as an old squatter, what distance to the west of the Gurleigh Point line and north of Millie do you think runholders would avail themselves of a railway rather than drive their stock to Narrabri? As far north as and beyond the Queensland border. All the stock and wool from that part of the district, and even some from the Peel River Company's stations in Queensland come *via* Collarendabri and Boolcarrol, which is, practically, *via* Wee Waa, because some of it goes in to the river at Wee Waa, and some at Gurleigh Point. I have made what I think a low estimate. I think that a little more than one-third of the stock from the Walgett district would cross the Barwon, and the stock from the Pilliga district would all come *via* Wee Waa. All their stock and wool come that way now. Some of the Barwon wool stock comes to Millie; but, as a rule, it comes up Thalaba Creek *via* Boolcarrol or Pine Creek, so, of course, it comes up the Namoi.
1026. Which would be the largest source of traffic—wool or sheep? Of course we can only go by what occurred last year. In certain seasons there might be larger traffic in one than the other, but I think you can safely go by precedent. Last year 65,249 bales of wool were sent away, and 634,666 sheep. This year I believe there are 70,000 bales of wool trucked at Narrabri already; and it will probably increase each year.
1027. Then wool would be the largest item? That would have to be worked out by reference to the freight book. There are different rates for the trucking of wool and sheep, and a large proportion of the wool is shipped at Newcastle.
1028. Which do you think the best country, and the most progressive as regards population—that traversed by the “red” line, or the country traversed by the Gurleigh Point line? If by the best, you mean the best for grazing there is not one penny worth per acre of difference. I have owned or managed nearly the whole of it.
1029. You mean right away from the range out to the west? Close to the range you have very bad scrub, and though, no doubt, any country that will grow trees will grow vegetables, it would take £10 an acre to clear that land. As far as grazing is concerned, one part of the country is as good as another. The land on the Gurleigh Point route may be a little heavily grassed, though, practically there is no difference. The “red” line passes through a great deal of scrub. There is scrub from near Narrabri to Spring Creek, and a belt about 2½ miles at Tarlee Creek, and a belt of 6 or 7 miles near Woolabrar to the other side of Waterloo Creek.
1030. *Chairman.*] How far do those belts extend east and west? That at the back of Narrabri, near Spring Creek, almost connects with the mountain scrub. The Tarlee Scrub connects with the mountains, but the scrub on the other side of Waterloo Creek, as it is improperly named on the map, because it is really the Menamoi Creek, is quite different. It is there called Eckford's Scrub, and is entirely surrounded by the plains, about 50 miles round.
1031. *Mr. Dawson.*] It is belar scrub? Belar and box, and some round-leaved ironbark.
1032. *Mr. Trickett.*] Then, in regard to the grazing capabilities of the land through which they pass, one line would be better than the other? You must put the scrub land out of calculation, because, while, no doubt, any country which will grow trees, unless it is an inferior description of sandy country like that along the Hawkesbury and Newcastle railway, will grow grass, it costs money to clear it. No doubt on country of basaltic formation you can always get grass by clearing the land.
1033. There is no scrub on the western route? No scrub at all.
1034. Then the western route has that advantage? Certainly.
1035. On which route are there the most people—on the “red” line? You may say that there are none on the “red” line; perhaps there are two or three conditional purchasers on Gurley station, and about the same number at Edgeroi and other places—not a dozen altogether.
1036. How about the Gurleigh Point line? It would run chiefly through conditionally purchased and conditionally leased land.
1037. Is not that land in the hands of a very few people? I heard at Wee Waa that it was, and that the holdings in some cases went up to 10,000 acres; but such holdings are held by men with large families—people like the Murphys, who have selected their holdings before the 1884 Act, and since.

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1038. You are aware that the Gurleigh Point line will involve an extra expenditure of £70,000, and will be more than 15 miles longer than the other line;—what is your view of that estimate? Of course on this matter you will get better information from the engineers. I am a practical dam maker, and I cannot see that there will be an iota of difference in the cost of shifting a yard of muck at Gurleigh Point and a yard of muck on the "red" line. I have shifted many thousands of yards in both districts, and the price never varied a farthing at either place. I have paid as much as 2s. 6d., and as little as 6d. a yard at both places, which has been wholly dependent on the seasons and the value of labour at the time.

1039. I do not wish you to consider the matter in that way; I wish you to take into consideration the fact that the "red" line will cost £70,000 less than the Gurleigh Point line? That must be on account of the estimate of labour, as the estimate of the cost of construction of the Gurleigh Point line was made some ten years ago when labour was fully 50 per cent. more costly than at the present time.

1040. But it will be 15 miles longer? In that case, the estimate of £70,000, for the 15 additional miles would signify that it would cost more than £4,000 a mile, while the "red" line is only estimated to cost £2,000 a mile. I cannot conceive such to be a fact.

1041. I understand that the more you go to the west the more sloppy the country becomes? That is entirely untrue, and the Committee have been misled in the matter. It is very wrong that such evidence should have been brought before you. I say this, because I have forty years' experience of the country and have travelled through it during flood time day after day. I know that such is not the case.

1042. Do you say that a railway constructed along the Gurleigh Point route would not have any greater engineering difficulties in regard to embankments, piling, and so on;—that the engineering difficulties would be the same on the Gurleigh Point route as upon the "red" route? That is more a question for an engineer to answer. The soil is the same along both routes with the exception of the scrub country on the "red" line. In the scrubs the soil is lighter, but against that you must remember that you would have to cut away the stumps. I had a good deal to do with the making of the line to Narrabri, and when a young man had several contracts, and I know that it is more expensive to shift soil in a scrub because of the stumps.

1043. Is not the country towards Gurleigh Point softer and wetter than that along the direct route? No; it is not. The black soil country is all alike. The scrub soil is decidedly lighter, and if there were no trees could be shifted at a lower rate; but when you come to shift the stumps it will cost you a great deal more. I may say that Mr. Gray, who gave evidence at Wee Waa, has written to me saying that he was very sorry that he had omitted to tell you that on the plains —

1044. *Chairman.*] We cannot receive his evidence in this way? Then I will give you my own evidence on the subject.

1045. *Mr. Trickett.*] Do you remember an inquiry being held by the Land Board at Gurleigh Point into the character of the country there;—I am told that the leaseholders in the vicinity of Gurleigh Point—I suppose the inquiry had something to do with the rents that were charged—gave evidence to the effect that the country was subject to floods which seriously affected its value? I do not know that, but I can quite understand it. You can understand that a man who is pleading for a reduction in his rent, will see all the worst features of the country. Gurleigh Point, as I told you from the first, is not a good site for a crossing, and no doubt during floods a good deal of the land is covered with water; but if a person took the trouble to look about him, as we do when we are travelling, he would find that he could pass over it, without being interrupted by the floods. There are warranbools, and a man might say that his land was flooded, and not be far wrong.

1046. You think that that evidence should be qualified? I have never heard a man pleading for a reduction in his rent who did not give all the reasons he could why it should be made as low as possible.

1047. But you do not think that there is any serious objection to the line going in a westerly direction? Undoubtedly not.

1048. Have you considered the question of the line going further on towards Queensland? In which direction?

1049. From Moree? Like everything else it has been discussed. It has been mentioned in conversation that some day there might be a connection from Moree or somewhere else. I have not heard anything else about it.

1050. Having in view the possibility of an extension to Queensland, which would be the better way to take the line—direct to Moree, or along the Gurleigh Point route? The Gurleigh Point route would go near to Millie and then on to Moree, and of course you would have stations near to Wee Waa and Millie. That being so, a few years would prove which would receive the most traffic—Moree, Wee Waa, or Millie; and I suppose the probabilities are that the line would then be extended from the place where the most traffic was received.

1051. You clearly say that you are not giving evidence from a selfish point of view? Not in the slightest. I do not own a hoof or an acre of ground in any of the districts. I am simply giving you the result of nearly forty years' experience in keeping stock during flooded seasons on all the country now under discussion.

1052. You are pronouncedly in favour of a railway to connect Moree with Narrabri? Decidedly.

1053. Which would you sooner see constructed—the direct line to Moree and a branch to serve the western country, of which you think so much, or a circuitous line like the Gurleigh Point line? I think I answered that question at the commencement. If Narrabri and Moree are only considered, and to be cheaply connected the straighter the line is taken the better it will be; but if the line is to be a remunerative one, and one that will serve the districts, the more west it goes the better, providing you do not compete with the connection which will hereafter be made between Walgett and Dubbo.

1054. I suppose that if we had heaps of money to spend you would say, "Go straight to Moree, and then make a branch line out to the west"? Where would the line branch from?

1055. From about Narrabri? Then the two lines would, for some distance, run very nearly parallel.

1056. *Chairman.*] Not if the branch line were aiming at Collareendabri? It would entirely depend upon circumstances. Do I understand you to say that the branch line would go direct from Narrabri to Collareendabri?

1057. *Mr. Trickett.*] That is the idea? Of course, such a line would go much more to the west than the line I thought of. I was thinking of the line going more towards Millie.

1058. *Chairman.*] We mean a line through Boolcarrol? Yes; but even such a line would, for some distance, run very close to the Moree line.

1059. *Mr. Trickett.*] Do you think that the line from Narrabri to Moree, whether taken along the "red" route or along the Gurleigh Point route, would compete with the Glen Innes to Inverell railway? Not until you got to Moree. In the first place there is an impassable belt of scrub and mountains dividing the two districts, and the natural features of the country, as well as the distance, would prevent it.

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1060. But after it got to Moree? Moree by that time would have got a halo of traffic around it.
1061. The Moree district is a very progressive one? Certainly, as far as I know.
1062. It has been a progressive district, independently of Narrabri or of any other place? Very progressive, but I might say exactly the same of any other place out in that rich country.
1063. *Mr. Davies.*] You gave some figures just now as to the quantity of wool trucked at Narrabri;—where did you get your information? From the station-master at Narrabri, and also from the agents. It is correct because I have had it verified.
1064. You are aware that we have already got information from the Traffic Department;—I think you were present when the station-master gave his evidence? No; I was not.
1065. You are simply repeating the figures given by him? I do not know what information he gave; but I know that my figures are correct to within a bale or two of wool, and the number of cattle and sheep trucked.
1066. You state that you got your information from him? Partly from him and partly from the agents.
1067. I suppose you admit that the information of the Traffic Department would be most likely to be correct? Not when the station-master says that only 10 per cent. of the traffic comes from the north-western district.
1068. That is not the question I asked? You can get even more correct returns from the Works Department.
1069. But surely we must get the truth from the Traffic Department? Yes, so that if my figures are wrong they may be proved so in an instant.
1070. You have learned that it was stated that only 10 per cent. of the traffic coming to Narrabri came through Wee Waa? Yes.
1071. Do you think that the station-master was correct when he made that statement? No; the statement is quite incorrect. I have seen him since, and he told me that he entirely misunderstood the question. He thought that he was merely asked what was the trade to Wee Waa town, not from it, and in saying 10 per cent. I think he would be about right, because, while there might be a little trade to Wee Waa, the trade from it would be very much more.
1072. You think the station-master must be mistaken in the evidence which he gave? Quite mistaken. He said himself that he did not intend to make a statement which would leave any such impression.
1073. The same remarks would apply to the stock traffic? Of course. If you remember, evidence was taken at Wee Waa which went to show that one station alone sent 62,000 sheep away from Boolcarrol station, and as only 634,000 sheep were trucked at Narrabri, that is almost 10 per cent. of the total stock traffic, and it leaves out the sheep sent in by the selectors and all other station-holders. Some 60,000 or 70,000 would be sent in from Mr. Richards' stations alone, as you have heard from him in his evidence.
1074. You think that the station-master was in error? The question was quite misunderstood by him. I know him to be a thoroughly reliable man, who would not intentionally waver in the slightest.
1075. I think you said that you favoured the extension of the line by way of Gurleigh Point to Moree? Gurleigh Point has a particularly bad crossing. I would say go as far west as you can.
1076. You would go west of the travelling stock route? A little to the west of it, meeting it at Millie.
1077. Is the crossing to which you refer the crossing that the Sectional Committee examined? I believe very close to it. The present bridge is within a very few hundred yards of where Mr. Quinn had his bridge, which stood about twenty years, and lasted right through the 1864 flood. We ourselves had a bridge near there afterwards.
1078. That is about the highest point on the river bank? The flood-marks of 1840, the greatest flood we ever had, were shown me by an old resident, and I was there at the time of the 1864 flood. I lived in Wee Waa and Boolcarrol, and travelled over the district continually. In 1857 there was a very severe flood, and we crossed about 500 bales of wool on ropes. There were floods in 1864, 1870, 1873, 1878-9, 1890, and 1893. Mr. Quinn, during the 1864 flood, had about 2,000 sheep on the land to which I refer, and did not lose one of them.
1079. *Chairman.*] On which side of the river? On the south side. I will speak about the other side presently.
1080. *Mr. Davies.*] If the Committee saw flood-marks on the trees 2 ft. 6 in. to 3 feet up very close to that spot there must have been some mistake? I do not know exactly where the Committee went. Straight out from the present bridge you would run into a lagoon, as I have already stated, which you would miss by keeping higher up or going lower down, and after that you would not need to go through any flooded ground on either side of the river.
1081. I am speaking of a place about a quarter of a mile down the river, nearer to Wee Waa? I cannot say where the Committee went, as I was not with them.
1082. If the Committee saw the wash and *débris* within a foot of the highest point there, what should you say? I should not dispute it. I can only say, and people still living can vouch for the truth of my statement—Mr. Quinn's sons are still living—that what I have told you is correct.
1083. If the Committee were taken to the spot you speak of as the best place for a crossing, and told by the residents there that it had been flooded, and, further, had seen the *débris* and wash for themselves within a few inches of the highest point, would you think of disputing the evidence? Certainly not, because I would value the Committee's opinion as much as my own. On the ground that I speak of—that is, towards Yarralbluey, there could be no wash or *débris*, as there never was a flood there.
1084. Do you recommend that the line should go as near Wee Waa as possible? Not in the least. Let the engineers be shown by the old residents what they consider the best crossing-place is, and let them judge.
1085. You would go as near the north-west as possible? I would go as far west as possible, so long as I was not likely to interfere with the Walgett connection.
1086. You would cross the river somewhere near the place you speak of? Yes.
1087. And you would then go on to Millie? I would go as near to Millie as I could. Perhaps you noticed that a little below Millie one bridge would span three creeks.
1088. Do you not, as a practical man, think that it would cost a great deal more to take the line along the route you suggest than to take it along the proposed route? Certainly not. It could not cost a penny a mile more. These estimates making it so much more were worked out when labour was 50 per cent. dearer. I understand that what is proposed at the present time is a line so cheap as to be almost an experiment, but the estimates for the other line were made ten or twelve years ago, and were made for more costly work.
1089. The estimate made about ten years ago was for over £500,000? So I have heard; as well as that the direct line would be £400 a mile cheaper, but the two estimates have not been estimated or compiled in the same way.
1090. *Chairman.*] I think you are confusing the statement made to the Committee some weeks ago by the Engineer-in-Chief for Railways? I am merely speaking of what I know. I did not hear the Engineer-in-Chief's statement.

1091. *Mr. Davies.*] The difference in cost between a line going along the travelling stock route and the proposed line would be about £400 a mile, and, as it is 15 miles longer than the other, it would be much more expensive to construct? I cannot see how there would be a difference in the cost, because the country is just the same. Navvies clearing tanks for me have charged exactly the same in one part of the district as in another. All earthwork throughout the district is the one rate.
1092. You have admitted that the country round Moree is particularly rich for agricultural and pastoral purposes? The whole district, except where there are scrubs, is good, whether you take the Gurleigh Point route or the "red" route.
1093. You favour the deviation because it would serve the settlers better than the direct route? Yes; and instead of being a losing line, as it is estimated that the "red" line will be, it would receive such a large traffic that it would be a good paying line at once.
1094. The railway at the present time gets all the stock and wool from the district at Narrabri? Yes; but if the line were taken *via* Millie to Moree it would have the profits of 20 or 30 miles of additional rail carriage on stock and wool from the western portion of the districts.
1095. It would get all that at the Moree end? You must recollect that the traffic which is talked about as converging at Moree from Queensland is not in fat stock, but in store stock, which goes to Muswellbrook, and would not use a railway.
1096. *Mr. Hoskins.*] What about the wool—is there a great deal of wool coming from Queensland? I think the Sectional Committee saw that the road which turns off at Boggy Creek is as little used as any. We did not see a dray upon it.
1097. *Mr. Davies.*] The Sectional Committee saw twenty-seven drays coming from Moree loaded with Queensland wool? That is twenty-seven drays; but I do not think that they would be sufficient to make the line pay. But at Wee Waa you had evidence of 100 drays loaded with wool passing in one day.
1098. I am talking of what we saw in one day—we saw wool coming in from the same direction on other drays? On all these matters it is far better to take the evidence of the agents. We (the Sectional Committee and myself) did not meet a wool team between Narrabri and Boggy Creek, and I did not see one when returning, while there were very few tracks. That is a distance of 60 odd miles. There was not one fresh track along the road.
1099. From a national standpoint, do you think it would be wise to take the shortest and most direct route to Moree, or would it be prudent to go 15 miles round, in order to convenience settlement, before coming to Moree? If Narrabri and Moree are to be connected without taking into consideration the settlement and nature of the country the straighter the line the better.
1100. *Mr. O'Sullivan.*] You are not an advocate of the Gurleigh Point route? That is because there is such a bad crossing at Gurleigh Point. Four creeks come nearly on top of one another there; but the engineers took no trouble to make inquiries, and surveyed right across. The water there rises very rapidly, and runs very swiftly.
1101. That route is 15 miles longer than the direct route? I understand that it is about that.
1102. You prefer a route nearer Wee Waa? A more westerly route; but I should not take the town of Wee Waa into consideration.
1103. You would go within a few miles of Wee Waa? I only spoke of Wee Waa because I was asked about a crossing-place.
1104. Would you prefer to take the crossing-place near Wee Waa? Yes.
1105. That would make the route about 5 miles longer than the Gurleigh Point route? I do not think it would.
1106. *Chairman.*] Wee Waa being $6\frac{1}{2}$ miles further to the west than the Gurleigh Point crossing, and your proposed crossing being $1\frac{1}{2}$ or 2 miles to the east of Wee Waa, the line you suggest would have to go at least 4 miles further west? It may at first sight appear so, but I do not think that it need be 4 miles longer.
1107. You propose to go due north to Moree? No; that is just what I do not propose to do. The route, as surveyed, makes several curves, and in parts, follows the travelling stock route, but instead of doing that I would go as direct as possible from Millie to Moree.
1108. *Mr. O'Sullivan.*] How much longer do you think your proposed line would be than the direct "red" route? I should think less than 17 miles longer.
1109. Looking at it from a national point of view, could not the money which the construction of that additional length would cost be more advantageously laid out in the construction of a branch line from Narrabri through Boolcarrol to Collarendabri? Would you go from the terminus or from the town of Narrabri?
1110. From the town? Then you would have to run right down the river bank to get the Wee Waa traffic, which you would lose if you went straight to Boolcarrol.
1111. Which would be the best thing to do in the national interest—to construct the line you suggest, and which would be 17 miles longer than the proposed line, or to construct the proposed line together with a branch line from Narrabri, going as far as you could towards Collarendabri? I cannot see that there need be any doubt on the subject. It is 30 miles to Boolcarrol, and if you constructed a branch line it would need a double staff of men for two lines who would only do the work of one line if taken more to the west.
1112. Your proposed line would not serve the Boolcarrol and Collarendabri district so well as the branch line I speak of? It would serve Boolcarrol as well, because it would be practically a straight line to it, and it would, as nearly as could be, go straight towards Collarendabri.
1113. Would not a line running out to Boolcarrol serve Wee Waa? Only partly so, as there is the south side of the river to consider.
1114. And a line running out towards Collarendabri, *via* Boolcarrol, would serve the Wee Waa district? It would serve the Wee Waa district to the north of the river, but not to the south of the river, because the people there would have to go about 12 miles to get to a station near Boolcarrol, and then have 30 miles of railway journey, or 42 miles altogether, while they could drive to Narrabri in 22 miles.
1115. Which is the more important—the Wee Waa traffic or the Collarendabri traffic? The traffic between Wee Waa and Collarendabri. The best portion of the district begins about Wee Waa and goes on to Collarendabri to the Queensland border, and into Queensland itself.
1116. Which, in your opinion, is the most important district? One acre in one part is as good as in another part.
1117. What is the volume of traffic? That would be shown by the figures I gave you.
1118. I want you to say which is the more important—the traffic from the Wee Waa district or the Collarendabri traffic? It depends upon what you embrace in the Wee Waa district. The district begins directly you cross the river, and extends through Collarendabri to the Queensland border.

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1119. I am talking of the country likely to be served by your proposed line, and also of the country likely to be served by a branch line from Narrabri towards Collareendabri? First of all let us take the line crossing near Gurleigh Point. That line going to Boolcarrol will take pretty well all the traffic on the north side of the river.

1120. I will put my question in another way;—if the line were taken along the route you suggest it would cost £80,000 more than if it were taken along the direct route;—in view of that fact, which would be the better for the State to do—to follow your route, or to follow the proposed route and expend the £80,000 so saved in making a line out towards Collareendabri? I should have to work it out. Taking the cost of a branch line at £2,000 a mile, you would be able to construct 40 miles for the £80,000; but while a line going towards Boolcarrol would serve the country to the north of the river, it would not serve the country south of the river. All the traffic from the country south of the river would go to Narrabri, because that would be 22 miles shorter.

1121. Which would be the best thing for the State to do? It is a very difficult thing to say. I should imagine that it would be best to make only one line as far as Boolcarrol.

1122. If the line you propose were constructed, it would run from Narrabri West out to Wee Waa, and then on to Moree, leaving the town of Narrabri out of the question altogether; that town has interests for which we must have some regard, and your line would avoid it altogether? Yes; it would be taken from Narrabri West.

1123. Do you think that we should be justified in injuring the town of Narrabri by taking the line out towards Wee Waa, when we could serve the traffic out towards Collareendabri by a branch line from Narrabri proper? I cannot see that Narrabri will be hurt any more than Maitland, Singleton, Muswellbrook, and Quirindi were hurt by extending the northern line. Whenever a railway passes through a town, and goes on further, the town must feel it to a certain extent. I may say, however, that when I owned a large amount of property in Narrabri, I advocated the line which I now advocate, and the people of Narrabri unanimously petitioned in favour of having the terminus of the line where it now is, in view of a possible extension in a north-westerly direction. Mr. Collins was one of those who signed and requested me to take the petition round for signature.

1124. *Mr. Humphery.*] In a report furnished to the Secretary for Public Works, it is stated that half the traffic on the extension from Narrabri to Moree will come from Moree;—can you express any opinion in regard to that statement? I cannot conceive it to be possible that half the traffic will come from Moree, because Moree is certainly not the centre of more than one-third of the district which contributes trade to Narrabri. No doubt a good deal could be taken to Moree in the shape of stores and goods; but I cannot conceive that half of the trade will come from there. The agents, however, could give you better information than I can.

1125. *Mr. Neild.*] You have been asked what is the character of the country about Millie—I want to ask you almost the same question in an opposite form;—does the “red” line possess any advantage in its security from floods over a line running nearer to Millie? No; certainly not.

1126. Is it a fact that the storm-water channels and creeks along the travelling stock route, and in the vicinity of Millie, are wider and more often flooded than the water channels and creeks on the “red” line? They are narrower, and they are not so much flooded.

1127. Then there would not be so much engineering work in making provision for the storm-waters on that line? There would be less, and it would not be so expensive.

1128. You have a large knowledge of this country? Yes.

1129. The answer you have just given is the result of your personal experience extending over a long period? Yes.

1130. If the Committee are informed that a line *via* Millie would be more expensive than the direct route, because extra provision would have to be made for storm-waters, that statement is inaccurate? Certainly, and I would specially call the Committee's attention to the fact that large and costly dams have been repeatedly washed away in all the creeks near where the “red” line crosses.

1131. You made reference to the scrub land lying between the “red” line and the ranges. Can you give the Committee any idea of the proportion it bears to the country generally? You mean, going back to the crests of the ranges; you would not stop at the foot of the hills. In that case, I should say that you might safely estimate them at about one third.

1132. About one third of the land lying between the “red” line route and the mountains would be scrub land, which you say cannot be cleared and rendered useful for occupation for less than £10 an acre? Yes; until you reach Nundi Creek.

1133. You passed a very severe stricture upon the proposed crossing in Narrabri? Yes.

1134. What is your objection to that crossing? I owned all the land between the Namoi and Narrabri Creek, through which the “red” line passes, for twenty years, and during that time I had my fences washed away twenty times. I have seen all but about 200 yards of that land inundated five or six times.

1135. Then it would be necessary, in order to avoid the floods, to construct very expensive viaducts there? Yes; to take the line out of the reach of the floods.

1136. You have seen your fences in the immediate vicinity of the proposed crossing washed away once a year, on an average for twenty years? I think I am a long way within bounds when I say that. I do not mean to say that there has been a flood every year, because we have had droughts, but sometimes they have been washed away four or five times in one year. There were floods in 1864, 1870, 1873, 1879, 1890, when little or no land was not under water along the “red” line between the river and the creek.

1137. Did the water remain upon the land for any length of time? From two or three days to a week on each occasion. The 1893 flood did not come so high, but the 1890 flood was higher, and in 1870 and 1873, the waters nearly met. In 1864 there was not an acre of land uncovered by the flood waters.

1138. Besides these floods the water has risen sufficiently to destroy the fences on many other occasions? More than twenty times.

1139. What depth of water was there at the crossing place during the floods which you have mentioned? Do you mean over the banks of the creek and river?

1140. How much was it over the ordinary summer level? In summer time, the river is sometimes dry.

1141. Take the depth of the water at the bank then? The bank of the creek and the bank of the river are of different levels. Over the river bank the water would be about 10 feet deep, while over the creek bank, it would be from 12 to 14 feet deep.

1142. What is the current in the river in times of flood? The river is not so rapid, but a great deal of timber comes down it. The creek is very rapid because it is more direct.

1143. Does much timber come down the creek? Not so much, but there is some. In constructing a bridge over the river it would be necessary to make a special provision for timber. In 1890 there were gangs

gangs of men watching both the river bridge and the creek bridge day and night. They had to cut away the hand bridge, part of the creek bridge, and to protect the end of the main bridge with bags of soil.

1144. The same troubles would threaten the railway bridge? Yes, because the site is only about 800 yards higher up the stream.

1145. You prefer to take the line west in order to serve the existing population of producers? Quite so.

1146. *Mr. Collins.*] You spoke just now of a petition which was got up at Narrabri;—are you aware that at the time it was prepared there was some talk of the line going on to Walgett? There was some talk of its going in a north-westerly direction, but I did not understand that it was determined to take it to Walgett or anywhere else. You and I always wanted it to be taken to Collareendabri.

1147. It was for that reason that the petition was got up, and not to prevent the railway from going to Narrabri? It was never intended to take the railway into Narrabri. There are one or two things which I think the members of the Committee have passed over, and which I should like to make clear. I should like to speak first with regard to the country on the north side of the river out to Boolcarrol from Wee Waa, which I have several times heard spoken of as dangerous and liable to flood. I lived on the Gundemaine run, on Boolcarrol, and on Tulladonna from 1856 to 1876, and during those years I frequently, generally twice a week at least, had occasion to travel between Boolcarrol and Wee Waa, but I was never inconvenienced except by the river. Sheep were kept on that country during the whole of the time, and not one hoof was ever lost. A fence which was erected in 1864 was not washed down by that flood, and another fence which was erected in 1868, and crosses the whole of this so-called flooded country, has never been washed down. I have also heard a good deal about the timber in this district, and I should like to say that for many years I was a timber-getter and contractor myself, but I never saw one narrow-leaved ironbark in Eckford's Scrub. You might get a few railway sleepers near to Killarney, but very few. Gurley Creek and Bumble Creek have been spoken of as very easy for bridging, but I have seen the water there on many occasions half a mile wide, and running like a mill-stream. Mr. Vickery, Mr. Charles Lloyd, Mr. John Donald McCansh, and Captain Smith can verify my words when I say that dams worth £30,000 have been washed away by those creeks. I have had the making and repairing of some of these dams. The Committee heard so much about the good timber on the south side of the river that I do not think it is worth while referring to the matter again. But the supply there for sleepers and other railway purposes is inexhaustible. Nor do I think you want to hear any evidence as to the nature of the road between Galathera and Millie. I owned Millie Station, and I used to ride over that road nearly every week, although you were told at Narrabri that it was almost impassable. Throughout upwards of thirty years' constant travelling over that route I never saw it to be so.

1148. *Chairman.*] Do you know of any better crossing within a few miles of Narrabri than the proposed crossing? That is a matter I would rather leave to the engineers. Of course you would not think of going as far back as the Broadwater. That is the only place on the Namoi that you can bridge with very high approaches on both sides.

1149. How far is it above Narrabri? Ten miles. The ridges come in on both sides and you could cross the river well out of reach of any flood, but the bridge would be a very expensive one. There was an idea once of taking the line there, but it was abandoned.

1150. Is it not a fact that your services and local knowledge have been availed of by the officers engaged in making investigations in connection with railway proposals? I do not think so on any occasion, and most assuredly not on the present. I should have advised Mr. Jamieson, who surveyed Gurleigh Point route, to go lower down the river, but he had not any option. If you ask me which is the best crossing-place I will tell you, as I think it must have been apparent to the Committee. I speak of the present road crossing from the railway station into the town of Narrabri, which is higher and less liable to floods than the route as by the proposed "red" line.

1151. Have you taken any levels with instruments? I take my levels by the floods. Levels taken with instruments cannot always be relied on. For instance, while my house at Tibbereedah by levels is higher by 7 feet than Cooma, the flood of 1864 did not reach Cooma, but was 5 feet in my house, showing a discrepancy of 12 feet in 3 miles.

1152. A flood is affected by local disturbances? Yes, and that is why we are often able to cross a water-course which a surveyor's instrument would say was uncrossable.

1153. The present road crossing from Narrabri terminus to Narrabri town is a better one than that by the "red" line? Undoubtedly so.

Francis William Bacon, Esq., grazier, sworn, and examined:—

1154. *Chairman.*] What is your occupation? I am a grazier.

1155. Whereabouts is your holding? At Dumble, Goodooga.

1156. Where is Goodooga? About 85 miles from Walgett.

1157. Higher up the river? No; it is on the Bokhara, a tributary of the Balloone, and is near the Queensland border.

1158. North-west from Walgett? Yes.

1159. Where do you send your wool and fat stock at present? Some of the stock to Dubbo and some to Narrabri.

1160. Some to Dubbo, *via* Walgett, and which way do you send to Narrabri? *Via* Collareendabri.

1161. How much do you send to Dubbo, and how much do you send to Narrabri? Last year I sent a greater quantity to Narrabri and Gunnedah, because we had a better market there owing to the operations of the Aberdeen Freezing Company.

1162. Where does most of your wool go? We have been in the habit of sending our wool to Bourke, because we have had the river during the last two or three years, but this year the Carriers' Union at Narrabri broke up, and the rates of carriage were so much lower that it was cheaper to send to Narrabri.

1163. If the Carriers' Union got into power again you might again send down the river? Yes.

1164. Is this the first season that you have sent to Narrabri? No; we always send to Narrabri. We used to send to Gunnedah twelve years ago. It was better to send there until the railway got to Bourke. The Darling river, which has been running for the last few years, has helped us.

1165. Do you put any embargo on the carriers as to the route which they shall take? No; they can take whichever route suits them best.

1166. All you say is, "Take the wool from our station to Narrabri?" By the most practical route.

1167. You leave that for them to decide; you do not lay down any hard and fast rule? No.

1168. Can you tell us what road they go? *Via* Collareendabri and Boolcarrol principally.

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1169. Was the season a wet or a dry one? It was a good season. There was plenty of grass along the road.
1170. Are there times when that road is somewhat impracticable, owing to the wet weather? Yes.
1171. Do they then go *via* Millie? Yes; but if the road was impracticable about Collarendabri, it would also be impracticable about Boolcarrol. They would not be able to cross the warrambools.
1172. Are there times when they can travel from Collarendabri to Millie when they cannot travel to Boolcarrol? No; there is a high ridge all the way to Boolcarrol, which you can travel at any time and in any flood.
- 1173-4. The difficulties you would have to contend with would be in and about Collarendabri? Yes.
1175. The greater part of the wool that went to Narrabri went *via* Collarendabri and Boolcarrol? Yes.
1176. You do not know that any of it went *via* Wee Waa? No; I do not think any of it did. I do not wish, however, to speak particularly about our own clip.
1177. You have been sending your fat stock of late to Aberdeen? Yes.
1178. You truck them at Narrabri? Yes.
1179. Invariably? No; sometimes it has suited us to travel on to Gunnedah.
1180. Because the feed has been better? Yes; and to save the railway expenses.
1181. If the feed is good you will not truck at Narrabri but go on to Boggabri, or even further? Yes.
1182. On the other hand, if feed is scarce, you truck at Narrabri? Yes.
1183. Which route does the stock take to Narrabri? They go across the 60-mile track to Collarendabri, and then through Boolcarrol to Narrabri.
1184. Do you know if that is the usual route for sheep to take going from Collarendabri to Narrabri? That is the invariable route.
1185. If it has been asserted that a great part of the stock travelling from Narrabri to Collarendabri go *via* Millie, you think that is a mistake? A large number go that way. The route taken depends upon the state of the road. If a great many sheep have already travelled over the road, and feed is scarce, stock coming after go the other way. Then, too, the drovers may have a reason for delaying.
1186. Do your neighbours use the same route as you use? Yes; the neighbours above us. The stock from the Peel River Company's station comes that way.
1187. Your place is near Bokhara? Yes; Bokhara is Goodooga.
1188. Can you tell us where the people of Angledool send their wool and stock to? Invariably to Narrabri.
1189. By the route you have just described? Yes; it is 30 miles shorter to go through Collarendabri and Boolcarrol from Narrabri than to go through Walgett; and then it is a better road from Goodooga. We reckon the distance as 200 miles and 230 miles.
1190. It will depend upon the Carriers' Union and the state of the river whether you continue to send your wool to Narrabri or take it to Bourke? I am speaking for myself. I live on the dividing line, and it is just a question which is the cheapest way for us to send our produce. Our neighbours out towards Angledool and Curriwillingham invariably send to Narrabri.
1191. The neighbours to the north and north-east of you invariably send to Narrabri? Yes.
1192. But you and your neighbours to the south-east go to the river? Yes.
1193. You know the proposal before the Committee? Yes.
1194. I judge from what you say that you favour the construction of a line to the west of the proposed line? Yes; I think the line should come something like 16 miles more north-west and then branch east to Moree. The proposed route is too much under the mountains, and would not intercept any of the north-western traffic.
1195. The western and north-western traffic would be intercepted about Boolcarrol? Yes.
1196. So that it would only travel 15 or 20 miles along the railway? Yes.
1197. Do you think the country north of Moree should be handicapped with 15 or 16 miles of additional railway carriage in order that the traffic to the north-west might be served? Yes; because the country to the north-west is five or six times as large, and very rich, fattening country. A very large proportion of the Queensland wool comes down the Moonie, past Mogul, to Collarendabri. The Australian Pastoral Company have 1,000,000 sheep upon a station lying between St. George and the border, and all that wool comes into Collarendabri.
1198. Is it not a fact that a large part of that traffic comes in through Millie? It all depends upon which the carriers think the best route.
1199. If they got to Millie, and were within 12 miles of the proposed line, would they not be served by it? If they got to Millie they would not go to the proposed line to discharge their wool—they would go on to Narrabri, in order to get the back loading.
1200. *Mr. Dawson.*] They would not go at a right angle to get to the line? No; because by so doing they would not get any back loading.
1201. *Chairman.*] Has the wool trade into this Colony been affected by the duties lately imposed by the Queensland Government? Only to a slight extent. I understand that the Australian Pastoral Company paid the duty (£2 10s.) because the carriers offered such exceptionally good terms.
1202. Do you know anything of the country to the north, north-east, and north-west of Moree? Yes.
1203. You assert that the country to the west of the proposed line is larger in area and more productive than the country to the north of Moree? In area it is ten or twenty times as large. About 30 or 40 miles from Moree you get into mountainous country. That country is not fattening.
1204. How long is it since you were at Moree? Two or three years. I have often been there.
1205. How long is it since you have been north of Moree? I have been towards Talmar.
1206. Have you been to Goondiwindi? Yes. The country there is not good, fattening country.
1207. Have you been to Kunopia? No; but that is not good country. There is only a cattle station there.
1208. You have frequently been to Mungindi? I have been there. That is inferior country.
1209. Is it a fact that produce from there goes *via* Moree to Narrabri? I believe so, but the trade is inconsiderable. The country is sandy and scrubby, like that between Narrabri and Burraddeen, with only a few scrub cattle and wild dogs on it.
1210. It is similar to that on the southern bank of the Namoi, about Pilliga? Yes; the good country lies west of Moonie. The Australian Pastoral Company own a large extent of country there, which they have stocked with sheep, but it is not sheep country, properly so called.
1211. Is not the number of sheep that a country will carry a pretty good criterion as to its value? There is no better criterion.
1212. You think it is quite right that the people of Moree and of the district west of it should have to bear the expense of 15 miles of additional carriage so that the western country may be better served? Yes.

1213. Do you think that if the line were carried in the direction you suggest it would serve the trade of the northern and western districts, or would those districts require more railways in the near future? I think that in future the line would have to be extended to some point on the Barwoon—say, Collarendabri or Mogil.

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1214. Supposing the difference between the cost of the proposed line and a line such as you would suggest would pay for 25 miles or 30 miles of line out towards Collarendabri, *via* Boolcarrol, would not it suit the western country better than the proposed line? Of course, you might ask me if a line 50 miles further would not suit us better. So it would; but we are thankful for small mercies, and 10 or 15 miles is an advantage. We prefer the bird in hand to the bird in the bush.

1215. If the route you suggest were followed you would only gain the advantage of 15 miles of railway carriage, whereas a branch line would give you 25 miles of railway carriage? Yes.

1216. You say that a line to serve that country should go out in the direction of Collarendabri along the high ridge from Boolcarrol? Yes; but I would not make any suggestion as to a river-crossing.

1217. You leave that to the engineers? Yes. I should say the best place is somewhere about Narrabri. We could then go 14 or 15 miles down the river and branch out.

1218. Supposing it was thought desirable to have a branch at Collarendabri, would it not be better to take that branch off from the main line at a point about 5 miles from Narrabri? Then the western people would be handicapped by having to go round on the Moree line.

1219. You object to 5 miles unnecessary railway carriage yourself, while you think the people of Moree should have 15 miles unnecessary railway carriage to pay for? I am thinking of the greatest good to the greatest number. The district which a line such as I suggest would tap is the richest and the largest fattening district in the Colony.

TUESDAY, 12 DECEMBER, 1893.

Present:—

JACOB GARRARD, Esq. (CHAIRMAN).

The Hon. WILLIAM HENRY SUTTOR.

The Hon. JAMES HOSKINS.

The Hon. FREDERICK THOMAS HUMPHERY.

The Hon. JOHN DAVIES, C.M.G.

The Hon. WILLIAM JOSEPH TRICKETT.

WILLIAM CHANDOS WALL, Esq.

WILLIAM McCOURT, Esq.

JOHN CASH NEILD, Esq.

EDWARD WILLIAM O'SULLIVAN, Esq.

CHARLES COLLENS, Esq.

HENRY DAWSON, Esq.

The Committee further considered the proposed Railway from Narrabri to Moree.

Francis William Bacon, Esq., grazier, Goodooga, sworn, and further examined:—

1220. *Mr. O'Sullivan.*] I understand from your evidence that you are in favour of this line being taken as far west as possible? Yes.

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1221. You are aware that to carry it by any route towards Wee Waa would considerably add to its cost? That is because the line would be longer.

1222. It is estimated that it would cost at least £80,000 more to take the line that way; a line *via* Gurleigh Point would be 15 miles longer than a direct line, while a line by way of Wee Waa would be about 20 miles longer? Would the 15 or 20 additional miles cost £80,000?

1223. It is calculated that 20 additional miles will add about £80,000 to the cost of the railway? A line out west would not cost more per mile than the direct route.

1224. We are told that such a line would cost £300 a mile more because the country is more difficult? I do not think it would cost as much. The proposed line would go through a lot of very thick oak scrub—belar scrub. There are several patches of very thick belar scrub, and the clearing and earthworks through that scrub would be expensive.

1225. You are a practical grazier and stock and station agent? Fifteen years ago I was a stock and station agent at Gunnedah, and also a carrying agent.

1226. Would it be more advantageous to the State and to the district to spend £80,000 in constructing a line from some point near Narrabri out towards Collarendabri than to spend it upon the Wee Waa route? £80,000 would probably pay for 30 or 40 miles of line, but you would have to bridge the river twice unless you started from the 5-mile peg, as the Chairman has suggested. In my opinion two-thirds of the traffic to Narrabri comes from the western district and Queensland, and one-third from Moree.

1227. Supposing you branch off from the proposed line to somewhere north of Narrabri? Then there would be 5 miles of extra haulage.

1228. Five miles of extra haulage for the western people; but if your proposal were adopted there would be from 15 to 20 miles extra haulage for the northern people? Comparatively little trade would go to Moree proper.

1229. Putting aside these 5 miles additional haulage, would it not be more advantageous for the State to run a branch line out from the 5-mile peg on the direct route towards Collarendabri than to follow the Wee Waa route? It certainly would be better to be 40 miles nearer Collarendabri than to be only 15 or 20, if the line could be taken there for the same money.

1230. If you were asked to choose between a direct line to Moree, with a branch to Collarendabri, and the circular route through Wee Waa, which would you choose? I should certainly choose your proposal, if it would not be throwing up the substance in the endeavour to grasp the shadow. I regard the proposed route as bad in many ways. It runs right under the Nandewar Ranges, where there is no settlement, and where there is not likely to be any. No traffic will come to it at any intermediate point until you reach Millie, a distance of 45 or 50 miles, because the stock route runs almost parallel to the line, and the carriers will prefer to go to Narrabri, the terminal station, so that they may get back-loading. Then, too, the creeks near their heads rush down very rapidly, and would, I think, occasion a good many washaways.

1231. *Mr. Davies.*] How many miles are you from the Narrabri station? About 200 miles *via* Collarendabri; but in spite of the fact that the freight on wool is 7s. a ton more from Narrabri to Sydney than it

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- it is from Bourke to Sydney, it pays us better to send to Narrabri, because the carriage by road is less at present. The rate from Narrabri to Sydney is £4 7s. a ton for a distance of 350 miles, while from Bourke, a distance of 500 miles, it is only £4 a ton.
1232. How many miles would you be from the nearest point on the proposed line? I do not think we should strike it at any point nearer than Narrabri. We might save 10 or 15 miles by coming in at Millie; but Millie is too high up. The carriers would not go from Collareendabri to Millie except for some exceptional reason, such as the better character of the feed. As a rule they go straight to Narrabri.
1233. You are 190 miles from Millie? Yes.
1234. A distance of 10 miles would not count with you? No; the carriers would not go that way.
1235. At present all your wool and fat sheep go to Narrabri? Nearly all. Occasionally we send to Dubbo, and we have even sent sheep to Bourke, to be boiled down.
1236. If the proposed line were constructed, you would still send to Narrabri? Yes; the proposed line would be of no service to us or to the people of the western districts. It would be better if it went along the stock route. If the line crossed the river at Narrabri, and then went 8 or 10 miles further west, it would be of more service to us.
1237. If the line were taken along the travelling stock route, how far would it be from your station? I suppose that would bring it 10 or 15 miles nearer.
1238. That would be of no advantage to you? Not very much.
1239. You would continue to send to Narrabri even if the line were taken along the stock route? I think so. The carriers would go to the terminal station for the same price, because, even if they unloaded the wool at a side station, they would have to go on to the terminal station to get back-loading.
1240. So that neither the direct route nor the travelling stock route would be of any service to you? Practically none. In either case the line would be 175 or 180 miles away from us.
1241. The only line that would be of service to you would be an altogether independent line, leading away towards Mungundi? An alternative line running 15 or 20 miles towards Wee Waa would be of service to us, as the extension of a line which would ultimately go to Collareendabri.
1242. What would you regard as a reasonable railway service for a station such as yours? A reasonable distance to be from the railway?
1243. Yes? If we were within 80 or 100 miles of a railway we should consider that we were fairly well off.
1244. You would send your wool and fat stock to a station within 80 or 100 miles of you? Yes, of course.
1245. How far do you think the proposed line is from the mountains at the nearest point? The mountains are not shown on the map before the Committee; but I know that at Killarney they are very close.
1246. How near are they? I should think that at Killarney they must be within 4 or 5 miles of the line.
1247. Would you be surprised to learn that they are only within 15 or 20 miles of the line? I certainly should.
1248. You stated that there was not likely to be any settlement along the line to the east? No; the line goes through large estates there, and the best part of the land has been purchased.
1249. Is not a great part of the land included in the conditional leaseholds which will fall in next year? That land is no good. The best land was purchased before the 1884 Act was passed.
1250. Very nearly every person examined by the Sectional Committee stated that he would take up that land immediately it was available. Those were men who already held land in the district—selectors? I know that there cannot be any great quantity of leasehold land there. On Gurley and Edgeroi there is a good deal of freehold land; on Gurley there are over 100,000 acres of freehold land. There is a good deal of scrub land.
1251. You have no idea as to the area of land that will be available next year when the leaseholds fall in? No; I have not gone into the matter, but I know from the amount of settlement that has taken place in the past that there cannot be a large area of good land available. Of course the construction of the railway would cause people to take up land which under other circumstances they would not look at.
1252. Then the construction of the railway will be the means of creating settlement? Yes; people will take up even inferior land when there is a railway.
1253. Do you regard the land through which this line would pass as inferior? Yes.
1254. Is it not as good as any that can be found in the district? The line passes through a great deal of freehold land—land which is not the property of the State—that is good, and will increase the value of the four or five large estates which it traverses.
1255. According to the Land Office map, the line will serve a large quantity of land which is not now occupied? It will go through Eckford's forest, but that is not good land. It is heavily timbered, and is comprised in a forest reserve.
1256. Is not Eckford's land well watered? No, except for the tanks and dams which he has made. It is a dry country there.
1257. But the land is very good? Eckford's freehold land is very good.
1258. But does he not lease some good land? No; the good land was secured years and years ago.
1259. You are of opinion that the land through which the line passes is not of much value? No; and my opinion is confirmed by a reference to the Lands Office map before the Committee.
1260. If the line were taken more to the west, as you suggest, would it not still pass through alienated country? Not to so great an extent, because the settlement there is of a later date.
1261. Do you know that country? Yes; it is open plain country—Boolecarrol is splendid country. There is not a better run in Australia than that. I do not, however, think that there is any great point about that, because not very much land would be available.
1262. Do you think that the Crown land available for settlement would be largely increased in value by the construction of a line either along the direct route or along the route suggested by you? Undoubtedly it would. I would rather pay 1s. an acre for land nearer a railway than 2d. an acre for land where I live. It cost us, if we send through Bourke, £9 a ton for our wool, and if we could get it down for £4 a ton, that would make a saving of £1,000 on a clip of 200 tons, which would pay a greatly increased rent.
1263. What is the present value of the land through which the railway passes, and what would its value be if the railway were constructed? I do not think there would be very much difference in the value

value of Crown land. The only block of Crown land available is Eckford's reserve, which is within a reasonable distance of Narrabri now. Of course the construction of the line would add to its value; but I cannot say that it would make very much difference to it. The quality of the land being inferior, there would have to be a railway constructed before the people would take it up. The only reason that it has been left so long is that it is no good. Every bit of good land has been already taken up.

1263½. The other day we saw lots of good land that will be available? I am very much astonished to hear it.

1264. If the railway were taken more in a north-westerly direction, would it increase the value of the land through which it passed? Its construction would certainly justify the Government in charging higher rents.

1265. I gather from your evidence, that you are entirely opposed to the direct route? Entirely.

1266. Notwithstanding, that it can be constructed as cheaply as £2,500 a mile, you think it would not be prudent to make it? I think a line can be made just as cheaply, and indeed, more cheaply by keeping further to the west. In my opinion, the cost of clearing the scrub and making earthworks will be much greater on the proposed line. The Deniliquin-Moama railway only cost £2,500 or £2,600 a mile, and has been running seventeen or eighteen years. That line has paid good dividends, though there is not nearly so much traffic there as there would be on the proposed line. There they carry about 30,000 bales of wool a year, and this year 70,000 bales of wool have already been sent from Narrabri.

1267. Is not the country better for the construction of a railway? It is better than the country on the proposed route, but not better than the country on the stock route. The Deniliquin country is a dead level, while this is rolling downs country; but I do not think there is much difference.

1268. The Deniliquin country is not so rotten as this? I do not know; I have been often bogged in the plains there.

1269. Could you make an ordinary macadamised road half a chain wide through this country for £2,400? I am not sufficiently up in road-making to be able to say.

1270. *Mr. Hoskins.*] Is it your opinion that the land traversed by the proposed line is not equal in quality to the land further to the west? Decidedly.

1271. A witness has been examined before the Committee who lived in the district forty years, and who stated that the land on the proposed route is similar to that further west? I am sure that it is not. You have only to look at the map to see how little Crown land is left on the western route. The only patch of Crown land is timbered land.

1272. Your only criterion of the value of land is the extent to which it has been alienated? That is a very good criterion. That land was taken up in the free selecting days, when the whole of the runs were thrown open. I admit that the freehold land on the proposed route is similar in quality to that further west; we have only to look at the map to see that the bulk of the land on the proposed route has been sold.

1273. You said, in reply to Mr. O'Sullivan, that no settlement had taken place on the sides of the Nandewar range, and that none was likely to take place there? Not very much settlement has taken place in the past, because the leaseholders bought the best land years ago, that is, the land near the roads and the creek frontages. Wheat-growing has never been taken up to any extent out there, and the people who have gone in for sheep-farming have naturally taken the best country, that is, the plain land with the richest grass. They will not take up scrub-land.

1274. Do you not think that if the proposed line was made, the land on the slopes of the Nandewar range would be taken up? I think that it would be taken up in course of time, as land got scarce. It is inferior land.

1275. In what way? It is stony, rocky, and barren. Of course, there are patches of very rich land where the *débris* has been washed down from the hills.

1276. That land has not been taken up? I cannot say that altogether. It does not look by the map as if there was very much land available. In my opinion the patches marked Crown lands are scrub. I know that there is a great deal of scrub at Pycannah.

1277. If land in the vicinity of a railway were scrubby would that prevent people from using it? No; people will take up any land near a railway. Scrub land on the Murray, which people would not look at twenty years ago, is now eagerly taken up. A railway will cause inferior land, which otherwise would not be taken up, to be used.

1278. As a great deal of land to the west of the proposed line has been purchased and forms part of large estates, does it not appear to you that the land which has been left in the vicinity of the line, even though it is scrubby land, may be taken up? Yes; and I think it would be if a railway were constructed.

1279. *Mr. Neild.*] With reference to the land lying east of the proposed route, have you any knowledge of it? I could not say yes or no to that question. I have been through those runs but I have not seen the proposed line marked out on the ground.

1280. Is there much scrub land in that locality, within 20 miles of the range, on the westerly side of it? There are patches of scrub land at intervals. I know that there is a good deal of scrub on Dobikin.

1281. That land has been described by a preceding witness as constituting a third of the whole area lying between the proposed line and the range;—do you think it is as much as that? I think so.

1282. Would it be expensive to clear such land? Yes; because most of it is heavily covered with belar.

1283. At that rate the land to the east of the line would not be as valuable as land to the west of it, where there is less scrub? No.

1284. It would not be so productive at the same expenditure? No.

1285. Would it pay to clear it for pastoral purposes? I do not think it would. It might pay to ring-bark it if one had a long lease. Belar dies very quickly, and grows on good land.

1286. Have you a knowledge of the effect of rainfall upon the country which the railway will serve? Yes.

1287-8. In your opinion would it be necessary to make more ample provision for storm waters along the travelling stock route or the Gurlcigh Point route than along the direct route? I think there would be most risk of washaways on the direct route, because, near to the range, the water would come down with a greater rush.

1289. You think that railway works on the direct route would run the greatest risk of destruction? Yes. I have seen the same thing at Gunnedah,—the line from Gunnedah to Breeza runs along under the range, and it has been washed away several times.

1290.

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1290. On the plains the water is not so rapid? No; it spreads out more.
1291. Is there anything that would lead you to suppose that the cost of construction would be more per mile on the western route than on the direct route? Certainly not. I think the western route would be a shade cheaper than the other route.
1292. If it has been stated that the western route would cost £300 or £400 a mile more than the other route, that evidence is against your knowledge and experience of the country? Certainly.
1293. Are you aware that it is proposed to put only 3 inches of ballast under the sleepers? No.
1294. You know the size to which railway ballast is usually broken—2½ to 3 inches, is it not? Yes.
1295. So there would be the depth of one stone under the sleepers? Yes.
1296. Do you think that that would be sufficient on the black soil? No, I do not.
1297. Of course, the soil will be banked up more or less, but you still think that more than 3 inches of ballast will be required to prevent the sleepers from subsiding? I do.
1298. Would the water be likely to undermine the embankments, and cause them to liquify, so to speak? No; I do not think so. That black soil is very tough stuff.
1299. It is not likely to dissolve? I do not think so.
1300. You are aware that accidents have happened on our railways through the action of water on soils of a pipeclay character? Yes.
1301. But you do not think there is much risk with black soil? I do not.
1302. Do you know anything of the proposed new crossing at Narrabri? No, I do not. I know where the bridges are.
1303. You could not say if the proposed site was liable to be greatly flooded? No; that is a matter I cannot speak about.
1304. You are in favour of a line to the west, because it would serve a large existing settlement, and would probably serve a larger future settlement than the direct line? Yes; I should like to emphasise the point that such a line would also serve the great Queensland trade. I mentioned the other day that the Australian Pastoral Company owned 1,000,000 sheep. The Queensland Government are making tremendous efforts to get that trade, and have put a tax of £2 10s. upon all wool exported into New South Wales, and the company are, therefore, going to erect sheds on our side of the Border, and shear their sheep there.
1305. A duty is not imposed on wool on the sheep's back? No. Their other sheep will be sheared in Queensland, but the wool will be sent into New South Wales in order to take advantage of the cheaper carriage and the better market.
1306. Does that company sell any of its wool in the colonies? No; but I believe that they contemplate doing so.
1307. I suppose there would be a better market in Sydney than in Brisbane? There is no market in Brisbane.
1308. The whole of the wool sold in the colonies for foreign shipment is sold in Sydney or in Melbourne? Yes.
1309. *Mr. Hoskins.*] And in Adelaide? Yes.
1310. *Mr. Neild.*] But that is not much? No; only South Australian wool is sold there. Queensland wool goes to Sydney or to Melbourne.
1311. At one time wool was sold in Newcastle? Yes; it was tried for a season or two, but buyers would not attend.
1312. The supply was not large enough? No.
1313. The foreign buyers coming here find it necessary to centre their operations as much as possible? Yes.
1314. Is there any prospect of a market being opened in Brisbane for wool for foreign shipment? There is no doubt that there will be ultimately.
1315. But you do not think there is likely to be a market there for some time to come? No.
1316. The time is not sufficiently near to be worth taking into consideration in connection with the proposal before us? I do not think it is; but what I wish to draw attention to is the fact that the company to which I have referred pay the duty in order to send the wool to New South Wales, and take advantage of the cheaper carriage.
1317. Has any of the Australian Pastoral Company's wool gone to Melbourne? They have not sold any of their wool either in Melbourne or in Sydney. It has all been shipped home.
1318. From Sydney, or from Newcastle? Probably from Newcastle as it went to London; but I cannot say positively. Then, again, a great many of the people in the northern districts get their supplies from Maitland.
1319. From the Maitland houses? Yes.
1320. How far would that trade extend? Right up to St. George. When I was a carrying agent in Gunnedah we frequently sent up large quantities of supplies to Fisher's station and to Munro's station; in fact, right up to Boomba, which surrounds the town of St. George.
1321. Was that trade carried on prior to the extension of the Queensland line, or after it? Not entirely. The Australian Pastoral Company have during the last few years got the bulk of their supplies *via* Narrabri.
1322. If the line were taken westward from Narrabri to Moree, would the extra length of, say, 15 miles, prejudicially affect that trade? Oh, no. No doubt the Queensland Commissioners will make another effort next year to secure it. That trade, however, does not come to Moree.
1323. Where does it come to—to Millie? Mainly through Boolcarroi, and in some cases through Millie. It mostly comes down the river to Mogul.
1324. And the further the line is taken west, the more the trade will be inconvenienced? Yes.
1325. Moree is not a factor at all then? No; it is quite out of it.
1326. You would prefer the Gurleigh Point route to the travelling stock route? Yes.
1327. You would cross the Namoi as far west from Narrabri as possible; that is, within due limits? That is a matter for the engineers to decide.
1328. But for the convenience of the trade of the district, you would like to cross the Namoi as far west of Narrabri as possible? It would not matter; wherever the most suitable place was.
1329. But, still you want the line to run fairly west from Narrabri for some distance? Yes.
1330. As a matter of fact, you are less interested in Moree as a railway centre than you are in a line of railway running west of Narrabri? Yes; Moree would be of no use to that part of the country at all; it would be no use to any of the country lying west of Mungindi.
- 1331.

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1331. Your interest in the railway practically ceases within a few miles of Narrabri; you want the line to go as far as possible to the west—the further to the west, within about 40 miles, the better? Yes.
1332. If a line were taken to Walgett it would suit you better than a line from Moree? Yes.
1333. You advocate a westerly extension from Narrabri, rather than a northerly one? Yes.
1334. *Mr. Wall.*] I presume you regard the proposed line as a permanent one? Yes.
1335. On what part of the Bokhara is your station situated? Just where the Birrie joins it very near to the border.
1336. How far is your station from Walgett? From 70 to 80 miles.
1337. You are 50 or 60 miles from Brewarrina? Seventy-five miles from Brewarrina.
1338. How far is your station above Tallywalka? Forty-five miles.
1339. What distance is it from Moree? One hundred and eighty or 190 miles. It is very nearly as far from Moree as from Narrabri.
1340. Since you are 75 miles from Walgett you would be 100 miles nearer that town than you would be from the proposed line, even if a deviation of 15 miles were made? Yes.
1341. In that case an extension of the line to Walgett would serve you better than a deviation on the proposed line? Yes, it would serve that particular part of the country better; but I am speaking very little in my own individual interest. Our station is right on the border, and this line would not be sufficiently near us to be of any great service.
1342. Do you regard the overflow of the Balloone as a very superior pastoral country? Yes; some of the best land in the country is there.
1343. That country would not be served by the proposed railway if the line were taken to Walgett? No; that is, the country within 30 or 40 miles of us.
1344. If a line were taken from Coonamble to Walgett, or from Bourke to Brewarrina, it would serve you better than the proposed line? Yes; but it would not serve the country round Collarendabri and Mogul.
1345. And Angledool? Yes.
1346. But that country would be better served by a line to Walgett than by a line to Moree? Yes; that is, the country on the west of Collarendabri.
1347. You are under the impression that a branch line would serve the district better than a deviation of the proposed line? Yes; because I anticipate that £80,000 would pay for the construction of 30 or 40 miles of railway, which would suit us better than only 15 miles.
1348. But the working expenses of the proposed line are estimated at £7,000 per annum, and a branch line would mean increased working expenses? Yes.
1349. *Mr. Dawson.*] You consider that if the line were taken *via* Gurleigh Point, or out towards Wee Waa, it would form part of the main line to Walgett? Yes; but that is a point I have not brought forward at all. Such a line would serve the country between Walgett and Wee Waa, and would be so much of the Collarendabri line made.
1350. What traffic in wool and fat stock would there be on the westerly route as compared with the traffic on the proposed route? I think that two-thirds of the traffic comes from the west and north-west as against one-third from Moree. The country served by Moree is comparatively small.
1351. *Chairman.*] What proportion of the traffic from the west and north-west would use any part of the line from Narrabri to Moree? I do not think that it would go to the proposed line, which would be miles out of its way.
1352. *Mr. Dawson.*] What area of country, and what quantity of stock in the Walgett district would be benefited by a line going in a north-westerly direction from Narrabri? I should say there were 2,200,000 sheep in that district, and 1,500,000 would use the line, though, of course, if the rivers were in flood, and the steamers could come up to Walgett and Collarendabri, as they have done, the wool would go that way, but the rivers cannot be depended upon.
1353. Then a little over two-thirds of the sheep in the northern district would come to the proposed line? Yes.
1354. *Mr. Collins.*] Is there much settlement between Wee Waa and Walgett on the south side of the river? A considerable lot.
1355. What sort of country is that? There is a great deal of inferior country from Wee Waa to Pilliga.
1356. Is there much settlement there? Not a great deal. The country there is mostly forest country.
1357. Then a line from Pilliga to Wee Waa would not assist settlement much? No. There is a great deal of inferior land there which was abandoned because of the heavy rentals, but which would be taken up again if the line were constructed.
1358. If land were not taken up, there would be no settlement for a railway to serve? There is not a great deal of what you might call small settlement, but all the leasehold areas round Walgett have been taken up within the last two or three years.
1359. Do you know that the resumed areas on all the runs between Wee Waa and Pilliga have been thrown up? I should not be surprised to hear that the leaseholds had been thrown up.
1360. Consequently they would not assist the line very much if it went to Wee Waa? That is only a matter of 20 or 30 miles; but if this inferior land were offered at 4s. or 5s. a square mile, it would be taken up in improvement leases.
1361. It would have to be taken up in large areas? Yes; areas of 2,560 acres.
1362. If it were cut up into 10,000-acre blocks, there would not be much settlement? I think there would be. That country would grow wool if it were ringbarked and cleared.
1363. Would there be fifty 10,000-acre blocks between Pilliga and Wee Waa? Yes; there are more than 500,000 acres there.
1364. At present there is no settlement of any account between Pilliga and Wee Waa? No; because the country is inferior.
1365. Are you aware that stations like Goangra send their wool to Walgett when the river is up? I never heard of the Goangra people sending their wool to Walgett, but I have no doubt they would do so.
1366. If the rivers were navigable they would;—if you lived there where would you send your wool? I would send it by whichever was the cheapest route.
1367. If the wool from Goangra and Euroka went by the river, there would not be much to send on the line from Wee Waa to Pilliga? But Euroka is altogether out of the question; you should take stations like Yarraldool.

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1368. That is on the north side of the river? Yes. The wool would go by the river.
1369. Do you know the country up towards Boolcarrol? Yes.
1370. Have you ever been there when the river was in fresh, or when there was a flood? I have seen a pretty fair flood.
1371. Which would be the best place for the railway to cross? I could not give you an opinion on that subject, because I never looked at the place with the idea of finding out.
1372. Was there a very high flood when you were there? Just an ordinary fresh. The banks there are very high.
1373. Would the country between Boolcarrol and Wee Waa be flooded? I never saw it flooded, but it looked as if it might be. The whole of the Namoi country is flooded occasionally.
1374. All the country within a certain distance of the river would be likely to be flooded? Yes.
1375. It would be difficult to construct a railway through that country? Yes; but there is not much flooded country above Wee Waa; the river breaks out down below. It is all high red ground.
1376. You said there was a large quantity of belar scrub on this route? Yes.
1377. Do you know that from your own observation? Yes; I have been at Edgeroi, and at Eckford's place, and also at Dobikin, buying sheep.
1378. Have you been all along the surveyed route? No; I do not know where it is.
1379. You do not know whether it goes through scrub or not? No; not having seen the route marked out; but from the way the scrub runs out in the range it must cut through it.
1380. Do you know through how much scrub land the line runs? No; I could not say what the area is.
1381. *Mr. Dumphery.*] I did not quite gather from your evidence about the traffic of the railway whether you intended the Committee to understand that the proposed route would earn about one-third of what would be earned, supposing the railway were taken towards Millie by the Gurleigh Point route—is that your meaning? Yes.
1382. In other words, if the railway were taken along the Gurleigh Point route, the earnings would be three times what they would be along the proposed route? Yes; but if the proposed route were constructed, the remaining two-thirds would still go to Narrabri.
1383. Why do you think that? Because I know that the carriers would not care to go out of their way to get to the line. They would just as soon go on to Narrabri, although it might be 10 or 12 miles further, in order to get back loading.
1384. There would be very little traffic between Narrabri and Moree? Very little. The first of any account would come in at Millie.
1385. The bulk of the traffic would come in at Moree? One third of the traffic would come from Moree; but the bulk of it, two-thirds, would go to Narrabri.
1386. You said that much of the land along the proposed route was good land, but that it was in the hands of private owners? Yes; there can be no doubt about that, if the map is correct. The line will go principally through four large estates.
1387. But the produce of those estates would go to the line? Yes; of course.
1388. Would not the produce of 50 miles of country be of any importance? It would come to the line in any case; but it would not be enough to make the railway pay.
1389. Would not the earnings of those stations be appreciable? Their produce would amount to a few hundred tons in a year.
1390. But it would be nothing in proportion to the traffic on the other route? No.
1391. *Mr. Collins.*] It would not be possible to construct a cheap line over the 15 or 20 miles of country from Boolcarrol to Collarendabri, because of the floods? There would have to be more bridges.
1392. *Mr. Wall.*] If the line were taken along the proposed route, would it bring in more trade than now comes to the Narrabri station. Would the whole of the trade between Narrabri and Moree come to Narrabri? Yes; every bit of it.
1393. Therefore the construction of the proposed line would not bring about an increase of traffic, except in the country between Moree and the Queensland border? No; when the lines gets to Moree, it is quite possible that a few of the stations beyond Goondiwindi, which now trade with Brisbane and the Darling Downs, may send into New South Wales.
1394. Would the trade be extensive? Not very. There are only two or three good stations there, such as Callandoon and Welltown.
1395. There is no extensive trade to be attracted to this line beyond the trade from the district between Moree and the Queensland border? That is so, because the country lying north of the McIntyre is inferior sandy scrub country; it is not sheep country, and never will be. The trade from the south of the McIntyre has always come into Narrabri. You may get the trade of a few stations about Goondiwindi.

Frederick Poate, Esq., District Surveyor, Department of Lands, sworn, and examined:—

- F. Poate, Esq.,
12 Dec., 1893.
1396. *Chairman.*] You are district surveyor in charge of the Tamworth district? Yes.
1397. Tamworth is about 60 miles east-south-east of Narrabri? It is nearly 100 miles from Narrabri in the direction you say.
1398. How far does your district extend west or north-west? About 75 miles due west of Narrabri.
1399. That is your western boundary? Part of the western boundary.
1400. How far north of that do you go;—is Bingara in your district? No; it is not.
1401. How far is it north of your northern boundary? About 30 miles. My line follows the Nandewar ranges northerly, and the boundary of the county of Jamieson.
1402. Crossing the proposed railway line, about 40 miles from Narrabri, north? About Gurley station. It follows the Thalaba Creek down to the north and south line to which I have already referred.
1403. Then comparatively little of your district is shown on the Land Office map? Very little.
1404. The greater part of your district being to the south and south-east of Narrabri? Yes.
1405. How long have you been in charge of that district? Four-and-a-half years; but prior to that I was there for three years.
1406. So that you have an intimate knowledge of it? Yes.
1407. Have you a knowledge of the country north of your own district? I know that country to the north-west, in the direction of Angledool, Brewarrina, and Bourke.

1408. *Mr. Davies.*] What quantity of land available for settlement in your district would be served by the proposed railway? Do you mean at the present time?

1408½. I mean the land available now, and the land that will be available when the leaseholds fall in at the end of the leases? Not a great deal. I should think there would be from 80,000 to 90,000 acres along the railway line.

1409. Within an easy distance of it? Adjoining the direct line.

1410. What, in your opinion, would be the increased value given to that land by the construction of that line? I do not think that the construction of the line would make any appreciable difference.

1411. Is the land through which the proposed line will pass good land? A great deal of it is very fair, while a lot of it is almost worthless. In the parish of Cowimangarah there are 15,000 to 16,000 acres of unoccupied land.

1412. *Chairman.*] How many miles to the east of the proposed line? About 10.

1413. And about 15 miles from Narrabri? Yes, about that.

1414. *Mr. Davies.*] That land is available for selection, but has not been taken up? Yes; it has not even been held under pastoral lease or annual lease.

1415. What is the character of it? Rough mountainous country, covered with dense scrub.

1416. It is not likely to be occupied? Not under any tenure that can be given at the present time.

1417. In your estimate of the area of Crown lands available for settlement, you take in the forest reserves, the railway reserves, and everything else? Yes; but the estimate is only a rough one.

1418. Do you include the land that will be available in the future and that is now held under lease? Yes.

1419. That land will be available when the leases fall in? Yes.

1420. Is not most of that land good land;—I mean the land now held under lease? Not on the east of the proposed line.

1421. But taking both sides of the line? How far would you go to the west?

1422. How far do you think the holders of land on either side of the line would be served by it? With the exception of Edgeroi, Dobikin, and perhaps a little of the country around Millie, all the traffic on the west of the line would go to Narrabri by road.

1423. How far would the country be served on both sides of the line—say, at Woolabrar or at Gurley? I do not think that any of the country west of the stock route would be served by the line.

1424. In your estimation of 80,000 or 90,000 acres do you include the land to the west of the line? There is very little to the west.

1425. What proportion of the leases that will fall in lie on the western side of the line? I should say that on Edgeroi about half the area that would be available lies on the western side of the line, while practically the whole of the leasehold area of Dobikin lies on the western side of the line.

1426. How many acres would there be? I should think about 50,000 or 60,000 acres; but those leasehold areas extend considerably to the west of the stock route, and those parts of them would not be served by the proposed line.

1427. What distance would the Edgeroi station be from the Edgeroi run? The station would be on the run. The selectors on Edgeroi live west of the stock route. There are practically none out on the east until you get near Gurley.

1428. What distance will it be from where the selectors are on the west to the proposed line? It would be 12 miles to the boundary of the selections.

1429. Do you regard that as too long a distance for people to send their produce to the railway station? No; but, instead of going that 12 miles, they might just as well go straight into Narrabri.

1430. How many miles would it be from the point you speak of to Narrabri by road? About 20 miles.

1431. Eight miles further? Yes. They would continue to use the road which they use at present. Twelve miles is the distance which they would be from the railway in a direct line, but by the road they would probably be more.

1432. You are of opinion that they would continue to go into Narrabri, even if the railway were constructed? Yes.

1433. Do you know the original survey along the stock route? I know the stock route.

1434. You have also a knowledge of the country there? Yes.

1435. Do you regard the country along the proposed route as better for railway construction than the country along the stock route? No; I do not think it is better.

1436. Is the country along the stock route more subject to floods? I should say not.

1437. Is not the country along the proposed route higher than the country along the stock route? In one sense it is; but from a flood point of view I should say that it was not. I think that is what you wish to know.

1438. You think that although it may be higher, it has no advantages for the purpose of railway construction over the travelling-stock route? The hills on the eastern side of the proposed line have well-defined gullies; but when the water gets out of these gullies it has no defined channels, and spreads out over the country until it gets down near the stock route, where the creeks are more marked, and the water flows in between banks again. If the country along the direct route were higher, the teamsters, when the whole of the country was open for them, would have gone that way. Last June I was on Dobikin, and at a place 3 miles west of the proposed line I saw fence posts which had been washed across the plains for 3 or 4 miles. I saw nothing of that sort along the stock route.

1439. Have you ever seen anything of the kind more to the east? No.

1440. How far would these fence posts be to the east of the stock route? About 5 miles. They came either from the eastern side of the proposed route, or from just on the proposed route. That route had not been marked out at the time.

1441. Have you traversed the whole of the proposed route? I know the whole of it as far as the boundary of my district.

1442. But you do not know the whole length? Not the part that traverses the Moree district.

1443. Do you regard the country through which the line has been surveyed as fairly good? From a pastoral point of view?

1444. Yes? With the exception of the belar scrub and the forests.

1445. Is there much scrub country that would be affected by the railway? There is the Tarlec forest reserve, and the Eckford forest reserve.

1446. What is the extent of the scrub land? There must be very nearly 38,000 acres of belar country.

- F. Ponte,
Esq.
12 Dec., 1893.
1447. With the exception of that land, you think the country very good for settlement? The Cowman-garah country is bad.
- 1448-9. How much of it is unfit for settlement? Since that land has been available for settlement ever since 1861 and has not been used yet, I think we may say that it is worthless.
1450. But if it is served by a railway, will not that give it an advantage over country wanting railway communication? That country will never be improved unless the lessee can obtain it at a nominal rent for a long tenure.
1451. It is not at present served by the line to Narrabri? Practically.
1452. Is it not as well served by the present line as it would be by the proposed line? The proposed line would be a little closer to it, but not much.
1453. Do you favour a direct connection between Narrabri and Moree, or do you think the line should be taken along the stock route, or through Wee Waa, or some place more to the west? Knowing what I do of the country, of its occupation, and of the nature of the traffic there, I consider that the best line to make would be one crossing the river at Narrabri, and running down practically to Gurleigh Point, only on the north side of the river, and then following the Gurleigh Point route.
1454. From what part of the town would you propose to start? I believe that the crossing that has been selected for the direct route is one of the best that could be found there.
1455. In your opinion it is one of the highest points? I believe it is.
1456. *Mr. Neild.*] You have given some fairly lengthy reports with regard to the value of the country in the district traversed by the proposed line? Yes; I furnished a report on the subject.
1457. In your opinion, what would it cost to clear the belar scrub country and place it on an equal footing with land which is free from scrub? For railway construction?
1458. No; for agricultural or pastoral occupation? It would be sufficient to ringbark it for pastoral occupation.
1459. What would that cost? One shilling and threepence an acre.
1460. What would it cost to clear it for agricultural purposes? It would be necessary to remove the stumps. If you allowed the timber to die you could get rid of it by burning at from 10s. to 15s. an acre, but otherwise it would cost from £5 to £6 an acre to clear it.
1461. You consider that railway works upon the proposed route would be more likely to be interfered with by storm-water than railway works on a route further west? That is practically my opinion.
1462. You would not expect to hear that evidence has been given by officers of the Railway Department to the effect that a westerly line would cost £300 or £400 a mile more than the direct line? I should certainly not expect to hear that. In my opinion, the direct line would cost more than a line further west, because it would go through belar scrub, and you would have to pay for clearing away the timber, and ballast is not so easily obtainable as on the line I have indicated.
1463. I presume that it is more expensive to construct earthworks in timbered country than to construct them in open country? Certainly. You must clear the timber out of the way before you can start the earthworks.
1464. In timbered country you would have to deal with stumps and roots? Yes.
1465. Can you give us any idea of the difference in cost per yard between removing earth in open country and removing earth in timbered country? It would cost about £80 more per running mile to clear the timber.
1466. But would the cost of removing earth be greater? That would allow for the increased cost of moving the earth. That amount of money would clear the timber out of the way and leave the land ready for the plough.
1467. Can you give us any idea of what increase in value, if any, the construction of the line would give to land in the locality occupied solely for pastoral purposes? The difficulty in answering the question is this: at the present time the Government does not get the value of that land.
1468. By selling or by leasing? By selling it under the free selection principle. If we cannot get the value at the present time the increased value given to it by the railway will not make any difference.
1469. Would land within an area of, say, 25 miles, occupied mainly for pastoral purposes, be increased in value? Twenty-five miles on each side of the line?
1470. Yes? No; not as far as that.
1471. Well, take land within 10 miles of the line? I do not think it would make any difference to land occupied for pastoral purposes.
1472. You think that the saving in the cost of driving stock or carrying wool within a limit of 25 miles would be so slight as not to increase the value of the land? That is my opinion.
1473. You would be puzzled to know how to assess the enhanced value given to the land by the railway? Yes.
1474. Will the same remarks apply to land occupied for agricultural purposes? No.
1475. There would be no difficulty in determining the increased value of such land by the large quantities of produce sent to the line? No difficulty at all.
1476. Is there more settlement to the west of the proposed line than along it? Practically the whole of the settlement is to the west—that is, in the county of Jamieson.
1477. In taking the line further to the west you would be able to allot a betterment charge more easily than you would be able to allot such a charge in connection with land along the proposed line which is used wholly for pastoral purposes? Yes. It is at present under consideration to acquire about 20,000 acres of land from the Edgeroi Estate—that is, land in the parishes of Galathera, Gommel, and Gundemain. That is some of the best land in the Narrabri district.
1478. It is contemplated to resume that land? To acquire it by way of exchange.
1479. For what purpose? Under the 46th section of the Act of 1889.
1480. To throw it open for agricultural purposes? Yes; that is some of the best agricultural land in the district, and an unlimited supply of water is to be obtained by sinking 50 feet.
1481. What is the land to be exchanged for? It is to be thrown open for selection in special areas.
1482. In advocating the extension of the line to the west, you have in view the possibility of settlement upon the land to which you have referred and its occupation for agricultural purposes? Yes.
1483. You expect that if this scheme is carried out there will be a large settlement in that locality, and that a great deal of agricultural produce will come from there? That will eventually become the farming part of the Narrabri district.
- 1484.

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1484. Is there any prospect of agricultural settlement along the direct line? Practically none.
1485. On what grounds do you make that statement? The land is not suitable for agriculture. You cannot do anything with the black soil country.
1486. Why? It is too heavy to work. You cannot get a plough into it. In wet weather it rolls into mud, and in dry weather it is as hard as iron—you cannot break it up.
1487. In your opinion, the country traversed by the direct line must always remain in pastoral occupation? Until the forces of nature have broken it up.
1488. That is many years to come? Thousands of years to come.
1489. You deem the only valid reason for the construction of the direct line to be the object of getting to Moree as quickly as possible? Yes.
1490. Is there anything except the shorter distance to be urged in favour of the direct line? Nothing whatever.
1491. Do you know the amount of ballast that it is proposed to place under the sleepers? I have heard it said that 3 or 4 inches are to be used.
1492. Do you know the size to which metal is broken for ballasting purposes? Yes.
1493. What is it? Two or 3 inches.
1494. From $2\frac{1}{2}$ to 3 inches—about the size of road metal or a little larger—that would give you a little over the depth of one stone under the sleepers? Yes.
1495. Would that be sufficient to bear the weight of passing trains in this black-soil country? No; the ballast would disappear after the first spell of rainy weather.
1496. Irrespective of the weight of the train? As soon as the soil got thoroughly wet the weight of the trains would make the ballast disappear.
1497. Are you aware that the soil would be banked up 2 or 3 feet? No; but that would make a considerable difference, because if it were banked up the soil would take a long time to get wet. If the soil once gets wet the ballast will sink when the trains pass over it.
1498. Would water make its way through these embankments and destroy them? This black soil has one peculiar quality. If you took a lump of it as big as your fist, which it would require a hammer to break, and put it into a bucket of water, it would almost disappear.
1499. It is soluble; therefore water lying against an embankment would be absorbed by it, and would destroy it? It would be very liable to do so.
1500. An extra depth of metal would not provide against that contingency? No; but I suppose that what would be done would be to cut large drains to keep the line dry.
1501. There would have to be a considerable number of culverts, I suppose? Yes, on the direct line; otherwise it would be washed away.
1502. Would the same answer apply to the line further west? I do not think that it would require as many.
1503. Why? Because the channels of the creeks there are better defined.
1504. On the direct line you would require a large number of culverts, while on a more westerly line you would require a large number of bridges? I would hardly say that you would require more bridges, because you have to cross the same number of creeks on the direct line, and in addition you would have to provide getaways for flood-water.
1505. What meaning do you attach to the word "getaway"? When the water gets out of the gullies on to the level land it spreads out, and it would be necessary to provide channels to conduct it to the other side of the railway line. If you put an embankment across the country, without making sufficient channels to carry the water off, it would act as a big dam, and in order to let the water away you must have a greater number of openings than you would require if there were large natural channels.
1506. You use the term "getaway" as I use the term "culvert"? Yes.
1507. You think that the same number will not be required on a more westerly route, because the creeks there are better defined? Yes; and they would carry off the bulk of the water.
1508. Is the soil along the westerly route the same black soil as that along the proposed route? Yes; it is very much the same.
1509. Is the force of the flood-water as great on the western route as it would be on the proposed route? No; it has not the same effect on the fences.
1510. While fences are destroyed by flood-water along the proposed route they are not so liable to injury further west? Yes, that is so, up to what is known as Gurleigh Point.
1511. The water is more slack there? Yes.
1512. Have you made any personal examination of the proposed crossing at Narrabri? No.
1513. Have you heard of the crossing advocated by Mr. Moseley, about 2 miles to the east of Wee Waa? I know the river, but I did not know that it was proposed to cross it.
1514. Do you know if the proposed crossing at Narrabri is much subject to flood? I understand that the line has been selected as being above flood-level, but I do not know that positively.
1515. If Mr. Moseley's evidence is to the effect that the flood-water rises 8 feet above the line there, would that surprise you? We do get exceptional floods. I have seen flood marks that would almost seem incredible.
1516. Mr. Moseley's evidence was to the effect that the fences in the vicinity of the proposed crossing had been washed away on an average once a year for twenty years? I have no knowledge of that. If it were so, what would happen to the people living there. All the people who have lately settled in Dangar Village would be washed away. It seems hardly likely that people would live there with the knowledge that their fences would be washed away every twelve months.
1517. *Mr. Wall.*] Are you a railway engineer? No; I am a district surveyor.
1518. Have you taken the levels on either of the routes? No.
1519. If the officers of the Railway Department have stated that the direct route would not be subject to floods, would you be inclined to question their statement? If they only go by the levels they have taken I do not think they are in a position to say whether the line will be flooded or not.
1520. Have you known of any instances where lines have been constructed without proper provision being made for drainage? Yes; there was the Bourke line.
- 1520½. That line was affected by an exceptional overflow of the river;—the tenor of your evidence seems to question the reports of the officers of the Railway Department; but you are not competent to offer a scientific opinion with regard to matters of railway construction? I think I am fairly qualified to do so.

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1521. If the officers of the Railway Department who have surveyed this route, and told the Committee that it will not be subject to inundations because they have made proper accommodation for drainage, their evidence is not correct? If they have made proper drainage accommodation there will be no difficulty. I said that the proposed route would require more getaways than a route further west.
1522. *Mr. Collins.*] Are you aware that during very wet weather teams and other vehicular traffic coming into Narrabri go to the east of the proposed line? I was not aware of it.
1523. Do you know of any teams that go that way? I have not known any teams to go that way.
1524. If it has been stated that teams go that way in very wet weather, it shows that the proposed line would be better than the travelling stock line? Yes; if you have evidence to that effect it would. I have seen no traces of teams travelling that way.
1525. You said that the land to the east of the proposed line was not fit for agriculture? Only to a limited extent. I did not say that none of it was.
1526. What area of it would there be between the mountains and the railway line? Very little of it.
1527. You have not been further north than Dobikin? My district ceases at the Dobikin boundary.
1528. You do not know if the land from Dobikin to Moree will be fit for agriculture? I do not know that country at all.
1529. If it has been stated that it is good red chocolate soil, do you think that it is fit for agriculture? Yes; in that case it would be first rate agricultural land.
1530. Do you think that the line ought to cross the river at Narrabri, and then follow the river down on the west to Gurligh Point? Yes; towards Collarendabri, with the intention of making it a part of the line to Collarendabri, following the Pian Creek road.
1531. It is not necessary to go to Collarendabri? No.
1532. *Mr. Humphery.*] You think the direct line will not serve anything like the area that would be served by a more westerly line? I think a line along the route I suggested would carry 20,000 more bales of wool than the proposed line.
1533. Do you think that the advantages of the line you indicate would justify its construction at a cost of 50 per cent. more than the cost of the proposed line, with the disadvantage of 15 miles additional length? If it is intended to carry the line to Collarendabri, I think the present line should be taken in the way I suggest. In my opinion, a line from Collarendabri should be looked on as the main line of the district. I think that more stock and wool would come in along the Collarendabri line than along the Moree line.
1534. In your opinion, it would be better to abandon the proposed route, and to take the line by way of Gurligh Point? Yes; on the northern side of the river, to follow what is known as the Pian Creek road towards Boolcarrol. If that is done, I think the railway will get at least 20,000 more bales of wool and more return traffic than the proposed line will get.
1535. Is it your opinion that the cost of construction per mile will not be greater on the western route? Yes; it will probably cost less than the direct route.
1536. *Mr. O'Sullivan.*] You appear to hold the belief that the floods will be more dangerous and destructive on the proposed route than on a westerly route? So far as my own district is concerned.
1537. Do you know Mr. W. H. O'Malley Wood, the surveyor of the Moree district? Yes.
1538. Are you aware that in 1891 he was unable to get his furniture up by the travelling stock route, and that he got it up by the eastern route? I do not know of any eastern route.
1539. The road that goes towards the mountains and comes out by Gurley station? Mr. Wood drove from Narrabri to Edgeroi, and from there he got on to the stock route, I believe.
1540. I am speaking of the time when he got up his furniture;—he was unable to get it up by the travelling stock route, and he got it up by the road that goes towards Bingara, and then across Gurley into Moree? I was not aware of that.
1541. Have you ever heard that the mail coaches have been stuck up for considerable periods on the travelling stock route, and that the mails have had to be taken across from Narrabri to Moree on horseback? I have no doubt that it has occurred sometimes. It will occur on all black soil country.
1542. Does not that go to show that the floods must be more dangerous towards the bottom of the basin than they are at the top? I think myself that a proof that the stock route is the better route, is the fact that the teamsters took it when they could have gone any way they chose. They have made it the main road.
1543. Might not the fact that it is more level have encouraged them to take it in preference to going along the mountain road? There may be something in that, but I do not think that it would have any great weight.
1544. I gather that you would prefer to see the line go to Collarendabri rather than to Moree? No; but I should like it to form part of a line to Collarendabri if the traffic from the lower part of the Namoi is to be secured. If, however, there is no intention of securing that traffic, let the line go direct to Moree.
1545. Suppose we had to choose between your proposal or the Gurligh Point proposal, and a direct line to Moree with a branch to Collarendabri, that would only cost the same amount, which would you advise us to take? The line I am advocating. The only traffic you would get on the direct line would be from Edgeroi and Dobikin, whereas on the proposed line you would not only get that, but you would also get the produce of the selectors and that of the people on the Pian Creek and on Thalaba Creek.
1546. Would you not get that traffic by running a line to Pian Creek from the 5-mile peg on the proposed line? You would get a good deal of it.
1547. If you could get that traffic by making a branch line and saving 15 miles of carriage to the people north of Moree, would it not be a wise thing to make the branch line? I think that a greater part of the produce would come from the north-west, not from the north.
1548. That branch line would be served by the line towards Collarendabri? Yes.
1549. Having served that traffic by a branch line, would it not be possible to make the line to Moree as direct as possible in order to save them unnecessary haulage? Then you would have an extra 16 miles requiring the services of a double set of men and rolling-stock.
1550. But you would have an extra 15 miles on the Gurligh Point route, which would be just the same? That line would also serve the Collarendabri trade.
1551. What we have to consider is this:—would it not be better to take a direct line to Moree, with a branch to Collarendabri, than to make a line which would only serve one of the two places? So far as my

my district is concerned the direct line to Moree and the branch line would not go through any settlement, whereas a line down the river, striking the stock route about Boggy Creek, would go through settlement. I take it that a railway to pay must go through settlement, or where there is a prospect of settlement.

1552. Would not a branch line running almost parallel to the line you propose serve that settlement? Yes; but then it would make the direct line, as far as my district is concerned, a non-paying line.

1553. Why would it? Because there would be no settlement there. We have practically two districts, the western and the northern districts, and it is very clear that one line cannot serve them both properly.

1554. Having an amount of money at our disposal, would it not be wiser to run a direct line to Moree and a branch across Boolcarrol, towards Pian Creek, than to take a line towards Gurleigh Point? That would make more mileage than if you took the line towards Collarendabri first of all. The nearer you can strike off at a right angle to Moree in another line the shorter you will make a total mileage.

1555. You propose to take a branch line to Moree from a line to Collarendabri? Practically, you might put it that way.

F. Poate,
Esq.
12 Dec., 1893.

Edward Christopher Weller, Esq., Chief Clerk, Stock Branch, Department of Mines, sworn, and examined:—

1556. *Chairman.*] You are connected with the Stock Branch of the Mines Department? Yes; I am E. C. Weller, chief clerk in the Stock Branch.

1557. At the request of the Committee you have compiled a return showing the stock in certain districts in and about Moree? Yes.

1558. District No. 1 embraces roughly, starting from Moree, the country comprised by a line out to Mogil Mogil, then following the McIntyre to Boggabilla, then by a line south to Warialda, and west from Warialda to Moree? Yes.

1559. In that district there are 4,463 horses, 47,692 cattle, and 1,592,000 sheep? Yes, that is correct.

1560. No. 2 district, taking Moree as the starting-point, is included in a line west of Mogil Mogil, down the Barwon to a point about 20 miles south of Collarendabri, then south-east to Pilliga, and east from Pilliga to Narrabri, and from Narrabri due north to Moree? Yes.

1561. In that district there are 3,417 horses, 31,308 head of cattle, and 1,480,402 sheep? Yes.

1562. Your next district is embraced in a line, taking Moree as a starting-point, going east to Warialda, south to Bingara, thence south-west from Bingara to Narrabri, and north from Narrabri to Moree? Yes.

1563. In that district there are 1,874 horses, 23,812 head of cattle, and 391,059 sheep? Yes.

1564. You put in a statement showing the details from which those figures are arrived at? Yes. In the case of small holders I have made an estimate of the quantity of stock they are likely to have. For instance, I estimate that in No. 3 district the small owners possess 300 horses, 100 head of cattle, and 3,000 sheep.

1565. You have accurate figures in regard to the runs, but you have only made an estimate of the possessions of small holders? Yes.

E. C. Weller,
Esq.
12 Dec., 1893.

WEDNESDAY, 13 DECEMBER, 1893.

Present:—

JACOB GARRARD, Esq. (CHAIRMAN).

The Hon. WILLIAM HENRY SUTTOR.

The Hon. JAMES HOSKINS.

The Hon. FREDERICK THOMAS HUMPHERY.

The Hon. JOHN DAVIES, C.M.G.

The Hon. WILLIAM JOSEPH TRICKEFF.

WILLIAM CHANDOS WALL, Esq.

WILLIAM McCOURT, Esq.

JOHN CASH NEILD, Esq.

EDWARD WILLIAM O'SULLIVAN, Esq.

CHARLES COLLINS, Esq.

HENRY DAWSON, Esq.

The Committee further considered the proposed Railway from Narrabri to Moree.

Hugh Millar, Esq., Inspector of Pastoral Properties for the Australian Mortgage, Land, and Finance Company, sworn, and examined:—

1566. *Chairman.*] What is your occupation or profession? I am an inspector of pastoral properties.

1567. You have an intimate acquaintance with the country immediately surrounding the route of the proposed railway, I understand? I have, more especially of the country on the western side of the proposed route.

1568. You desire to give evidence as to its capabilities and so on? Yes.

1569. For whom are you acting? For the Australian Mortgage, Land, and Finance Company.

1570. *Mr. Hoskins.*] Do you think it would be a great advantage to the people in that district, and also to those living further north, towards Queensland, if the railway were constructed? It would be more to the advantage of the general public if the railway were taken further west.

1571. If the proposed line were constructed, it would be an advantage to the residents in the neighbourhood of it, and also to the people living in the northern part of the Colony, because it would give them cheap carriage for their produce and merchandise? Yes.

1572. Have you been in Moree? Yes.

1573. Is it a thriving place? It was when I was there last.

1574. How long ago is that? About three years ago.

1575. How long is it since you were in the district last? I have travelled through it frequently. I was there eight or nine months ago.

1576. Is the country on the direct route between Moree and Narrabri taken up by graziers, large or small? There are three or four very large estates there.

1577. Are there any medium class graziers there? Not very many.

1578. There are not many small graziers in the district? Not on Edgeroi and Gurley, but there may be on Tycannah. There are two very large freeholds just out from Narrabri.

1579. Do you know the country to the east of the proposed line? I have been through it.

1580. Is it good country? There is a considerable amount of belar scrub when you get a bit off the main stock route. I think the proposed line will go through that scrub.

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1581.

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1581. What is the character of the scrub land? It is good country when it is improved. There is a lot of stony country there too, which is no good.
1582. There is land in the scrubs which would be suitable for settlement if it were cleared? Yes; if it were improved.
1583. Do you think that the route proposed by the Department is the best for connecting Narrabri and Moree? Is it a question of expense?
1584. Which would be the least expensive route? I think a deviation to the west would be less expensive than the proposed route.
1585. Will you tell the Committee why you think so? Because of engineering difficulties—such as creeks to be crossed.
1586. Would not the proposed line cross the creeks nearer their source than a more westerly line would do? But they junction further down, at Bulleroi. In the Thalaba Creek you have them pretty well in one water.
1587. To cross that water would necessitate the construction of large bridges? Only one bridge, and that would not be a very big one, because the water is deeper and does not spread so much. I am speaking of a place below what they call the lower water.
1588. How far is that locality from the proposed line? I should say that it was 24 or 25 miles west of Millie.
1589. Does it not stand to reason that since at this point the creeks would have drained a larger area of country bigger bridges would be needed to cross them? There are one or two creeks on the proposed line which are up quick and down quick.
1590. Still they are small creeks? Not at times.
1591. Does it not stand to reason that when the creeks have run 34 miles further on, they have drained a larger area of country, and would, therefore, require larger bridges to cross them than in the vicinity of the proposed route? Only one bridge would be needed at the place I speak of.
1592. How long would that bridge be? Not more than a quarter of a mile, I suppose.
1593. Would it not cost a good deal of money? I have seen many of the other creeks half a mile wide.
1594. Do you mean to the east of the proposed line? No; just on the line, or a little to the west of it.
1595. I suppose you know that a bridge a quarter of a mile long would cost a good deal of money? Perhaps I am exaggerating when I say that the bridge would have to be a quarter of a mile long. It would not have to be so much.
1596. You would like the line carried more to the west than the surveyed route goes? Yes.
1597. Can you tell us why? Because I think it would serve a greater traffic. It would get a great deal of the wool that at present goes to Dubbo and down the river.
1598. Wool is sent down the river when the river is favourable because the freights are cheaper? My experience is that that is not so. We are connected with one station 30 miles below Bourke, but we cannot afford to send our wool to Adelaide, because the insurance is too heavy.
1599. If the rivers were favourable, could not wool be sent to Bourke by steamer, and thence by train to Sydney, more cheaply than it could be sent from Narrabri to Sydney? I have figures here which show that it cost us £6 10s. a ton to send greasy wool from Dunumbrel to Sydney, and £7 10s. a ton for scoured wool. On the top of that there is 2s. for the sheep's back insurance policy. From Dungalar it cost us £6 12s. 6d. to send greasy wool to Sydney, and £7 12s. 6d. to send scoured wool, with 2s. for the sheep's back insurance, and 20 per cent. for river insurance.
1600. I gather from what you say that the conveyance of wool by railway is cheaper than the conveyance by river where stations are some distance from the river? The stations I speak of are right on the river frontage.
1601. Is it not a fact that the charges you speak of were high because of the union among the carriers to keep up the rates? No. As a matter of fact, the contractors lost money on the Dunumbrel wool.
1602. How far would you deviate to the west from the proposed route? I propose to take it in the direction of the north-west corner of the Colony, out towards Goodooga. Moree could be a branch from that line, and the trunk line could afterwards be continued on to Mogul, Collarendabri, or wherever was thought most advisable.
1603. How far would you suggest that the railway should be taken to the west, always bearing in mind that Moree must be reached? I should say that it might be taken to a point somewhere between Boolcarrol station and Bulleroi station.
1604. How many miles would that be? About 40 miles from the proposed line diagonally.
1605. How far would it be from Narrabri to Moree by the route you suggest? I could not tell you without entering into a calculation.
1606. Would your suggested line be 20 or 30 miles longer than the proposed line? I should say between 20 and 30.
1607. Do you think it would be fair for the people of Moree and for those living north of Moree to make such a lengthy detour, and charge for the extra mileage? I think the country would benefit by it in the future. I do not know anything about the people of Moree.
1608. Would it be fair to them to take the line in that way? If you are only considering the people of Moree, it would not be fair to make the deviation.
1609. Would it be a fair thing to put the country to the expense of the 20 or 30 additional miles? I think it would.
1610. Have you any idea of what the expense would be? Well, you would save a good deal in bridges, and as the country is better, the line would not cost so much to construct.
1611. Will you have the kindness to tell the Committee why there would be a saving in connection with bridges? With the proposed line starting at Narrabri we have to cross the creek and the river, which necessitates two bridges. Then there is Spring Creek to be crossed, and several other creeks further on. If you went down the river, however, you would only have one bridge to construct. You would not require any more bridges until you got to Thalaba Creek.
1612. And from there? You would have to cross the Moomin, and there are some other small creeks which would have to be crossed in any case.
1613. That being a flatter and a lower country, would not the line you suggest be more liable to flood than the proposed line? I do not think the water runs on it as much as it does higher up. If you took an intermediate route you would have a lot of water to cross.
- 1614.

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1614. I should like to know how it is that although this country receives the drainage of 30 miles more than the country higher up, we should have less difficulty in dealing with the water? That is simply owing to the natural features of the country.

1615. Is it not all flat country? Yes; but some parts are higher than others, and there is a dry stretch of land where I speak of.

1616. Is the country not dry during droughts, and liable to floods during heavy rains? I do not think so; but between the line I suggest and the proposed line (say) from 5 miles west of Millie to close to Bulleroi, you would have miles and miles of water to go through.

1617. It has been stated that that country was flooded in 1890;—was not the country over which you propose to take the railway at that time flooded to a greater extent than the country higher up near the Nandewar Ranges? I do not know. I was not there at the time; but I should say that it was not.

1618. You think that the country lower down is not so likely to be flooded as the country higher up? Not just at that particular spot, because the water is gathered together there.

1619. But it must still drain over the country;—would not that country be inundated? You would be down below where the water converges from several creeks.

1620. You cannot tell us how much longer your suggested route would be than the proposed route? No, I cannot tell you definitely.

1621. You see no injustice in making the people of Moree and north of Moree pay for 20, 30, or 40 miles of additional carriage in order to take the line further west? They would have to use the railway, and the general public would benefit more than if the proposed line were constructed. If the proposed line is for the Moree people alone, I have no more to say.

1622. What are your principal reasons for suggesting this deviation? I know that considerably over one half of the wool traffic comes in from the west, and the sooner the people out in the west get cheaper carriage by means of railways the more the country will be benefited.

1623. If the Government have determined to construct a railway to Moree, would it not be more desirable, instead of making the deviation you speak of, to construct a branch line for the accommodation of the people out in the west? I think the trunk line should go out to the north-west.

1624. Where would the trunk line go to? The main trunk line should go to the north-west, and a deviation might be made at any point to Moree.

1625. You propose that Moree should be served by a branch line from some main line which you have in view? Yes.

1626. Where would you wish the trunk line to be taken? Eventually, or at the present time?

1627. Now? As I have said, about 40 miles north-west of Narrabri.

1628. *Chairman.*] On the south side of the river? No, I would cross the river.

1629. At Narrabri? No, further down.

1630. *Mr. Hoskins.*] Where would you propose to cross the river? Between Molly and Wee Waa. Molly is about 16 miles this side of Wee Waa.

1631. *Chairman.*] I understand that you propose to extend the existing line along the south bank of the Namoi to some point between Molly and Wee Waa, then to cross the river and run in the direction of Collarendabri or Mogul? Yes.

1632. *Mr. Trickett.*] When the line got out to Boolcarrol would you stop there, or would you go further on? I would not suggest any particular stopping place. I would stop either there or further to the north-west.

1633. You see the route on the map marked yellow, that is called the Gurlough Point route, and after a time joins the travelling stock route, and follows it to Moree; that line would be about 12 miles from the proposed line and, I understand from you, would not be a desirable one to construct? At Millie there is a creek that would take a lot of stopping. I think you would have to go down below what they call the lower water. You get there about 5 miles down the Thalaba Creek. I have ridden through 10 miles of water near there, and then come on to dry ground. There is also dry ground on the south side of the Thalaba Creek.

1634. You do not think that a line somewhere about Millie would be desirable? No; because it would have the same disadvantages as the proposed line, except that higher up the creeks might not be so big. I do not think that the Gehan Creek is very deep where the proposed line crosses it, but it is a good sized creek at the travelling stock route.

1635. Therefore, if a line goes west at all, it should go 40 miles west? You should go down to the lower water between Bunna Bunna and Bulleroi.

1636. How far from the proposed line? Thirty or 35 miles.

1637. Do you know much of the country round about Moree? Yes; I have been through the district.

1638. Is it good country? Yes; very good.

1639. Independent of the traffic along the proposed line, what right do you consider Moree has to a railway? I think that Moree is quite entitled to a railway.

1640. Independent of the country to the west? Yes.

1641. Because of the good country that surrounds it? Certainly, but I think that other interests might be served at the same time.

1642. Do you know the proposed line of railway from Glen Innes to Inverell? I have been along the road.

1643. If the proposed line were constructed, would it compete with that line? Everything from Warialda would come to Moree, and everything in a straight line north of Warialda would come to the proposed line; but you are not a great distance from the border there.

1644. In regard to the proposed line, what are the prospects of trade from Queensland? We have a prohibitive duty on our wool now.

1645. Will that affect the trade? I think so, to a great extent. Some of our wool which generally goes to Sydney, would not stand the £2 10s. duty, and so we send it to Brisbane now. It is a matter of £. s. d.

1646. From what part of Queensland does that wool come? From about St. George. It used to come into New South Wales. On the other hand, however, the Australian Pastoral Company's wool has paid the duty this year. They are on the Mooni. The other man is a little bit further west, and he sent his wool to Brisbane.

1647. Will that wool ultimately come to Sydney? Yes; it is shipped at Brisbane and sold here.

1648.

- H. Miller, Esq.
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1648. Then it has to pay the duty just the same? Wool sent away by sea has not to pay a duty.
1649. What is the distance between the Australian Pastoral Company's station and your station? The Australian Pastoral Company shear about 1,000,000 sheep, and occupy a vast extent of country. They have several stations, and I could not tell you without referring to the map how far their line extends; but it comes close up to St. George, starting from Mungindi. I think there is about 100 miles between the two places.
1650. I want to find out if it is a question of distance? It is in the first instance to a certain extent. Before the duty was levied, the wool always came in direct to Narrabri.
1651. But they are sending it to Brisbane now? Yes; the duty has made it prohibitive to send it into this Colony, though the Australian Pastoral Company have found it to their advantage to pay the duty.
1652. You do not know why that is? No.
1653. *Chairman.*] Is your station the nearest to that owned by the Australian Pastoral Company? If it is not the nearest, there is not more than one station in between. The other man is west of St. George a few miles. The dividing line almost runs through St. George.
1654. *Mr. Hoskins.*] Has not the Australian Pastoral Company some stations in this Colony? Yes.
1655. Did you hear that they were going to shear in this Colony next year, in order to evade the duty? No; I did not hear that.
1656. *Mr. Trickett.*] You have told us that you strongly advocate a line 35 miles to the west, but such a line would entail a very much larger expense, because the extra mileage would be considerable;—without working it out, you could not say what the extra expense would be? No.
1657. Do you think the extra traffic would justify the deviation? I think it would, because if it were made, a lot of wool which now goes to Dubbo would come into Narrabri, though perhaps after all that is as broad as it is long.
1658. What are the prospects of settlement in this part of the country? I think that when the leases are thrown open—if they are thrown open—they will all be taken up; that is, all in the Central Division.
1659. Is the country suitable for small holdings? Yes; I know men there with 2,500 acres who are doing better than men with 100,000 acres. They are freer from debt, and are doing better.
1660. What country are they on? There are some on the country round about Boolcarrol.
1661. Have they been there any time? They have been there for some years.
1662. And they are improving their position? I think they are living comfortably.
1663. Do you think the Gurleigh Point route would be a difficult one to construct? No; I do not. I think it would be cheaper than the other route.
1664. You said that the line was likely to be washed away by rushes of water? I do not think I said that. You would have to cross the Namoi in any case.
1665. I am not speaking merely of the crossings;—is the character of the country such that very high embankments would be required? I do not think so; not at any distance from the river.
1666. Do you know the country round about Gurleigh Point? Yes.
1667. What has been your experience in regard to the flood-water there? The water comes out below Molly. There is a bit of low country there.
1668. Does it do much injury? I do not think so.
1669. It has been stated that the fences in that locality have been washed away nearly every year, and that great damage has been done? That might happen along the main road and near the river bank; but it would not happen a mile or so out from the river.
1670. Can you tell us any particular place at which it would be best to cross the river? No; I could not.
1671. *Mr. Wall.*] From what part of the country does the wool come which goes to Dubbo? From just below Walgett. The wool sometimes comes to Narrabri.
1672. *Mr. Collins.*] You mean that it goes to Bourke? No.
1673. *Mr. Wall.*] What about Goodooga? That wool comes to Bourke.
1674. Do you think that if the proposed line were taken 40 miles further west it would command that wool traffic? It would make a difference, but I think that traffic is too far away to be affected.
1675. A deviation of 40 miles would make the whole length of the line 100 miles instead of 63 miles, as now proposed? Yes.
1676. Do you know any reason why Moree should be made a terminal point? No.
1677. If it were contemplated to extend the line in a north-westerly direction, would it not be better, instead of going the way you propose, to go 100 miles straight out? Yes; but Moree is a populous district. There is more settlement there than there is out to the north-west at the present time.
1678. You propose that the line should go from Narrabri 40 miles west, and then work back to Moree? Yes.
1679. Making almost a right-angled triangle with the proposed line? Yes.
1680. If the line were extended from Dubbo to Coonamble and Walgett, would it not command the whole of the trade of the north-west? Yes; if a trunk line were not taken out from Narrabri.
1681. But would it not do so in any case;—would not a line to Walgett or a line to Brewarrina take the whole of the traffic from the overflow of the Balloone? Yes.
1682. The distance from Goodooga to Moree is about 190 miles, is it not? Somewhere about 200 miles.
1683. From Goodooga to Brewarrina would be 40 miles in a direct line? Yes.
1684. So that if either of the lines I have referred to were constructed, they would be 100 miles nearer Goodooga than the deviation you suggest? Yes; but to get their produce to the sea-board from Brewarrina they would have a much longer railway carriage than if they sent from Narrabri.
1685. Is it not a fact that a large quantity of that wool would, under any circumstances, be taken down the river? Not as a rule. It is only taken to Bourke. Below Bourke, when they get out of range of the railway, they have to be considered.
1686. Do you know that Rich and Company are making arrangements to get their goods from Adelaide to Bourke, guaranteeing a return trip of wool? Yes; but they have to send down the river for it. They cannot get it within 40 miles of Bourke.
1687. For the last four years the river has been navigable throughout the whole of the wool season? I think so.
1688. All the stations lying within 40 or 50 miles of the river would have 150 miles less of land carriage than if they took their produce to the proposed line, even if the deviation you suggest were made? Yes.
1689. If it is intended to construct a trunk line right through that part of the country, would it not be better to continue the line from Walgett out? Yes.
- 1690.

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1690. You spoke just now about having a shorter railway carriage to Sydney;—if the line were taken from Dubbo to Walgett would not the railway journey be less from Walgett to Sydney than from Moree? Yes.

1691. How much less? I could not tell you from memory.

1692. The northern line makes a detour to get to Newcastle, whereas a line from Walgett through Dubbo would go nearly straight? Yes; but you would get your goods to the seaboard in a shorter distance by the Narrabri line.

1693. By shipping at Newcastle? Yes.

1694. Nearly all the wool shipped at Newcastle is brought on to Sydney by boat? Yes; it is shipped at Morpeth, as a rule.

1695. The wool that you speak of, if it were brought to Newcastle, would not be reshipped to Sydney to be put into the ocean-going vessels there? Some of it would, and some might go direct from Newcastle, through Gibbs, Bright & Co.'s agency.

1696. Even though a deviation were made, you think the line would still go to Moree at the present time? Yes.

1697. Your proposal would practically mean the construction of two lines—one of 40 miles, out into the country to which you have referred, and the other a branch line, at right angles to Moree? Yes.

1698. One of the advantages which it is hoped to gain by the construction of the line is a reduction in the cost of carriage;—are you not aware that if the line were 100 miles in length, instead of 60, the charge on the Moree people would be increased? No doubt.

1699. If Moree is entitled to a railway, and can support a railway, it should have direct communication? There are deviations on the Northern line, that have been made for the purpose of getting trade, which are nearly as great as that which I suggest.

1700. How far on each side of it would this line command the trade? Where there are no railways trade will come from almost any distance, but the closer you can get the line to your door the better it is for you.

1701. *Mr. Suttor.*] For what firm are you inspector? The Australian Mortgage, Land, and Finance Company.

1702. What company is that? It is a mortgage company, in Spring-street.

1703. What stations do they hold—I suppose some in Queensland, and some in New South Wales? Very few in Queensland; they are mostly in New South Wales.

1704. What stations have they in New South Wales? There are some in which they are only interested, while others they hold wholly and solely.

1705. Can you give us any idea of the number of sheep in which they are interested in this Colony and in Queensland? I could not tell you? There are some Melbourne accounts over which I have no control, but I should say 4,000,000 or 5,000,000.

1706. In New South Wales? Yes.

1707. And in Queensland? Not very many; perhaps a million.

1708. Where do you send your wool? We send it home, as a rule. Our clients can elect to sell here if they like, or we will ship home for them.

1709. How many bales of wool have you sent away? Up to last week we had received 29,000 bales.

1710. Has that been shipped to England? Some of it has, and some of it is in the stores still.

1711. I suppose it will all be shipped? Some of it may be sold here, but eventually it must all be shipped home.

1712. *Mr. Collins.*] Are you aware that this year carriage is 50 per cent. cheaper than it was last year? I know that it is cheaper, but I could not say that it is 50 per cent. cheaper.

1713. It is considerably cheaper? Yes.

1714. Do you not think that that is the reason why stations which usually send by the river have sent their wool to Narrabri this year? No; I do not.

1715. You said that the contractor for the Dunumbri wool lost by it? Yes.

1716. If union rates were charged and the river were up, would the carriers be able to compete against the river? If the river were up and no transshipment at Brewarrina were necessary I do not think they could; but under present conditions they can.

1717. It is only because carriage is cheap that they can do it? Carriage is comparatively cheap, but it may never be any dearer.

1718. Do you not think that one of the reasons why it goes that way is that they have differential rates on the Western line which they have not got on the Northern line? Yes; no doubt. That acts on the stations below Bourke, who send their wool to Bourke because they get a concession on the through rate.

1719. You say that a lot of traffic would be drawn on to the Dubbo line if the Narrabri line were extended west to Collarendabri? Yes.

1720. What traffic would be diverted? Very likely the Wingadec traffic.

1721. Near Coonamble? The shed is 30 miles north of Coonamble.

1722. How far would it be from the extension you suggest? Not more than 80 miles.

1723. How far is it from Dubbo? One hundred and thirty.

1724. If a railway were constructed from Coonamble to Walgett, where would they send their wool? Such a railway would very likely go through their property.

1725. In that case the traffic would not be diverted to the line you suggest? Certainly not.

1726. You say that it would be better to take the proposed line down the river to Wee Waa instead of crossing at Narrabri? Yes.

1727. Why? Because of the engineering difficulties.

1728. What are they? You have the Narrabri creek and the river, and I suppose eight or nine other creeks on the proposed line.

1729. But near to Narrabri? There would be the creek at Narrabri.

1730. Do you not know that going further west the Boena Creek would have to be crossed? Yes.

1731. That is a creek you have forgotten? Yes.

1732. Consequently crossing lower down would be just as expensive as crossing at Narrabri? Yes; there would not be any difference in that. The Boena Creek is 5 miles from Narrabri.

- H. Millar, Esq.
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1733. *Mr. Humphery.*] What distance would Moree be from the nearest point on your suggested main line? I should say from 40 to 45 miles.
1734. How many miles from Narrabri would the starting point to Moree be situated? About forty.
1735. That would make the distance from Narrabri to Moree about 35 miles, as against 62 miles on the proposed line? Yes.
1736. Would it not be better to construct the line as proposed than to make the branch line you speak of? But you would have so much of the main line done.
1737. The only disadvantage would be the perpetual charge on the Moree people for 25 miles of additional carriage? Yes.
1738. *Mr. O'Sullivan.*] You admitted just now that there was more settlement in the Moree district and to the north than there is in the north-western district where you wish the line to go? Just at present there is.
1739. Are you aware that according to the returns supplied by the Stock Department there are 500,000 more sheep, 40,000 more cattle, and 2,200 more horses in the northern district than in the western district? How far does the district extend?
1740. To Kunopia and Mungindi, and away past Warialda to the east? I do not think that that is the case.
1741. The Stock Department ought to be able to form a good opinion on the subject, ought they not? Of course; their figures are reliable.
1742. If the population to the north is greater, and there are more sheep, cattle, and horses there than there are to the west, should not the line go north? Yes; but if a deviation were made to the west, you would serve a large additional population, and you would get the stock traffic, whatever it might be. When you got up to Bingara stock would be of no use to the railway. It would only get the wool.
1743. There are thirty-two stations and three towns served by the direct route, that is, taking the district as far north as Mungindi; while in the western district, from Collarendabri South to Pilliga, and thence to Narrabri, there are only seventeen stations and three towns to be served;—do not those facts support the contention that the direct line should be made in preference to the western line? Perhaps they do. Moree is what I call a settled district, and the population is closer there than it is out west, but I hope that in a few years the population out west will be equally close.
1744. Suppose it would cost £80,000 more to take the line *via* Gurleigh Point than to take it direct, and for that £80,000 you could construct a branch line out to the north-west, which line would you construct? I think I should go for the deviation, because I would get traffic on it.
1745. Notwithstanding what I have said about the population, stock, and number of stations in the two districts, you still prefer the deviation towards Wee Waa? Yes.
1746. Would it not suit the interests of the State better if a direct line were made to Moree, and a branch line taken out about 40 miles from it, instead of constructing a boomerang-shaped line as you suggest? The western country would not be any better served in that way.
1747. If a branch line were taken as far as Pian Creek it would serve all the country which you wish to serve by a westerly deviation? I do not think it would.
1748. Would it not serve a large part of it better than your deviation, by going straight towards Collarendabri, which seems the natural stock route? The natural stock route and the natural wool route is on the proposed deviation. I think more wool comes into Narrabri from the west than from the north.
1749. From what point does it come? It comes from beyond the Barwon.
1750. By way of Collarendabri, along Thalaba Creek and Pian Creek? Yes, and from Walgett.
1751. There will be a line to serve Walgett in the future;—you must confine your remarks to the country that will be served by a line from Narrabri to Moree? If the railway is to be constructed only for the benefit of the northern districts and Moree, the deviation may not be worth the expense. We have no evidence that a line is going to be taken to Walgett.
1752. You know that lines from Dubbo to Walgett, and from Mudgee to Walgett, have been advocated for years past;—if either of those lines were constructed it would take a great deal of the trade which you say would come to the Moree line? Yes; but in the meantime, you would be getting revenue from it.
1753. *Mr. Davies.*] Did I understand you to say that the company you represent shorn something like 12,000,000 sheep last year? Yes, directly and indirectly.
1754. In New South Wales alone? I think so; but I cannot give you definite figures. Some of our clients have their accounts in the Melbourne branch, and I cannot give you the statistics as to them.
1755. You believe that your company is directly and indirectly interested in about 12,000,000 sheep? I think so.
1756. *Mr. Humphery.*] That would be about 140,000 bales of wool, taking 90 fleeces to the bale? But wool does not go 90 fleeces to the bale every year.
1757. Well take it at 100 fleeces to the bale? There are considerably over 30,000 bales down here now from this side alone; but I will not swear to the figures.
1758. *Mr. Davies.*] Is 30,000 bales the total clip? No.
1759. What proportion of that clip came from the Moree end of the proposed line, or from places along the route of it? There were 4,000 bales from the west. That wool would come from Narrabri in any case, whether the deviation were made or not, unless the rates of carriage became high, and it were sent to the river.
1760. What other wool comes from there? I suppose 1,000 or 1,500 bales come from the Moree district; 5,500 bales have come, or will come from Narrabri.
1761. That is from stations over which your company has control, or in which it has an interest? Yes.
1762. Could you name the stations from which the wool comes? I do not think I am at liberty to disclose the names of our clients.
1763. Did any of the wool come from St. George? No, it came from close to Moree.
1764. If the line were taken to Moree, would it serve the people right up to St. George? Yes; but I do not think that the wool would come across the border.
1765. Why? Because of the duty.
1766. Does it not come now? Some of it, but that is exceptional.
1767. Is it not a fact that the Australian Pastoral Company have arranged with the carriers to send the whole of their wool to Narrabri at £3 10s. a ton? Yes, I believe so; but that is a very low rate.
1768. Is it also a fact that they propose to erect shearing sheds on the New South Wales side, and drive their sheep across the border, in order to evade the duty? I do not know. 1769.

H. Millar,
Esq.

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1769. That could be done? Certainly.

1770. Do you think it likely that other pastoralists near the border will do something similar? They might not have country on this side. That would prevent them.

1771. Is it not customary for squatters to make arrangements with one another with regard to shearing sheds? Not as a rule. In isolated instances it is.

1772. Do you think the duty imposed by the Queensland Government will be a bar to the development of a very large additional trade? Yes.

1773. Although the railway may be extended to Moree, the duty will prevent the development of the trade from Queensland? It will prevent a very great development.

1774. Sixty-two miles of railway carriage would be a great advantage to the people at the Moree end? Yes, and for the whole of that district.

1775. Although most of the wool at present comes to Narrabri by road, it would come by rail if the line were constructed here? Yes.

1776. Would you send your wool to the nearest station? Not always.

1777. Where there was a difference of 60 miles? Yes, certainly, where there was such a difference as that; but if the railway were 100 miles away on a bad road and 150 on a good road, the carriers would be likely to take the good road. A lot of wool from Inverell and about there, instead of going direct into Glen Innes, goes into Tamworth.

1778. I should like you to ascertain definitely what number of sheep your company are interested in; 12,000,000 sheep is almost one-fourth of the entire number of sheep in the Colony? I think I must have overstated the number, but I will look into the matter again and make my statement correct.

1779. You stated that you were familiar with the travelling stock route? Yes.

1780. If the railway were taken along the travelling stock route would it serve the country better than the direct line? I think so.

1781. You would not advocate the construction of a line along the travelling stock route? No.

1782. You favour the Gurlough Point route in preference to either of the others? Only as far as Gurlough Point.

1783. *Mr. Humphery.*] That is, as part of your suggested line north-west? Yes.

1784. *Mr. Davies.*] Are you aware that the Department say that that line would cost more than the proposed line? Yes.

1785. Do you think it would be wise for the Government to make 20 or 30 additional miles of railway at a cost of something like £500 a mile? I do not think that the line which I propose has been surveyed.

1786. Three or four surveys have been made, though not exactly along the route that you propose; the first was estimated to cost £500,000, while the proposed line will cost £153,000. I do not know anything about the figures.

1787. Do you not think it would be prudent to take the line to Moree in the most direct way? If Moree alone is to be served.

1788. If the country to the north is to be served? Yes, and if you do not want to take the country to the west into consideration.

John Harper, Esq., Goods Superintendent, Department of Railways, sworn, and further examined:—

1789. *Mr. McCourt.*] You made an estimate of the revenue likely to be obtained by the proposed line? Yes.

1790. I suppose you know the amount of wool coming into Narrabri from each station? Yes; approximately.

1791. A large number of witnesses have stated that all the traffic to the west of Millie down to Narrabri, instead of coming on to the proposed line would continue to go to Narrabri by road? I am very much inclined to doubt it. The wool will be carried by train for 2d. a mile, while it would cost 6d., 8d., and 1s. a mile to take it by road. I feel sure that the cheaper rate would be availed of.

1792. Do you base that opinion on the experience which you have obtained in connection with other lines in similar country? Yes.

1793. What do you estimate will come to Gurley station? Two thousand tons of wool.

1794. And to Woolabrar? Six hundred tons.

1795. And to Edgeroi? That wool is included in the 600 tons.

1796. Would any wool come in from runs on the eastern side of the line? Some would come from Terry-Hie-Hie, and the stations as far down as Warialda. That wool we do not get now at Narrabri.

1797. Will you name the runs on the eastern side of the line which would send to Gurley? Terry-Hie-Hie and Gurley. Binuguy will probably come into Moree or some station further north. Yaggaba would come in either at that point or further down.

1798. That is all on the east? Yes; there are some further north-east which would come into Moree.

1799. What runs on the western side would send to Gurley? I expect that Malaraway, Minnaminane, Mungyer, Bunna Bunna, and Milton Vale would send to Gurley, and so probably would Oyreel; but I have not allowed for Oyreel, although it sends away 3,500 bales. It is closer to Gurley than anywhere else, but I have regarded it as a bit doubtful, and have excluded it. I have also excluded all the stations on the river frontages. I should fancy that Collymongool would probably come in, but it is hard to say how the north-western stations beyond the Barwon would be affected by the line, and whether they would come into Gurley or into Moree.

1800. How far to the west would the furthest station be from Gurley? About 70 miles to the Namoi.

1801. How far from Narrabri? About 93 miles.

1802. You think it would send 70 miles to Gurley and pay for 45 miles of railway carriage rather than send 93 miles to Narrabri? Yes; because the railway would carry the wool for 2d. a mile. The teamsters could carry it as cheaply as that.

1803. What holdings would send into Woolabrar? I base my estimate on the mileage. I estimate that 4,000 tons would come 64 miles—the whole distance—2,000 tons 45 miles, and 600 tons 32 miles. That breaks up the distance proportionately.

1804. If the holders of some of these properties had sworn that they would continue to send to Narrabri, what would you say? I should be sorry to say that what some one has sworn to would not occur.

1805. You think that when the line is constructed their practice may be different? I fancy that they will take advantage of the railway at the nearest point. That has been our experience in the past.

1806.

J. Harper,
Esq.

13 Dec., 1893.

- J. Harper, Esq.
13 Dec., 1893.
1806. You are now speaking of wool alone? Yes.
1807. Have you estimated that any fat stock or store stock will come to the stations along the line? No; I have estimated that rather in a general way. I have taken less than the total mileage and reckoned the whole of the stock in the district. I have put the cattle traffic down as 400 trucks at 21 and 100 trucks at 15—the one is for the through distance and the other is for the intermediate distances. Sheep I have put down as 2,000 trucks for the whole distance and 1,400 trucks for the intermediate distances. I have based my estimate on the quantity of stock that came into Narrabri during the last twelve months. Every consignment of stock is accompanied by a travelling permit, which is handed into the station-master, and we are thus able to tell where the stock comes from.
1808. Have you returns in your office showing the stations from which the wool comes? Yes. The following is a return of the wool that actually came from Narrabri last year from these districts:—

Statement of wool despatched from Narrabri, season 1892-3.

Station.	Bales.	Station.	Bales.	Station.	Bales.	Station.	Bales.
Burbah	700	Combadello	597	J. A. Woolshed ...	116	Terala	437
Bullamon	239	Collymongle	736	Laural Vale	121	Tery-Hie-Hie	470
Burren Burren	174	Cowra	151	M.	130	Tarleeeri	519
Belle Vale	162	Dumeindi	159	Meroc	235	Woodlands	221
Bangate	753	Dobikin	402	M. L. Y.	539	Warby	150
Bulyeroi	141	Dunumbial	774	Mungyer	1,000	Whalan	439
Bunna Bunna	1,203	Doondi	73	Midkin	2,645	Webolabola	417
Bogumildi	1,019	E. W. D., Moree... 348		Moorelands	223	Willarie	247
Boolooroo	172	F. & A. G., Moree.. 100		Migan	376	Werrina	393
Bunaba	536	Goonal	646	Mungie Bundie... 1,184		Wirral	1,464
Cubbie	815	Glenroy	416	North Benarba... 300		Welbon	1,366
Coln Lee	148	Gurley	1,865	Noondoo	2,456	Welbondonyah... 848	
Crothers, H. A. 294		G. & J. Jurd..... 264		O'Glerie	111	Werribilli	122
Conroy Ketah	207	Groolamein	212	Piongobla	244	Yarawa	804
Carrington	100	Groolanna	587	Rosewood	105		
Currawilngghi	543	Jew's Lagoon	191	Talaba	114	Total	33,639
Curragundi	399	Jaw Ba	230	Tycamah	437		

To that total has to be added all clips under 100 bales which are not included in the list, and 4,000 bales from the Australian Pastoral Company, which went in another direction the year for which this return was made out, but which this year has come to Narrabri, making the total number of bales 39,000.

1809. How much of that wool came from the district north of Narrabri? Practically the whole of it. None of the stations having frontages to the river are included. Oyreel is not included.

1810. Would any of the wool come from south of Gurley? Yes; the Edgeroi wool would. There are several stations south of Gurley; Dobikin is one of them.

1811. Would not the wool from any station south of Gurley be likely to go to Narrabri? The Killarney wool would go to Narrabri, because their sheds are only 5 miles from Narrabri. The Edgeroi wool would be trucked on the line, because there will be a siding at Edgeroi.

1812. Would the people to the west of Edgeroi come into Narrabri? No; Bunna Bunna and Dobikin will come into Woolabrar.

1813. Are they west of Woolabrar? A little north-west.

1814. How far would that be from Woolabrar? Twenty-six miles, approximately.

1815. They would not be much further from Narrabri? They would be about 42 miles from Narrabri. I got my information as to where the wool would come in from the carriers' agents, who know the roads and the trend of the trade. Having located the stations, I asked them how the wool would come in. I was particularly careful in selecting among my informants a gentleman whom I knew to be adverse to the construction of the line. He gave me Oyreel amongst others as likely to send into the line, but I rejected it, because other carriers' agents said that it would not come in.

1816. The carriers' agents practically determine where the wool shall come in? They have a better knowledge than anyone else could have.

1817. But they determine what station the wool shall go to? To a certain extent they do, but that is determined more by the rates of carriage than anything else.

1818. You have estimated the passenger traffic at 6,000? Four thousand at 7s. 6d.—1½d. per mile—and 2,000 at 5s.

1819. That would be from Moree? That is the whole distance; but the rate would be higher than that.

1820. Have you estimated what passenger traffic will come in at Gurley and the other stations? No; I have estimated the traffic for the whole distance, and taken a reduced rate to balance the short mileage.

1821. That must be a haphazard estimate? You mean as far as the numbers are concerned?

1822. Yes? No; I do not think it is. It is based on our experience in connection with districts similarly situated as regards population.

1823. You estimate that there will be about twenty passengers in the day? About eighteen a day.

1824. Are you aware that there is only one coach running now? I do not take much notice of that, because the railway generally develops that traffic. At the present time a great many people use their own vehicles.

1825. You do not think that you have over-estimated the traffic? No.

1826. You only propose to have a passenger station at Narrabri proper? Yes; but I do not think that the Commissioners have arrived at any definite decision.

1827. If the railway is constructed, do you think that the people at Narrabri proper will be satisfied with a passenger station;—will they not, after the line has been opened a few months, demand a goods station? No doubt they will have one for the town traffic.

1828. Its construction will entail further expense? I think a siding and a small shed have already been arranged for.

1829. So that facilities will be given for the local goods traffic? Yes; I know that that was contemplated. I have not seen the estimate since.

1830. *Mr. Davies.*] In making the inquiries on which you base your estimate, did you place yourself in communication with the holders of station property and the people residing in the district which will be served by the railway? Not generally. I was able to get the information from the books at the railway stations.

1831. You did not put yourself into communication with the local people? I did along the line of route.
1832.

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1832. Whom did you see? Mr. Gordon at Edgeroi, and several people at Narrabri. I considered that the carriers' agents were the best people from whom to obtain information as to the trend of the traffic. I also called at Gurley station.
1833. *Chairman.*] Did you see the carriers' books as well as take their statements? Yes.
1834. *Mr. Davies.*] Did you see Mr. Murphy, a large selector holding 30,000 acres at Jew's Lagoon? No.
1835. Did you see Mr. Halse, the secretary to the railway league? No; I did not see him. I had nothing to do with the various routes which have been suggested; I simply reported on the probable traffic which would be earned by the proposed route. I got my information whenever I could from our own books, and that, after all, is the most authentic information.
1836. You rely more on the information obtained from your own books than upon what you could obtain from the people along the route? Yes; I made a general observation of the country to ascertain whether there were any natural or physical obstacles which would prevent the traffic from finding its way to the line.
1837. You do not usually make inquiries from the people who are likely to use the line? Not when I have other sources of information. It would take up too much time, and the information would not be so accurate as that which we can get from our own books. We take just as much local knowledge as will assist us in coming to a conclusion. It is not necessary to see everyone.
1838. But in travelling you see the country and meet the people who are likely to be served by the line? If you attempted to see all the people I am afraid you would not get as good a result as if you saw only two or three well-informed individuals. By the aid of our books and the books of the carriers' agents we can identify the consignees of every hundredweight of goods passing over the line.
1839. What freight would be charged on wool from Narrabri to Moree? Two-pence per ton per mile is about 10s. 6d. for the whole distance.
1840. At present they are paying what? In some cases about 1s. a ton. Freights are a bit lower now than the Union is broken up. Probably they are as low as 8d. or 10d. now.
1841. What freights were charged before the Union was broken up? The Central Australian Union charged £1 10s. for the first 100 miles. I think, in the Moree district, the rate was 1s. a ton per mile up to 60 or 70 miles.
1842. Two-pence a mile a ton would make the railway rate 10s. 6d. for the whole distance, while at 1s. per mile per ton the rate would be £3 10s. to £4? Yes.
1843. The Department, therefore, think that the wool will come whichever way is cheapest? Yes.
1844. You are strongly of opinion that cheapness and speediness of transit will induce people to send their produce by the railway? Yes.
1845. You have already expressed your opinion about the direct route? Yes; on general grounds.
1846. You recommend it as the best for general purposes? Yes.
1847. *Mr. Humphery.*] I think you estimated that 2,000 tons of wool would go to Gurley;—how many tons would go to Moree? Four thousand tons.
1848. How many to Woolabrar? Six hundred tons. We should get altogether 6,600 tons, and 800 tons which at present go to Glen Innes from the neighbourhood of Boggabilla.
1849. You give Moree credit for nearly twice as much as the intervening station? Yes.
1850. *Chairman.*] How far down the river do you think trade will come to Moree—from Mungindi and Mogil Mogil? I think it will come into Mogil Mogil, but I have excluded most of those stations. That wool would come into Gurley.
1851. Do you think that traffic from Mungindi would go to Moree? Yes.
1852. Between Mungindi and Mogil Mogil, some might go to Moree and some to the station nearest Millie? Yes; to Gurley.
1853. You have not reckoned the traffic from places south of that, towards Collarendabri? No; I have not included it.
1854. Are you aware that the traffic now comes from Boolcarrol to Narrabri? Yes.
1855. You have not taken it into consideration as feeding the proposed line? No; I have not considered it at all.
1856. Has much traffic come to Narrabri this year from the north-western district which did not come before;—you mentioned the Australian Pastoral Company's wool, but is there any other? None of any consequence that I can think of, but I should not get the returns in till the end of January.
1857. You attribute that extra trade to the breaking up of the Carriers' Union at Narrabri, and also to the fact that the river facilities are not so good? The wool I speak of never went on the river at all. I think the Queensland wool-owners strongly resent the action of the Government in imposing a duty upon exported wool, and, things being nearly equal, they have shown their feeling by sending their wool to us.
1858. As a matter of fact, does not a lot of the wool about Collarendabri avail itself of the river when suitable to get to Bourke or Brewarrina? Twelve thousand bales were taken from Walgett last year. There have been five or six boats up the river, and 2,000 or 3,000 bales must have gone down from the Barwon above Walgett.
1859. The line of demarcation is somewhere between Walgett and Collarendabri? Yes. Boats have been up to Mungindi.
1860. But that is very exceptional? It is, under existing circumstances. I was speaking to a gentleman to-day who is interested in the business, and who said that next year, if circumstances are the same, he will exploit it much more thoroughly, and he is already making preparations with that object.
1861. Having had time to still further consider your estimate, you do not wish to modify it in any way? No.
1862. *Mr. Humphery.*] In making your estimate, have you carefully excluded all traffic that would go direct to Narrabri, even if the proposed line were made? Yes; all that I thought might reasonably be expected to go direct to Narrabri.
1863. *Mr. O'Sullivan.*] In order to make this matter clear, I should like to ask whether you expect any traffic from a number of stations which I should name, and which lie to the west of the line—Molly? I have excluded Molly.
1864. Wee Waa? That is excluded.
1865. Drildool? That I have excluded.
1866. Millie? That I have excluded.
1867. Boolcarrol? That I have excluded.

- J. Harper, Esq.
13 Dec., 1893.
1868. Nowley? That I have excluded.
1869. Pilliga? That I have excluded.
1870. Bunna Bunna? That I have included.
1871. Merah? That I have excluded.
1872. Meroc? That I have excluded.
1873. Mungyer? That I have included.
1874. Oyreel? That I have excluded.
1875. Collymongle? That I have included.
1876. Mercadool? That I have excluded.
1877. Bugilbone? That I have excluded.
1878. Yarraldool? That is chiefly a cattle station. There are only about 1,200 sheep on it.
1879. Goangra? That I have excluded.
1880. Eurie Eurie? That I have excluded.
1881. Gorian? That I have excluded.
1882. You have only taken in three of the stations to the west? That is all.
1883. *Mr. Neild.*] Would not the greater number of those stations be convenient if the line were extended further to the west, instead of being taken along the proposed route? Yes; no doubt the greater number of them would.

THURSDAY, 14 DECEMBER, 1893.

Present:—

JACOB GARRARD, Esq. (CHAIRMAN).

The Hon. WILLIAM HENRY SUTTOR.

The Hon. JAMES HOSKINS.

The Hon. FREDERICK THOMAS HUMPHERY.

The Hon. JOHN DAVIES, C.M.G.

The Hon. WILLIAM JOSEPH TRICKETT.

WILLIAM CHANDOS WALL, Esq.

WILLIAM McCOURT, Esq.

JOHN CASH NEILD, Esq.

EDWARD WILLIAM O'SULLIVAN, Esq.

CHARLES COLLINS, Esq.

HENRY DAWSON, Esq.

The Committee further considered the proposed Railway from Narrabri to Moree.

John Taylor, Esq., Glen Alvon, Murrurundi, sworn, and examined:—

- J. Taylor, Esq.
14 Dec., 1893.
1884. *Chairman.*] You are engaged in pastoral pursuits? Yes; a little.
1885. And have been for a number of years? Continuously since 1857.
1886. Are you familiar with the country through which the proposed line passes, and which will be served by it? I am.
1887. Is your knowledge of a recent date? I have known that district for twenty years—ever since I went there from the Murrumbidgee.
1888. Have you any interest there? I do not own an acre of ground there,* but my sons hold Dobikin, which I gave them as a gift a few years ago. I used to have a station at Mungindi, which some years ago I sold to Mr. Lomax. I had a station at Walgett for some time, and another a little further to the west, and I used to drive all through the country at the time when the railway did not come further north than Murrurundi.
1889. Will you tell us whether you think the line should be constructed as proposed, and if the route suggested is the best in the interests of the country? The direct line seems to me one that could be cheaply made and easily worked, but there are only two or three people interested in the country through which it passes, and I have come here to try to prevent its construction. We have already in the Colony a large number of lines which do not pay, and I advocate the construction of this line where the good country is. By the proposed route you first go through Killarney; but no one on that station will use the line, because it is so near to Narrabri. Then you come to Edgeroi, which is not very far from Narrabri, though of course the people there will use the line, and Dobikin will use it and be glad to get it. The next property passed through is Gurley, and the line will benefit them. Tycannah too, will use the line, and then you get to Moree, the terminus. There is no one to the east of the line. It will go through bad country and scrub for 10 or 12 miles. That country will not grow wheat. The soil is a sort of laminated stone, which gets as hard as cement. The belar country is no good. I had some fenced in for many years, but there was never anything but wallabies on it. There are no selectors towards the mountains, but wherever you go to the west you will catch the people. The people down about Millie, and near Walgett, and down near what they call the Big River, and at Mehi and Mungindi, will, if the proposed line is constructed, traverse a road parallel to it until they get into Narrabri. If, however, you take the railway *via* Gurleigh Point or the travelling stock route, they will come to it and take their loading off there instead of going on to Narrabri. What is the good of making a railway for one or two people?
1890. Your objection to the proposed line is that it only goes through four properties, which are sparsely populated? Yes.
1891. And that if the railway were taken further to the west, *via* Gurleigh Point or the travelling stock route, a greater number of people would be served? Yes.
1892. Presuming that the line is to be constructed primarily to give access to the country north of Moree, your objections to the proposed route fall to the ground? I cannot see why you should help the north and leave the west out.
1893. That is not the point;—I say, presuming that the railway is to serve country near Moree and to the north it? There is certainly country to the north of Moree that the railway would serve, but it would serve it better by going to the west.
1894. If you were a run-holder to the north of Moree, would you not object to have to pay for 15 additional miles of railway journey? No. When I had a station at Mungindi my teamsters and all the trade from there went straight to Millie. That was the point we used to make for when going to Narrabri. We used to leave out Moree altogether; we never looked at it.

1895.

* NOTE (on revision):—I have 424 acres 2 roods C. P. transferred to me. I did not think of this at my examination.

1895. If you held country at Moree or to the north of Moree, would you not object to having to go 15 miles out of the way in order to go to Narrabri? How could I have any distance to go out of my way? I would be at the starting-point.

J. Taylor,
Esq.

14 Dec., 1893.

1896. What I mean is, would you not object to a route which was 15 miles longer than the proposed route? That is another thing, and no doubt a man looks to his pocket nowadays; but, in my opinion, that 15 miles would bring in more to the railway than the whole distance on the proposed route. If I were a millionaire, and you said to me, "Build a railway for your own advantage," although perhaps I would save £100,000 by taking the line direct, I should make £200,000 by going 15 miles to the west. At any rate, that is my opinion.

1897. Do you think it would be any great advantage to the country out west if the line were taken *via* Gurleigh Point? I think it would be into their very hands. It would help every one of them.

1898. Would not the principal portion of that trade be intercepted at Gurleigh Point? Not at all. That trade would come to the line at other points. The people there would come into Millie. Millie would be the great station.

1899. Do you know what direction the traffic takes from Collarendabri and the district a little to the north and south of it, in order to reach Narrabri;—does it go *via* Millie, or *via* Boolcarrol? Through Boolcarrol, about 25 miles from Narrabri.

1900. The great bulk of the trade from the west reaches Narrabri *via* Boolcarrol, and not *via* Millie? It does now; but it would not do so if the Gurleigh Point line were made. It would then come to Millie or Gurleigh Point. The Walgett traffic would run up the Pian Creek, which is the direct line to Millie.

1901. Your opinion is that if the railway were constructed *via* Gurleigh Point, it would intercept the western and north-western traffic near Millie, and not at Boolcarrol? You would have a very fair station near Boolcarrol. The Walgett traffic would come that way, and you would get it. They could not pass the line without crossing it, and in that case they would unload their goods when they came to it; but if the proposed line were constructed they would run parallel with it, until they came to Narrabri.

1902. If the proposed line could be constructed for £70,000 or £80,000 less than a line *via* Gurleigh Point, and an annual loss is estimated even upon it, what would you say? I would rather pay the £80,000 extra and go to the west. It would pay better in the end by serving more people and opening up good selecting country. There is no selecting country available to the east of the proposed line.

1903. Would not a branch line from the proposed line, starting 15 miles north of Narrabri, and going in the direction of Collarendabri *via* Boolcarrol serve the western country better than a mere deviation *via* Gurleigh Point? I would go to Collarendabri. That is the real line to construct. By going there you would get the Queensland traffic.

1904. You consider that the traffic out from towards Collarendabri is of very much larger magnitude than the traffic from Moree and the country to the north of it? I do.

1905. You would construct a line in the direction of Collarendabri and a branch from it to Moree? No. I understand that you are going to Moree; therefore I say, do not go straight there, but go more to the west and get the western traffic. You might take a branch from that line if you wanted to do so; but you must get to where the people are now.

1906. You have given it as your opinion that the volume of the traffic from the Collarendabri district which now comes to Narrabri *via* Millie and *via* Boolcarrol is of very much greater magnitude than the traffic from the north of Moree? You will get plenty of traffic from Moree; but in my opinion there is more to be got by going to Collarendabri.

1907. Therefore, you think that the first extension of the line from Narrabri should be in the direction of Collarendabri? Yes.

1908. Do you think that the present and future trade of the country lying north of Moree justifies the construction of a railway to Moree? I think it does.

1909. But you think that there is not only a justification for a line to Moree, but also for a line going out in the direction of, but not actually to, Collarendabri? I would rather keep lower down. In the meantime you will get the Moree traffic, although it will have 15 miles more to go, and you can wait for the next twenty years to run a branch line to Collarendabri.

1910. By doing that would you not be loading Moree and the country to the north of it with 15 miles of unnecessary carriage for all time? I do not pity them a bit, because I think they would be very well off in any case. We should not be handicapping them at all.

1911. As a matter of fact, would you not be loading the Moree trade with 15 miles of extra haulage? No; they have nothing to fear. It would pay them well to use the line; and I say let them pay for those 15 miles. Other people have to pay for a much greater haulage; and we, who are making the railway, have a right to see that it will be profitable. It will not be profitable if taken in any other direction.

1912. Do you wish to modify your evidence at all in regard to the requirements of Moree;—I asked you just now whether the importance of Moree and the country north of it justified the construction of a railway to Moree? It would not do so unless the line went down to help the people to the west.

1913. You do not think there is sufficient trade from the Moree district and the district to the north of it, either now in existence or to be developed, to justify the construction of a direct line; but that there would be justification for the construction of a line more to the west? Yes.

1914. How long did you reside in this district? Well, if I have not actually been residing there continuously, I have been constantly through the district for the last twenty years, up to the present time.

1915. Have you seen any floods there? Yes, all the floods that have occurred, big and little, but none of them have been very big. I have seen floods round Narrabri; but never any out the other way.

1916. If witnesses have stated that the country further to the west is more liable to inundation than the country on the proposed line, do you agree with them? I do not. When there is heavy rain the water runs more rapidly near the mountains, because there is a greater fall there; but lower down it spreads out more. Where it would be a foot deep there it is not half an inch deep 10 miles down.

1917. Is it not a fact that on the eastern side of the line the water is confined by channels, while to the west it spreads out over the country? You have more channels to the east than to the west, but the channels to the west are bigger. On the country to the east there are a number of little creeks; but they converge into one or two big creeks, so that to the west only one or two bridges would be required.

1918. Witnesses have stated that the channels to the east are more defined and more easily negotiable than those to the west? The channels to the west are deeper and not so numerous. While on the proposed line there may be fifteen or twenty watercourses, there will not be more than five or six lower down.

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1919. Where does the water go? The smaller channels converge into larger ones. Just as the Murray takes all the water from a number of rivers, so here a few channels to the west take the water from a number of channels to the east. At Millie there is a deep creek; but on the east of the proposed line the creeks are not so well defined. They are up in an hour and down again, and would completely wash away the railway without a large number of culverts.

1920. If witnesses have stated that the water to the west of the travelling stock route spreads over the country in undefined channels, you do not agree with them? No, I do not. They have better channels lower down.

1921. We understand that you do not think that there would be any justification for connecting Moree with Narrabri by a railway unless the line tapped some of the western country? I should say not.

1922. Would you go further than Gurleigh Point to the west? The more you go that way the nearer you get to Walgett, which will want a railway some day.

1923. Are you not aware that the Walgett trade goes down the river and to Dubbo? That is only now and again; and whenever there is a bit of a flood the steamers strike against the bridges.

1924. Are you aware that none of the trade from Walgett comes to Narrabri? It must do so. If the trade does not come from Walgett it comes from the immediate neighbourhood of that place—from stations not more than 5, 6, or 10 miles from Walgett. Would you have them go to Dubbo over bad country and a very bad track; you must come towards Narrabri, and the construction of a line towards the west would help that traffic.

1925. *Mr. Davies.*] Does the proposed line go through your run? I believe so, from end to end; but according to the map before the Committee Dobikin lies to the west of it.

1926. Is that one of your objections to the proposed line? No; its construction would benefit us; but I shall be dead in a few years, and the railway will be there when the whole of us will have passed away; therefore I wish it to go in the best direction.

1927. You are aware that the betterment principle is to be applied to all property within a certain distance of the line? Yes; but I think we should all pay alike. Those living near the old line should pay as well as those living near new lines.

1928. Would you, as a property-holder, acquiesce in the application of the betterment principle, should this line be constructed? I do not know that I understand the principle sufficiently well to be able to say yes or no. As I understand it, if a railway goes through the property of a man who owns 100 acres he will have to contribute something each year towards its cost.

1929. Yes, a charge extending over 100 years? People coming after him will have to pay too. I say to that, that if a man is benefited by the construction of a line he should pay for it.

1930. You think that the principle should be applied to the construction of all future railways? I do.

1931. You have already told us that the proposed line would not serve the settlers on the north-west? It will not serve them on the west but will on the north-west.

1932. Because it would not reach the settled portions of the district? That is so.

1933. If the primary object of Parliament is to reach Moree, which would be the better thing to do—to take the longest, or the shortest route? I should take the longest route.

1934. Although it would entail a greater expenditure? It would be the best in the long run, and would serve most people. If I were spending my own money I should take the line to the west.

1935. What is the general character of the country along the proposed route? You go through good country for a bit. The country for 10 miles round Narrabri is farming country, with a loamy soil. Then you get on to the black soil, and on Dobikin you have 10 or 12 miles of scrub that is not good for anything.

1936. Not even if it is cleared? No; it is a sort of cement.

1937. Beyond that scrub the country is fairly good? You come on to fair land again; but not farming land.

1938. Is it as good as the land to the north-west? When you get on to Gurley the land is as good as you could wish for; but to the west every acre is good. There are patches of farming country, but no farming is done there.

1939. It does not pay because there is no access to market? Yes.

1940. What wool did you truck from your station last year? Five hundred bales.

1941. That found its way by road to Narrabri? Yes.

1942. If the proposed line were constructed, would you send your wool to Woolabrar station? We should tumble it on to the train at the nearest station.

1943. Is not the train carriage cheaper than the road carriage? I am not sure of that. I have had stuff taken from Dobikin to Gunnedah for £2 a ton, and it costs nearly as much as that now to take it to Narrabri.

1944. How many miles is it from Woolabrar to Narrabri? Thirty miles.

1945. The railway charge is 2d. per mile for wool? The teams cut it down cheaper than the railway; but we want a railway.

1946. Are you aware that it would only cost 10s. 6d. to take wool by train from Moree to Narrabri, whereas the teamsters charge from £3 10s. to £4? The teamsters are carrying it for £2.

1947. Well, there is a great difference between £2 and 10s. 6d.? People will pay more to a railway because it is quicker.

1948. But railway carriage is much cheaper? I do not think that it is cheaper.

1949. There is a big difference between 10s. 6d. and £2 a ton? Do you mean to say that the railway carriage would be cheaper than the teamsters charge at the present time?

1950. Yes? I think the railway carriage would be more at the present time. The carriers charge £2 a ton from Moree to Narrabri just now. They will take back loading for that.

1951. According to the railway authorities they would only charge 10s. 6d. a ton—you would rather pay that to a railway than £2 10s. to the carriers? Certainly.

1952. You would send your wool from the nearest point on the line? That would not be more than 2 miles away, but if the railway were to come past my door I would not advocate the proposed line.

1953. What do you regard as a proper train service? The proposed line would suit us; but I have come here to show you how a line could be made which would suit a lot of people better. Everyone will have to bear the cost of this railway in some way or other, and we should try to find out what is the best way to take it.

1954. Do you think that you are better informed in regard to these matters than the railway officials? Yes; the railway officials and people in Sydney know a great deal, but they do not know everything. I know what I am talking about. I am like a soldier who has fought out a battle.
1955. *Mr. Wall.*] You mean to tell us that if this line were taken 10 miles west of the proposed route it would gain a considerable amount of traffic? Yes.
1956. Do you think it is too much to ask people to bring their goods 10 miles to a railway;—the proposed line will be only 10 miles from the line you propose, and yet you say that the trade will not come to it? I do not think it will. The people will run right into Narrabri.
1957. *Mr. O'Sullivan.*] Would you kindly tell the Committee how many acres of freehold there are on Dobikin? I think about 20,000 acres have been secured there.
1958. How many acres are there in the leasehold area? There are 65,000 acres altogether on the run.
1959. How much of that land is held in reserves? A good deal.
1960. What is the area of the reserves? I do not know, but I suppose it would be 5,000 acres. I cannot carry those things in my head.
1961. *Mr. Dawson.*] Do you think a man travelling along a road would go 10 miles out of his way to get to a railway, instead of continuing on 20 or 25 miles? No. He would go right into the terminus, and make a little more money by doing so.
1962. It is not a fact that a man will always go to the nearest station? No; a man wants to come to town to get things from there.
1963. *Mr. Neild.*] With reference to the application of the betterment principle, would the construction of a railway enhance the value of land used solely for pastoral purposes? I do not think it would enhance it very much, but it might increase the value of it a little, though you could not afford to pay the extra money in order to grow wool. You might, if you went in for farming.
1964. A railway would improve the value of land used for agriculture? Yes; it is an advantage to have produce carried by it.
1965. Pastoral land would not be improved, because pastoral produce being either live stock or wool, can be easily removed long distances by road? Yes.

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Robert Edward Jones, Esq., M.I.C.E., Divisional Engineer, Department of Roads, and Bridges, sworn, and examined:—

1966. *Chairman.*] You for some time acted as Examiner of Public Works? Yes.
1967. While so acting you furnished a report, under date 17th June, 1891, on the group of proposed railways from Dubbo as far north as Narrabri? Quite so.
1968. *Mr. Neild.*] You appear to have reported on three proposed lines to connect Narrabri with Moree, and, according to your report, the longest line would be the least expensive;—you reported on a line, *via* Gurleigh Point, of which the length was to be 70 miles, and the estimated cost, £252,000; upon a direct line, 61 miles in length, and estimated to cost £283,000; and upon a line, *via* Rocky Crossing, 66 miles, and estimated to cost £268,000;—how do you account for the extra cost of the direct line; do you attribute it to the expense of crossing the river at Narrabri, or to the character of the country which it would traverse? These are not my estimates; they were furnished to me by Mr. Deane. For all the other lines into which I inquired I made my own estimates.
1969. You took the figures as they were given to you, without any investigation? Yes; but I happen to know that the increased cost of the direct line was very much due to the expense of bridging the waterways on it.
1970. The cost of bridging the waterways on the direct line was much in excess of the cost of similar works on the Gurleigh Point line? I speak of the estimates furnished to me. The direct line on which I reported is the permanently staked line. I did not inquire into the proposal now before the Committee.
1971. Did you go over the country? Yes.
1972. Did you go over the proposed line before the Committee? No.
1973. But, in going over the permanently staked line, you practically went over the proposed line from Edgeroi to Moree? I crossed it at different points.
1974. Did you go over the Gurleigh Point route? Yes.
1975. And over the travelling stock route? Yes.
1976. Is the soil alike on the three routes? Very much alike, though perhaps there is more basaltic soil on the direct route than on the Gurleigh Point route.
1977. Where are the water channels best defined—on the direct route, or on the Gurleigh Point route? On the direct route.
1978. You stated that it would be more expensive to cross the water-channels on the direct route than on the Gurleigh Point route? I was referring to the original direct route now known as the permanently staked line, not to the line before the Committee.
1979. Is the country more subject to flood on the direct route than on the Gurleigh Point route? I should say that the country on the Gurleigh Point route was slightly more subject to flood than the country on the proposed route.
1980. You form that opinion from your own personal observations, or from information which you have obtained? I have been over this part of the country several times. The district forms part of my road division, and I am in it repeatedly. I have not been there at the time of any high floods, though I examined these routes in 1891 just after the occurrence of a very big flood.
1981. Perhaps you will kindly state the limit of your division? It extends from Branxton to Tenterfield; then follows the Queensland border to Goodooga and Brenda; then goes to Brewarrina, Coonabarabran, Cassilis, and back to Branxton.
1982. Are you able to visit this portion of your division often? I think I have been to Moree three times this year.
1983. Is it customary for you to go there so often? I try to get across every four months.
1984. If Mr. Poate states that the water-channels are better defined along the Gurleigh Point route than along the direct route, you differ from him? I am talking of the water channels in time of flood, not under normal conditions. The Namoi, with its two banks, is well defined at the present time, but we have to deal with the channels in flood time: and the country to the west being very much flatter than the country to the east, a greater extent is flooded when the water gets over the banks of the creek.
1985. Would a greater sum be required for culverts, viaducts, and bridges on the proposed line than on

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- R. E. Jones, the Gurleigh Point line? It is rather difficult for me to say, because I have not seen a section of the water-ways on the proposed line. I saw the sections of the three lines on which I reported, but I have not seen the section of the line before the Committee.
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1986. Is the current of the creeks on the proposed line stronger than on the western line? That is a difficult question to answer.
1987. Are you aware of any difference? No; I am not.
1988. You do not know if the risk of washaways would be greater on one line than on another? No; I should say it would be about equal. In the country to the west, when the water gets over the banks, it spreads, and a great deal of it becomes still water.
1989. Would the same remark apply to water on the direct line? No; about Narrabri, where you would have to cross both the Namoi and Narrabri Creek, the water is more confined, and the velocity consequently greater.
1990. The velocity would be greater in streams flowing from the hills? The greater the fall in proportion to the distance the greater the velocity.
1991. We are told that about one-third of the land between the proposed line and the ranges to the east of it is scrub land;—would that be so? I should think that is somewhere near it.
1992. Is that land in any useful occupation? It is used for pastoral purposes.
1993. Does any grass grow on it worth speaking of? There is not so much grass, but there is very good timber. There is good ironbark at the back of Terry-Hie-Hie.
1994. That is to the east? Yes.
1995. Are there not some important forests along the river to the west of Narrabri? Yes; on the south side of the river, at the back of Wee Waa and Pilliga, there are some very good ironbark forests.
1996. Would the Gurleigh Point route give access to those forests? Yes.
1997. The proposed route would not? No; not to the forest about Wee Waa.
1998. Would the forests you speak of be likely to give an important traffic to the railway? I cannot say that they would give an important traffic. They are very extensive, and you would want to go through the heart of them to serve them. Pilliga is 64 miles from Narrabri, and these forests extend beyond that, so that even a line to Gurleigh Point would not do very much towards opening them up.
1999. To secure that timber it would be necessary to take the line much further west? Yes; 15 miles would not do much where there are long sticks of timber to be carried.
2000. We understand that there is more settlement on the western line than on the direct line? That is so.
2001. I think you took it into consideration in making your report? Yes; the settlement and the cost were the main things governing my recommendation.
2002. You reported in favour of a line to the west in place of a direct line? Yes.
2003. You considered the amount of existing settlement; but did you take into consideration the probability of future settlement? Of course that is only hypothetical, and everyone must have his own idea about it.
2004. From your knowledge of the district do you think that, in the future, settlement on the Gurleigh Point line will be greater than settlement on the direct line? I may say that I do.
2005. Why? Because there is more Crown land, and the land is of pretty well equal value all through, and, therefore, I think, capable of carrying a larger population than there is likely to be on the direct route, where at least half of the holdings are freehold. I do not think there would be very much settlement towards the mountains.
2006. The whole trend of settlement is westward? Yes.
2007. You seem also to have paid a great deal of attention to the prospect of trade to and from existing towns, and in your report on the line from Narrabri West to Gurleigh Point, you mention a considerable number of towns that are likely to be served by that line;—would an equal number of towns be served by the direct line? No; for instance Wee Waa would not be served, and neither would Pilliga, and Millie would be very imperfectly served. The other towns mentioned in my report lie north of Moree, and, with the exception of Collarendabri, would be served by it. I could scarcely say that Collarendabri would be served by the proposed line, and you would also have to exclude Warialda, especially in view of the probable construction of a line to Inverell.
2008. If that line is constructed, the Warialda trade need not be taken into consideration? That is so. I am referring, however, more to the district than to the town.
2009. If the railway is taken to Moree, and also to Inverell, will those places compete for the Warialda traffic? Only for traffic north of Yetman, and that only to a small degree.
2010. If the line is taken to Moree, and not to Inverell, will any trade that would otherwise go to Inverell come to Moree? Yes.
2011. And *vice versa*, I suppose;—would a line to Inverell take any of the Moree traffic if there were no railway to Moree? Yes, a small amount. It would take traffic from some of the stations lying north-west of Warialda, such as Gunyerwarildi, Yallaroi, and Tooloona. Those stations would possibly send to Inverell.
2012. *Chairman.*] The line of demarcation would depend upon which railway was made first? Yes.
2013. *Mr. Neild.*] It would also depend on the seasons? Yes, and the state of the roads. At present some of the traffic north of Yetman goes through Strathbogie on to Deepwater. The differential rates commence at Kentucky, so that instead of joining the line at Glen Innes, some of that traffic has gone through Vegetable Creek.
2014. There is a very good road that way? It is very good from Strathbogie to Deepwater; but not much has been done to it beyond that.
2015. You are aware that it is proposed to charge the proprietors of land in the vicinity of the line some part of its cost, the charge being spread over a number of years? Yes.
2016. Would the construction of the proposed line materially enhance the value of the properties through which it passed? I should not like to say that. It is a very difficult matter to deal with. In my report I have simply dealt with the enhanced value of Crown land. I could not touch the freehold land. Of course the Betterment Bill has altered all that.
2017. Would a railway increase the value of land used for agricultural purposes more than the value of land used for grazing purposes? Yes.
2018. That, I suppose, is due to the fact that the volume of produce from an agricultural district is infinitely greater than the volume of produce from pastoral land? Quite so; and the value of wheat per bushel is very much more in proportion to its bulk than is the case with wool.
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2019. And in one case you drive a great deal of your produce to market, while in the other you cannot do so? Yes.
2020. Consequently a railway is of more value to an agriculturist than to a pastoralist? Quite so.
2021. Have you any reason to suppose that the construction of the proposed line would lead to the cutting up of any large estates? There is land on them suitable for agriculture, and the construction of the line ought to lead to such subdivision.
2022. A great deal of the soil is black country, is it not? Yes.
2023. Is it of any value for agricultural purposes? The intermittent character of the rainfall is against agricultural pursuits, but near the hills the rainfall is greater.
2024. Do you know of any black soil country being used for agriculture? The river flats on the north coast are used for the production of maize.
2025. But that is not the same soil as this? No.
2026. Is not the black soil too sticky to plough when wet, and too hard when dry? The ordinary black soil would be so, but on Gurley and at other places along the route there is soil upon which, I believe, wheat could be grown if the rainfall were sufficient.
2027. You are referring to volcanic soil? Yes; and sandy soil.
2028. Are these patches extensive? I think I passed through some miles of such country.
2029. In the aggregate or separate patches? Separate patches.
2030. Is the country you speak of Crown land? I am not able to say, because I do not know where the division between the leaseholds and the purchased lands comes. I took out the acreage of every run when I was making my report. There are over 103,000 acres of alienated land on Gurley, and on the resumed area there are only 55,000 acres, so that the good land will be mostly freehold.
2031. Assuming that the Gurleigh Point route is 15 miles longer than the proposed route, and would, according to the estimate of the Engineer-in-Chief, cost £300 a mile more to construct, would the extra trade which it would get, and the extra advantages which it would confer on the settlement and prospective settlement, warrant its construction? According to my figures, the Gurleigh Point line is only 8½ miles longer than the proposed line. The Gurleigh Point line is 71 miles 62 chains, while the proposed line is 63 miles 50 chains.
2032. You consider that the present and prospective traffic on the Gurleigh Point route would justify its construction, although it is 8½ miles longer than the proposed route, and would cost £300 a mile more? As far as I can make out, the extra distance and the increased cost of construction would make it cost £43,200 more than the proposed route.
2033. Are you of opinion, under the circumstances, that the present and prospective traffic that it would serve warrant its construction? I would point out that in addition to the traffic on the Gurleigh Point line you would get 9 miles more haulage from Moree.
2034. That would be an extra charge on the people of Moree? Quite so. If the line were made they would have to pay for the 72 miles of haulage.
2035. Do I understand that the question is one which you feel disinclined to answer? I should have to work out the figures, and ascertain what the additional revenue would be.
2036. Do you think that the trade on the Gurleigh Point line would warrant us in constructing a line which is 8 miles longer than the proposed line? I must confess that I am inclined to think that it would.
2037. Is it customary in this Colony to seek the nearest connection between two towns, irrespective of all trade considerations? I do not think it is.
2038. In your knowledge has that plan been adopted in connection with the majority of our railways? I am not prepared to say.
2039. Has it not been rather the practice to take lines where they will serve the greatest population? I think that is generally the practice.
2040. It would be a new departure to consider the directness of a line and nothing else? In making my investigations I tried to ascertain which would be the best line for the collection of traffic.
2041. You hold that the Gurleigh Point route would gather a larger quantity of traffic, and more valuable traffic than the direct line, and you therefore prefer it? Yes, assuming that it would be 8 miles longer than the direct line. If it were 15 miles longer I should have some doubt on the subject.
2042. You studied these matters rather from the standpoint of the public interest than from an engineering standpoint? Yes.
2043. *Mr. Collins.*] How far is Gurleigh Point from Narrabri? Fifteen miles.
2044. What sort of country does the surveyed route go through? Not very good country.
2045. Would it not have been better to cross the river at Narrabri and go along on the north side of it? I am not sure as to the cost of crossing the river. It is not very large now; it has been greatly reduced.
2046. It was estimated that the cost of crossing the river would be £80,000, but the present estimate is between £5,000 and £6,000;—what do you say in that case? If you go westward to get this traffic there is no reason why you should not go on the north side of the river.
2047. Seeing that the country on the north side is better? Yes.
2048. Is there much settlement between Gurleigh Point and Boolcarrol? No; but there are a lot of selectors on Boolcarrol run.
2049. A sufficient number to warrant the construction of a railway there? Not to that particular place. When we speak of the line going westwards, it is not to tap any particular spot. You have to think of the Pilliga traffic, and the traffic from Wee Waa, Pian Creek, Jew's Lagoon, Thalaba Creek, and until some better communication is given by the Barwon, Collarendabri, and even Angledool.
2050. Do you not think that some consideration should be shown to the 3,000 inhabitants of Narrabri? Yes; I have stated in my report that Narrabri must suffer very much.
2051. *Mr. Naild.*] Wherever the line is taken? Yes.
2052. *Mr. Collins.*] But more particularly, if it is taken to Gurleigh Point? Yes; because if the proposed direct line were constructed, most of the traffic now coming into Narrabri would continue to come there.
2053. Did you not recommend a line from Coonamble to Walgett? Yes.
2054. Would not the traffic from a number of the places you have mentioned go to that line? No.
2055. Would not the Pilliga traffic go there? Pilliga is further from Walgett than it is from Narrabri.
2056. Would it not go to Coonamble? I do not think so.
2057. Pilliga is only 40 miles from Coonamble? I take Pilliga as the line of demarcation, and I was assuming that the Gurleigh Point line would be constructed, which would go nearer.

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2058. If the river were made navigable to Collarendabri, would not the traffic from that part of the district go by it? Wool traffic would probably do so. It is difficult to say what the charges and insurance would come to; but if the river charges were cheaper than the road charges the traffic would go that way.
2059. Seeing that they have differential rates on the Western line from Bourke, it would be cheaper to go there than to Narrabri? But a lot of the wool would go to Newcastle, and the rate to Newcastle is only £3 5s. 1d. The rate from Bourke is far more than that.
2060. You say that there is good agricultural country on the proposed line? Yes.
2061. If the reserves there are thrown open, would a large settlement be created? If the runs were subdivided settlement would be created.
2062. Which do you think would be better;—for the line to be taken direct to Moree with a branch to the west, or for the Gurleigh Point route to be followed? What you propose would answer the same purpose as the Gurleigh Point route; but the working expenses would be more.
2063. But a direct line would be more advantageous to the people about Moree and the district to the north of it? Yes, because they would not be handicapped by any extra mileage.
2064. I understand you to say that if the crossing at Narrabri will cost between £5,000 and £6,000, the line might cross there instead of at Gurleigh Point? It would be far more expensive to cross at Gurleigh Point than, according to Mr. Deane's estimate, it would be to cross at Narrabri.
2065. *Mr. McCourt.* You have had a considerable amount of experience in road-making in this district? Yes.
2066. What depth of metal do you put on roads there when you are forming them? Nine inches at the least, but with the narrow tires and the tremendous loads that they have there the wheels cut through like a knife.
2067. When a road is formed and the soil thrown up in the middle, does it get very hard? Yes; some time after rain it gets very hard.
2068. During flood time, when it gets soaked, does it dissolve? Generally, in dry weather, it gets very hard, and opens out in fissures in many places, keeping a hard crust.
2069. But if it is flooded after it has consolidated does it dissolve? It becomes very soft.
2070. And almost dissolves? It is boggy.
2071. Do you think that 3 inches of ballast would be sufficient under the sleepers there? I was employed on railways all my life till I came out here, and this is an experiment which I should be very glad to see tried. The quantity of ballast proposed is far less than I have ever known to be used; but I take it that the 3 inches will be placed under the sleepers.
2072. There will be only 3 inches of ballast altogether? A train passing over a line has not the same effect as a waggon drawn by horses. The narrow wheels of a waggon plough up the surface of the road, while the weight of a train is not transmitted directly to the soil because of the sleepers and rails.
2073. But the engines would weigh 60 tons? I understand that they will be lighter than that—about 30 tons.
2074. Do you think that 3 inches of ballast would be sufficient? I am not prepared to say that I do. I should like to see more used.
2075. *Chairman.*] You are aware that the speed of the trains will be limited to 15 miles an hour? Yes.
2076. Would that affect the stability of the road to a less degree? The oscillations would be less.
2077. *Mr. McCourt.* Would you advise the use of an extra number of sleepers? Yes. There is no doubt that ballast in this case will be a very expensive item.
2078. Would you advise the use of sleepers 18 inches apart? I would not have them as close as that; I would say 2,000 to the mile.
2079. *Mr. Dawson.*] What do you mean by the answer that you gave to Mr. Collins with regard to the injury likely to be done to Narrabri? If the line is taken *via* Gurleigh Point the traffic which now comes to Narrabri will go there no longer, except traffic from the east, such as that from Terry-Hie-Hie, Rokeby Creek, and so on. If, however, the proposed route be followed, the traffic from Wee Waa, Pilliga, Pian Creek, and Jew's Lagoon, will still come into Narrabri.
2080. Into Narrabri West? No. Much of it comes by way of Gundamine, by Ironbarks, into Narrabri, and then crosses the bridges to Narrabri West.
2081. Do you know the Narrabri Creek and the Namoi River? Yes.
2082. Do you think that a railway bridge could be thrown across those watercourses at a cost of £6,000? I am not prepared to say. I have not seen the details or sections, nor do I know what the length of the bridges will be. I am not in a position to criticise the estimate.
2083. The former estimate was £80,000? Mr. Collins said £80,000.
2084. That is what the estimate was? I presume that that was for a very much heavier style of line. The weight that has to pass over a structure materially influences its strength provisions.
2085. *Mr. O'Sullivan.*] There are two districts which we have to serve—one to the west and one to the north; do you think it would be possible for one line to serve those districts for all time? That is very difficult to say. The Collarendabri people consider that they ought to have a railway to themselves, and the Mungindi people, no doubt, would like a railway to themselves.
2086. You reported upon a branch line from Gurleigh Point out towards Collarendabri and Angledool? Yes.
2087. I presume that some day such a line will have to be constructed? I do not think so.
2088. Do you think that it will never be constructed? Yes. The engineering difficulties are very great, and the cost would be enormous. If the railway is taken to Moree and another line to Walgett, and increased facility is given for trading on the Barwon, there will be no necessity to make a railway to Collarendabri or Angledool.
2089. Could you not safely take the line a portion of the way, say as far as the flood-waters? Yes; you could do that.
2090. We have a certain sum of money to expend, and we know that the Gurleigh Point route will cost a great deal more than the direct route. Which would be the better for us to do, in the interests of the State—to make a direct line to Moree, and a branch line to Collarendabri, or to follow the Gurleigh Point route? I consider that the loop-line would be the best, because it would give greater facilities for settlement.
2091. You prefer the Gurleigh Point route to the direct line, with the branch which I have suggested? For

For this reason, that it gives increased facilities to the country that a branch—I do not know where you propose to make it from—would not give. A line by Gurleigh Point would give relief to Wee Waa and, perhaps, Pilliga, though there is a bridge over the river at Bugilbone. A line *via* Boggy Creek would not give relief to the Wee Waa traffic.

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2092. I am not suggesting such a line; suppose the branch line left the proposed line 4 or 5 miles beyond Narrabri, and went out *via* Boolcarrol to Collarendabri, would it not, in conjunction with the proposed line, benefit the district more than the Gurleigh Point line? Yes; because the direct line would not handicap the Moree people with increased mileage, while the branch would give facilities to other parts of the district.

2093. *Mr. Hoskins.*] You stated that you have had considerable experience in railway construction, and that you have never seen railways constructed with as little as 3 inches of ballast under the sleepers; but are you aware that in America there are hundreds of miles of railway without any ballast at all? Not of my own knowledge, but I have read of them. They are not constructed according to the English practice.

2094. Do you not think that 3 inches of ballast under the sleepers would be sufficient in level country, where the traffic was light and the rate of speed run very low, if the line was well drained and culverted, and locomotives of only 15 to 20 tons weight employed? Possibly so, if you only used locomotives of 15 tons weight, but there would be some difficulty in getting water there, and an engine, to be of much use, must be at least 30 tons in weight. I think the American practice is to have the sleepers very much closer together than they have them in England, which, perhaps, compensates for the want of ballast.

2095. If the maximum speed run on the line were 15 miles, and the engines only weighed 30 tons, would 3 inches of ballast be sufficient, supposing the drainage were good? Yes, if you made good drains and culverts; but that is a matter of some expense in flat country like this, where the water lies upon the ground. In many cases, where ballast can be easily got, it is best to increase it. Where the sleepers are placed far apart, instead of getting elasticity in the road, it becomes uneven, and gets out of order very quickly.

2096. Do you consider that if only 3 inches of ballast is placed under the sleepers the working of the railway will be unsatisfactory? No. I should be very pleased to see the experiment tried.

2097. You look upon it purely as an experiment? I do. I should certainly go in for a greater depth of ballast, because I think it would save the maintenance. The road would require more attention if only a small quantity of ballast were used than if a greater quantity were used, especially after rain.

2098. But if you had a greater depth of ballast, and the line was not properly drained, would not a flood have an equally bad effect upon it? Not an equally bad effect, because the water would pass very quickly through the ballast.

2099. *Mr. Davies.*] Is ballast easily obtainable on the proposed line? I think the various routes are equally situated as regards ballast, though possibly there is something in favour of the proposed route, because there is ballast at Little Mountain, near Narrabri.

2100. What does it cost you to put metal on the roads of that district? The cost varies very much. At Walgett we have to use vitrified clay, which costs 20s. per cubic yard, while at Narrabri we get metal for about 12s. per cubic yard.

2101. Is that drift from the river? No; there is a quarry at a place called Little Mountain, within 2 miles of Narrabri.

2102. Do you know of any ballast that could be procured within easy distance of the proposed line? Yes; on the way to Gurley you cross a basalt outcrop.

2103. What would the cost of that metal be per cubic yard placed on the railway? In a suitable size for ballast. What distance on each side would you take?

2104. Say 15 miles on each side? Not less than 17s. or 18s. per cubic yard, that is with an average cartage of 10 miles.

2105. Do you think that any ballast could be procured at 2s. 6d. a cubic yard? I doubt it.

2106. You doubt if ballast could be placed on any part of the proposed line at 2s. 6d. per cubic yard? Well, I do not know how close the line will go to Little Mountain.

2107. What would you consider the average cost for the whole line from Narrabri to Moree? Well, you must remember that in constructing a railway they lay down a temporary line before they put on the ballast at all, which reduces the cost very much. I have been estimating for road haulage, which makes a very material difference.

2108. Taking that into account, what do you think the ballast would cost? I do not think you could put it on at an average cost of less than 7s. per cubic yard for the whole line.

2109. That includes breaking? Yes; and the cost of engine power.

2110. Do you take into account the gravel to be got from the Namoi and the Gwydir? Yes; it would have to be screened.

2111. And would cost about 7s. a cubic yard? Quite that.

2112. Do you know if the direct line passes through any quarry or gravel pit? It passes very close to Little Mountain, and must pass over a basalt outcrop running from the Bald Hill over towards Gurley.

2113. Would that be within easy distance of the proposed line? Yes; both places would.

2114. If metal is got from the Little Mountain and from the basalt outcrop, it will cost, including haulage, 7s. 6d. a cubic yard? Yes.

2115. That is a general average? Yes. It is very probable that instead of getting it from any of these places they will get it directly on the line at some point near Narrabri, when the cost would be very little compared with the cost of road haulage. Possibly any estimate that has been made has been on that assumption.

2116. What does it cost you for breaking, as a rule? About 2s. 6d. a yard, 3-inch measurement, and sometimes less. It all depends on the hardness of the metal. Basalt would cost 2s. 6d.

2117. What is the lowest price you have paid? I have paid as little as 1s. 3d.

2118. For what—sandstone? Yes.

2119. You are speaking of the cost of breaking by hand? Yes.

2120. You have paid as much as 2s. 6d. and 3s.? Yes.

2121. You have stated that there is a good supply of timber along the line? Yes, on the hills to the east of the line at the back of Terry-Ilie-Ilie. I suppose the nearest point to the line where the timber could be got would be 15 miles out.

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2122. What is the general character of the timber? We have been getting girders for bridges there.
2123. In any quantity? No; the best of the timber has been culled.
2124. What would you consider a fair value for half-round sleepers taken from this forest? Ironbark?
2125. Yes? What size?
2126. Nine by 4, sawn or split, but undressed? I should say that you might get them landed on the railway for 2s. 6d. each.
2127. I am speaking of undressed sleepers? You might get them lower than that; I daresay you would get them for 1s. 6d., including haulage, though not, of course, in the wet season, when the haulage would be a great deal higher.
2128. That is haulage for 15 miles? Yes; not exceeding that.
2129. You said that in your opinion there would be abundance of timber to supply the railway? For that purpose there would.
2130. In your report you estimate that a large area of Crown land would be served by the line;—has there been any change since you made that report? There has been a change in Moree itself. There has been a great deal of progress there, and I know that settlement has increased in the district; but settlement has been retarded somewhat because the resumed areas are very limited in extent.
2131. There has been a great improvement in the settlement at the Moree end? All over the north-western portion of the line.
2132. What proportion of Crown land would be served by the proposed line? I think that over 3,000,000 acres of Crown land would be served by it.
2133. What radius would you take on each side of the line? That is going right up to the Queensland border, to Goondiwindi, the junction of the McIntyre and the Barwon, taking Yetman as the point of divergence on the east, going close to Warialda, avoiding Bingara, taking the ranges as the boundary down to Terry-Hic-Hic, and across to Narrabri. On the other side excluding Wee Waa and the district I have already referred to, Mogul, and from there following the Barwon to Mungindi, and on to Goondiwindi. That is excluding the Queensland trade.
2134. Do you think that this large block of Crown land would be largely increased in value by the construction of the line? I do, chiefly because it is impossible to make a road to Moree, and a railway would serve the traffic at all times. At present during flood time the cost of haulage is enormously increased, and sometimes you cannot get stuff taken at all. If the district is brought 70 miles nearer Sydney it must increase the value of all land there.
2135. What would it cost per mile to take a macadamised road, half a chain wide, through this country? It would cost £2,500 a mile.
2136. As much as it would cost to construct the proposed line? Yes; and the maintenance would be excessive.
2137. From the one the Crown would get no return, while from the other it would? Yes.
2138. As far as your knowledge of the country generally and of the desire of the Legislature to reach Moree goes, do you approve of the direct line in preference to any other? If you aim at serving Moree and the country north of it, of course the best route to adopt is the cheapest and shortest, so that the people who wish to use it will not be handicapped to the slightest extent.

TUESDAY, 19 DECEMBER, 1893.

Present:—

JACOB GARRARD, Esq. (CHAIRMAN.)	
The Hon. WILLIAM HENRY SUTTOR.	WILLIAM CHANDOS WALL, Esq.
The Hon. JAMES HOSKINS.	WILLIAM McCOURT, Esq.
The Hon. FREDERICK THOMAS HUMPHERY.	JOHN CASH NEILD, Esq.
The Hon. JOHN DAVIES, C.M.G.	EDWARD WILLIAM O'SULLIVAN, Esq.
The Hon. WILLIAM JOSEPH TRICKETT.	CHARLES COLLINS, Esq.
HENRY DAWSON, Esq.	

The Committee further considered the proposed Railway from Narrabri to Moree.

John McElhone, Esq., sworn, and examined:—

- J. McElhone, Esq.
19 Dec., 1893.
2139. *Chairman.*] I believe you are a wool-buyer? Not now. I can hardly tell you what I am at the present time.
2140. I understand that you know this district well, and know the different routes which have been suggested for a railway from Narrabri to Moree;—what are your views as to the direction the line should follow? It is a good many years since I was in that country. I used to go there stock buying, but of late years I have not been past Narrabri.
2141. How many years is it since you were there last—five years? Fully fifteen, I think.
2142. You know the direction which traffic takes upon the area of country depicted on the Lands Office map before the Committee? From what I have heard a great part of the land about Killarney was purchased years ago, but it is not so with the country lower down. I think there is hardly the same area of country in New South Wales as good as that.
2143. Are you referring to the country on the southern side of the river, or to that on the northern side? The country down towards Wee Waa and Millie—all that country. It is all magnificent saltbush and myall country.
2144. That is from Boolcarrol, north? Yes; I have been told that the owners of Killarney secured all the land they could years ago; but the land lower down the river was Crown land until the passing of the Stuart Land Act, and that is why there is so much settlement down there. If it is true, as I have been told, that the great body of settlement is down there, I have no hesitation in saying that although the route may be longer, that is the line which would pay the Government.
2145. You have no personal knowledge of the settlement which has taken place there? I tell you distinctly that I have not been there for many years. I have been told that the land was taken up since the passing of the Stuart Land Act, which allowed free selectors to hold their land undisturbed, and therefore they have become thick and strong there, and are likely to stop. 2146.

J. M. Elhono,
Esq.
19 Dec, 1893.

2146. Are you aware if many of them have sold out to the squatters? That is beyond my knowledge altogether, but I know that some of the men there are not likely to sell to the squatters, because they have been able to get a sufficiently large area of land, and are therefore likely to stop.
2147. From your knowledge of the fertility of that district, and from what you have heard of the settlement which has taken place since you visited it, you think that if the line were taken more to the west, it would be to the interest of the country? Such a line would be longer, but it would be more in the interests of the country, since it would suit population generally, and not a few landholders only.
2148. Suppose the primary intention of constructing this line is to tap the country to the north of Moree, do you not think that any deviation to the west will give unnecessary mileage? There is another reason why the line should go more to the west. Wee Waa, if I recollect, is 20 miles from Narrabri, and in going towards Wee Waa, you are on the road to Walgett, to which place you are bound to make a railway sooner or later, because you cannot make a road there.
2149. But you have not answered my question;—presuming the proposed line is primarily for the purpose of tapping the country north of Moree? Out towards Warialda?
2150. Kunopia, Goondiwindi, and that district;—would it not be unfair to load traffic from those parts with some miles of additional haulage? I do not think so.
2151. You think that the greater traffic to be developed on the western line would more than compensate for the deviation? I am sure of it. If the proposed line was constructed the people out to the west would continue to bring their wool and fat stock in by road to Narrabri.
2152. Do you know anything of the country north of Moree? No; except out towards Bingara and Barraba, and the country out that way.
2153. Therefore, you cannot compare the country north of Moree with that to the west of the proposed line? No; I suppose you would call Warialda north?
2154. No; that would be east? Because the Inverell railway would suit those people. Every acre of the country to the west—Lode's station, Richards' station, Yarraldool, the Eckford Brothers' station, Millie—is magnificent land. There is not an acre of bad land there.
2155. We have it in evidence that some of the traffic from the country you refer to comes to Narrabri, *via* Boolcarrol, and the rest of it *via* Millie, and while some witnesses are of opinion that the traffic coming *via* Millie would use the proposed line, others think that it would not? That is a matter for the people themselves to determine; but I fancy that a line towards Wee Waa would catch all the traffic from the west, which the proposed line would not get, together with the traffic coming to the proposed line.
2156. If there is sufficient traffic in the country north of Millie to pay for the construction of the proposed line, would it not be unfair to handicap the people living there with 15 miles of additional railway carriage? So far as I can judge, a line to the west would pay better than the proposed line, because it would serve more traffic. All the country there is magnificent. I have travelled over a good deal of New South Wales, and I do not know any part of it where there is more good, rich grazing land than there is here. I am speaking of grazing land only.
2157. How would you compare the land out towards Bingara and the hills with the land you speak of? It is beautiful agricultural country. You cannot beat it for agriculture.
2158. Is that the general character of the country between the proposed line and Bingara? All round Inverell and Bingara, and out towards Warialda, the country is magnificent.
2159. The country east and west of the proposed line is similar, and is good country? There is a great deal of good country both ways. It is nearly all good country.
2160. But there is a large area to the westward, because there are no hills? There is a larger area there open to conditional purchase. Until lately there was no land taken up there at all. I think I am right in saying that all that land was taken up since the 1883 Act passed. Take the case of Mr. John Walsh. Out of 500,000 acres leased, which he had there, but a comparatively small area (1,280 acres) had been purchased when the place was bought. Virtually, nine-tenths of these runs were Crown land before the selectors went out there to take up any land that would suit them for grazing stock, and enable them to keep a family.
2161. Do you think that it would be better to make a diversion to the west? I do not know anything about the paying capabilities of the country, but I think that a line to the west is more likely to pay than any other line. If you ask me, I do not think that any line would pay for some time to come.
2162. Is there any other point on which you wish to enlighten the Committee? No. I may say that I have no interest in this matter. I am indifferent as to where the line will go, but, knowing the district, I am of opinion that a line to the west would be best.
2163. Were you ever in that district during very heavy floods? Yes; I have had cattle swimming all the way from Goondiwindi to Narrabri, except for the sand hills here and there. That was in 1870. The creeks spread all over the plains during heavy floods.
2164. We have been told by the Railway Construction Department that one of the reasons for keeping the line to the east is that it will pass through country less liable to floods than that further west? The creeks on the proposed line are as much liable to heavy floods, and spread over the plains, as much as the creeks lower down. It is almost a dead level from Narrabri to Moree, whichever way you go.
2165. If we have been told that the proposed line could be constructed for £400 to £500 a mile less than a line to the westward, leaving out of consideration its saving in length, do you think that is a matter which could be taken into consideration? I do not think so. I believe that the crossing at Narrabri will require one of the most expensive bridges; it is one of the worst crossings on the Namoi River.
2166. The engineers say that they have adopted the cheapest and best crossing suggested to them? I do not place much confidence in them. Many millions of money have been fooled away in this country on scientific fads. In my opinion, as expensive a bridge will be required on one line as on the other, while if you go towards Wee Waa you are getting near Walgett, where you must make a railway some day or another. I am told that selectors are taking up the whole of the land round Walgett, and will greatly increase when leases in the Central Division fall in.
2167. As a matter of fact, none of the Walgett traffic comes into Narrabri now? That I do not know.

Ingham Suttor Clements, Esq., sworn, and examined:—

2168. *Chairman.*] You were at one time surveyor in charge of the Inverell-Moree district? Yes.
2169. How long ago is that? Thirteen years ago.
2170. How long were you in charge of that district? About nine years.
2171. Can you give us roughly the boundaries of that district? It is bounded on the west by the Namoi River, on the east by the Nandewar Ranges. It is bounded by Bumble Creek on the north, and then goes down to Walgett.

I. S. Clements,
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- I. S. Clements, Esq.
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2172. Are you familiar with the country right out to Walgett? No; I never went to Walgett.
2173. Do you know anything of the country north of Moree? I know the country within the boundaries of my district; but I never went out of the district unless sent out of it—that is, to do surveying work.
2174. You know the route of the proposed line? The proposed route, I believe, is a straight one, while the others turn further down the river.
2175. Which route, in your opinion, is the best for the purposes of railway construction—which keeps out of the reach of floods most? I think the proposed route keeps out of reach of the floods best.
2176. The more you go to the west the more the country is liable to be flooded? Yes.
2177. Which route passes through the best land, from an agricultural or pastoral point of view? Either of the western routes passes through better country than the proposed route; but the proposed route taps better agricultural country—not that there is a great deal of agricultural country there.
2178. You are of opinion that the proposed route passes through drier country than the western route? I think that if a railway were constructed along the proposed route it would cost less for repairs, and would be more durable, and less liable to accident than any other. The good land lies principally up the gullies, off the plains. There are some very good patches up various creeks. Of course the proposed line keeps near the foot of the ranges.
2179. It is 15 or 20 miles from them? I mean near by comparison.
2180. Were there any serious floods in the district while you were stationed there? Yes; there were some big floods. You can generally reckon on a big flood once in fifteen years.
2181. From your experience during such times, you think that the proposed route is the best for the purposes of railway construction? I think so.
2182. Would it be possible, without very considerable expense, to take the line along either the north or south branch of the Namoi? I think it would be a waste of time to take the line along the river bank, because it would be a foot underground after the occurrence of a flood, through the deposit of silt, or it would be washed away altogether.
2183. The river banks here and there are subject to floods? Yes; though very often in the flat country the immediate bank of the river is higher than the country beyond.
2184. Do you know Gurleigh Point? Yes.
2185. Is the bank there bold, or is it liable to be flooded? It is low compared with the country above, which we are speaking of.
2186. You said that the proposed line would pass through country more suitable for agriculture than any of the country to the west;—how do you account for that? The country to the west is decomposed trap. It is more recent, I should think, than the country to the east. Up the gullies the soil is alluvial, and the land generally is more arable than the ordinary black soil country.
2187. Do you know if there is any considerable difference between the rainfall immediately at the foot of the ranges, and, say, 30 miles out on the plains? The rainfall may be slightly more on the ranges; but I do not think that the difference is great.
2188. That would make the land better for agriculture? You do not want much rain to grow wheat, but you want to get it at the right time.
2189. Is there anything you would like to add? I do not think that there is anything else. I might say that about Myall Hollow, 30 or 40 miles from Narrabri, they got water at from 40 to 60 feet; but I do not think they can get it at all on the travelling stock route, because there is solid basalt underneath. There is also a good deal of metal there which would be useful for ballast.

William Henry Moseley, Esq., solicitor, sworn, and examined:—

- W. H. Moseley, Esq.
19 Dec., 1893.
2190. *Chairman.*] You are now practising as a solicitor? I am a solicitor.
2191. You were at one time engaged in pastoral pursuits in and about Narrabri? Yes; I was living at Boolcarrol.
2192. How long ago is that? During 1871, and at Tibbereenah from the beginning of 1872 until the end of 1876.
2193. Will you briefly give the Committee your views in regard to the route of the proposed line? You will clearly understand that it is seventeen years ago since I left the district, and in that period the conditions of the country have very much changed. When I went there Boolcarrol and Talladulla had not a selector on them, but now the tide of selection has flown down Pian Creek and out to the west; thus I cannot speak of the traffic in that part of the country.
2194. If it has been asserted that the proposed route is better for railway construction purposes, owing to the country being sounder and less liable to floods than the country to the west, do you agree with the statement? Certainly not, for the simple reason that it is proposed to cross the river at Narrabri, where the line, for at least the first 2 miles, would be liable to very severe floods. I was there during the flood of 1873, which was not so high as the flood of 1864. During the flood of 1864 the water was up to the wall-plates of my house; but in 1873, although boats came up to the verandah, the water never absolutely entered the building. Between Narrabri West and the proposed new station, however, there was what was practically a roaring torrent, and there was hardly any place where the water was not 10 feet deep, except at isolated spots.
2195. Suppose the engineers have secured one or two of these spots, what then? They could not use them, because, instead of running athwart the stream, they run parallel to it.
2196. Have you ever taken the flood-levels? I have seen the marks on the trees, and they are about as good as any levels you could get. Besides, I was there during the flood.
2197. If the engineers swear that the proposed crossing is the best that has been shown to them at any point of the river between Gurleigh Point and Narrabri, would you set your opinion against theirs? Yes; because I have seen the height to which the water has risen, while the engineers have not.
2198. Have you ever seen the river in flood at Gurleigh Point? I have.
2199. Is there a wide stretch of water there? There is everywhere on the Namoi when the river is in flood.
2200. You have told us that the river was 2 miles wide at the proposed crossing;—how many miles of water would you have to cross at Gurleigh Point? I could not tell you, but 10 miles of water where it is only up to your horse's girth is not so dangerous as 2 miles where it is 30 feet deep, and is bringing logs of timber down.

2201. Do I understand that the river is 10 miles at Gurleigh Point and only 2 miles wide at Narrabri? I did not say that the river was only 2 miles wide at Narrabri. I am speaking of the 2 miles of country between Narrabri West and the proposed new station. W. H. Moscley, Esq.
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2202. You have told us that you have seen at least 2 miles of water at the proposed crossing, and I want to know the width of water at Gurleigh Point during the same or at similar floods? But I omitted to tell you how far the water spread out beyond Narrabri. It is impossible to say how far the water spreads out when the Namoi overflows its banks, and it is difficult on the plains to say which is river water and which is creek water. The country for miles and miles back from the river—for 10 miles, probably, in some cases—was under water.
2203. With here and there an elevated spot? Yes; there are the sand ridges.
2204. I understand all that, but I want to know, for the purpose of comparison, what was the width of the flood-waters at Gurleigh Point, irrespective of the back water? I could not possibly tell you what the width of the actual flood-water was. It would all depend on the lie of the country; but in some places the water would go back 10 miles.
2205. Was that at Gurleigh Point? The water was comparatively shallow except in the actual bed of the river. I could not tell you how wide the river was.
2206. You cannot give us any idea as to the width of the river there? It would be only guess work. I should say that the real bed of the stream at Gurleigh Point would probably be about 500 yards wide; but it is so long ago since I was there that I could not tell you definitely. You must also understand that we could not go very close to the river. We had to keep a good way back in order to get across the country.
2207. So far as the river crossing and the soundness of the country is concerned, you think the Gurleigh Point route would be just as good, if not better, than the proposed route? Yes; I should say that it would be the better of the two for soundness of country, because it keeps on the southern bank of the river, which is a high dry bank all the way until you come to the crossing.
2208. What about the country on the north side of the river;—is it not more liable to flood than the country on the proposed line? Certainly not. There is only the same body of water, but on the proposed line there are a number of creeks coming down from the mountains.
2209. Would not Boena Creek have to be crossed between Narrabri West and Gurleigh Point? Yes; but it is a small creek compared with those coming from the mountains, because it comes through ridgy country. There is no watershed there to yield a large body of water. It is a fairish creek, but nothing to compare with the other creeks.
2210. Is it not a fact that the watercourses on the proposed line are more defined than those on the travelling stock or Gurleigh Point routes? I suppose they are more defined, because they bring down a very much larger body of water in flood times, and that cuts out their channels. Lower down the country is flatter, and the creeks spread out more, and the water is shallower.
2211. Would not the country that you speak of have not only the water brought down from the east but also that falling on the ground between it and the proposed line? Of course the river has to carry off all the flood-water, but I do not think that it is any worse there.
2212. There is a greater volume of water there, although it may not be confined to such small channels? It is not so confined.
2213. It spreads out more, and is therefore not so dangerous? It is not so dangerous.
2214. But it would attack a railway at a greater number of points if it were more confined? Yes; but it would be easier to deal with, because it does not bring down the same amount of timber.
2215. It is only as to the nature of the country and the floods that you can speak? Practically I know the whole of the country traversed by the proposed line; but I am not well acquainted with the country to the south. There was no selection at all when I went there, but the country has been very much taken up since.
2216. Do you know anything of the country to the north of Moree? No.
2217. Have you been far out west from Narrabri? Never beyond Moree. I have gone east New England way.
2218. How far west have you been from Narrabri? Never lower down than Pilliga. Of course I know the lie of the country from Pian Creek, and towards Nowley.
2219. Is there anything you would like to add? No, I do not think so.

William Theodore Foxlee, Esq., M. Inst. C.E., Engineer-in-Chief for Existing Lines, Department of Railways, sworn, and examined:—

2220. *Chairman.*] Has the proposal into which the Committee are inquiring been before you in any shape or form? No; not until Mr. Lyne called upon me the other day, and informed me that I should be required to give evidence before the Committee in regard to the ballasting. W. T. Foxlee, Esq., M. Inst. C.E.
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2221. Prior to that you were not consulted by the Commissioners, or by the Construction Department, in regard to the matter? No; excepting as to the probable cost of maintenance.
2222. Are you familiar with the project before the Committee? I think fairly so.
2223. You know nothing of the country through which the line passes? I do not know the country between Narrabri and Moree; but I think I understand the nature of the country through which the proposed line is to go.
2224. You think you have been through similar country? I understand that the country through which the North-western line passes is similar.
2225. That is the line from Werris' Creek to Narrabri? Yes; and I am told that the country, in parts of the South-western line, from Junco to Hay, is similar to it.
2226. The line has been put before us as what is called a pioneer line; it is proposed to do without fencing, to use sleepers of a less expensive character than are used on the ordinary lines, viz., half-round sleepers, and to put only 3 inches of ballast under the sleepers;—from your knowledge of this country—it is black soil country—do you think that that quantity of ballast would be sufficient, bearing in mind that the trains will run at a speed of only 15 miles an hour, and that because the grades are very flat, the engines

W. T. Foxlee, Esq.,
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engines and rolling-stock are to be of a light description? I understand that the line under consideration is altogether different from other lines which have been constructed in this Colony, not excepting the Cobar and Temora lines. It is to be a Pioneer Line, and to be looked on more as an experiment than anything else. The speed run upon it, I understand, is to be limited to about 15 miles an hour; the engines are to be light, having something like 12 or 12½ tons on each axle, and, since the running will be done chiefly by daylight, the line is not to be fenced. I understand that the quantity of ballast which will be used has been decided upon by the Commissioners, after consultation with Mr. Deane, the Engineer-in-Chief for Railway Construction, and, on referring to Mr. Deane, I found that he had allowed in his estimate for 1,200 cubic yards of ballast per mile of line. If that quantity of ballast is judiciously placed, I cannot see any objection to the limitation. I have been thinking the matter over, and I find that there will be no difficulty in giving 6 inches of ballast under the sleepers, if the ordinary width is somewhat narrowed—carrying the ballast 2 inches up the sleepers, and giving a projection of 9 inches at each end. There may be places where the formation is good, and where a little less ballast would do; but, speaking generally, a depth of 6 inches is as little as you could do with. Where the ground is solid you might be able to save a little ballast, and that would enable you to give a little more—say 8 or 9 inches—where the bottom is soft. If the ballast were arranged as I suggest, I have no hesitation in saying that the line would be perfectly safe, and if the traffic came to warrant it, there would be no difficulty in increasing it afterwards.

2227. Where the ground is fairly sound, 3 inches under the sleepers would be sufficient? I would rather not put it in that way. The average depth should be 6 inches, and 1,200 cubic yards per mile would give that depth. Of course I do not know the country; but there may be places here and there where a little less could be used, and in that case you would have a little more to dispose of where the ground happened to be exceptionally soft.

2228. Why is the spread of ballast usually wider than you suggest? Where country is uneven, and lines curved, it is necessary to have more ballast at the ends of the sleepers to prevent the road from getting knocked out of line, which it is apt to do if the ballast is scanty. To meet this extra ballast is used. On this line, however, there are no curves sharper than 20 chains, except at the junction at Narrabri, where there is a 12-chain curve.

2229. Because the curves are not sharp, and the line is comparatively straight, you can do away with the extra width which you ordinarily have? Certainly.

2230. So that you could narrow the ballast as you propose without any danger at all? With perfect safety.

2231. Is there any other point in the proposed construction of the line upon which you would like to offer an opinion? No; I have had this matter of ballasting brought under my notice, and have consequently thought it over.

2232. *Mr. Hoskins.*] How long have you had charge of the Existing Lines? I came to this country three years ago last February, and I have had charge of the Existing Lines as Engineer-in-Chief for two years from last September.

2233. You took over the Nyngan to Cobar line after it was officially opened? Yes; I have charge of that line to-day.

2234. You took charge of it immediately after it was officially opened? Yes; and I took over the maintenance as soon as the contractors were relieved of that charge. We did not take it over directly it was opened for traffic; the contractors maintained it for a short time.

2235. The gradients there are very easy? Quite easy. The line is comparatively level.

2236. What is the depth of ballast under the sleepers there? Six inches.

2237. All through? Yes.

2238. Have you increased the depth of ballast since the line was opened? No.

2239. You are still running with 6 inches of ballast under the sleepers? Yes.

2240. There are easy gradients on the Temora line, are there not? Yes; it is similar in character to the Cobar line.

2241. What is the depth of ballast under the sleepers there? The same—6 inches.

2242. An average of 6 inches right through? Yes.

2243. Have you increased the depth of ballast since that line was opened? No.

2244. Have you found those lines to work satisfactorily with 6 inches of ballast under the sleepers? Quite satisfactorily.

2245. Is the amount which you have expended to keep those lines in order in excess of the amount expended to keep the main lines in order? I should like to explain that you cannot compare lines like those to Cobar, Temora, and Corowa, and this proposed line to Moree, with the main lines, because the circumstances are entirely different. I have brought with me a few figures, in case you might wish to know the difference in the cost of maintenance of different sections of the New South Wales railways. On the suburban line from Sydney to Flemington we have four lines of rails, and the cost of maintenance per mile per annum, including labour and material, averages £1,731. From Flemington to Granville, a double line, costs £391 per mile per annum, including the extensive marshalling yard at Clyde. From Granville to Picton, on the Southern line, we have two sets of rails, costing £293 per mile per annum for maintenance. From Picton to Goulburn there is a single line for the most part, costing £202 per mile to maintain. On the Illawarra line, from Eveleigh to Kiama, we have a single line most of the way—the double line only going as far as Waterfall—and it costs £200 a mile to maintain; but on that line we have had extensive landslips to deal with in the neighbourhood of Clifton. The line from Nyngan to Cobar costs £43 per mile per annum to maintain.

2246. *Chairman.*] Does that embrace the period of two years? No; that has been the average cost during the past year. The Temora line has cost us, since it was opened, at the rate of £38 per mile per annum; so that you will see that the cost of maintenance depends on circumstances—the nature of the country, the extent and character of the traffic, and so on.

2247. *Mr. Hoskins.*] Can you tell me the cost of maintenance per mile on the line from Cootamundra to Gundagai? I have not the figures before me, but it would be probably something like £70 or £80 per mile. I would point out, in connection with the Nyngan to Cobar line, that there the trains only run three days a week, so that on other days the maintenance men can do their work without the interference of the traffic. There is no protection of trollies necessary, nor have any flagmen to be sent out. When trains are running, however, we have to protect the men by means of flagmen, and the work is interrupted

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interrupted. I believe that it is intended to run trains on the Moree line every day of the week, and on certain days no doubt there will be special trains. In estimating the cost of maintenance, you have to take all these circumstances into account.

2248. Trains run on the Temora line every day in the week? No; only on three days in the week.

2249. What about the Corowa line? There we only run trains upon three days in the week.

2250. You have not found any difficulty in working light lines of railway in this Colony, with a limited quantity of ballast, where the gradients are easy? No difficulty at all, where the rolling stock used is light, and the trains are run at a low rate of speed. Those are the conditions.

2251. I suppose you know the gradients on this line? I have seen the section.

2252. Do you think the line could be worked successfully without any ballast at all? I do not say that.

2253. I presume that you are aware that in America some hundreds of miles of railway are worked without ballast? I believe that is so, but I should be very sorry to recommend such a thing in connection with this line.

2254. Not even where the gradients would be very easy, and the traffic small? I should never think of recommending such a thing.

2255. *Mr. McCourt.*] You are aware that the Commissioners have given an estimate of the cost of maintaining this line? I am.

2256. They did not refer to you in the matter? Yes. The Commissioners referred to me in reference to the cost of maintenance.

2257. Then you supplied the estimate? I conferred with them on the subject before the estimate was given.

2258. How many men are there employed in the gangs on the Cobar line? There are three men in each gang; but we locate the two gangs together, so that in case of emergency or for special work, six men are available. Each gang looks after a length of 10 miles.

2259. So that six men would have to look after 20 miles of line? Yes. With regard to the cost of maintenance I would point out that it is a matter which has received a good deal of attention at the hands of the Commissioners, and we have provided the men in charge of lengths of line with tricycles. We are now arranging to supply them with specially geared trolleys, to enable a gang of men to travel, and take their tools and material easily and rapidly from place to place. We have in this and other ways reduced the cost of maintenance.

2260. Have the Commissioners expended large sums of money in making alterations to the Cobar line since it was taken over? We have only given slightly additional siding accommodation here and there; but speaking generally, there has been no expense in connection with the running roads.

2261. There has been no considerable alteration? No.

2262. You are aware that it is proposed to use some old rails in the construction of the proposed line? I understand that some re-rolled rails are to be used, and also that some old iron rails are to be used.

2263. Is it not a fact that your Department have sold all their rails to the Menindie tramway? I am not aware of any such arrangement.

2264. You are aware that it is proposed to run trains on this line at a speed of 15 miles an hour? I am aware of that.

2265. Is the speed limited on the Corowa line? The speed is limited to 25 miles an hour on the Corowa, and also on the Temora line.

2266. Do you find that the drivers keep to that speed; do they not frequently travel at 40 miles an hour? If they do we deal with them.

2267. But what is your opinion? If you ask me whether we can control the speed, I say that we can.

2268. *Mr. Hoskins.*] They have to run to time? Yes; and the time given for running between two stations does not exceed the limit of speed we have laid down.

2269. *Mr. McCourt.*] Are you aware that the cost of maintaining the Jerilderie line, which is 45 miles in length, was estimated at about twice the cost of maintaining this line, which is 63 miles in length? I have not the least idea what the estimate for the Jerilderie line was, but the Commissioners have been considering the charges for maintenance, and these have been reduced in the way I have pointed out, as well as in other ways.

2270. The difference would be explained by the statement that the cost of maintenance has been reduced? We have reduced the cost of maintenance very considerably. As we improve the roads we find that we can reduce the charge on this account.

2271. You are aware that half-round sleepers will be used on this line? Yes.

2272. Will they pack in the ballast as well as square sleepers? I take it that the sleepers will be laid with the flat side downward, and therefore they will pack as well as the square sleepers.

2273. *Mr. Suttor.*] What is the average distance between the sleepers? It varies. I understand that it is proposed to put the sleepers a yard apart on this line. The distance apart of sleepers on these railways varies from 2 feet 4 inches and 2 feet 5 inches to 3 feet, according to circumstances. If a line happens to be a light one, you can put the sleepers further apart; but on main lines, where the ordinary rolling stock is used and high speeds are maintained, you have to reduce the bearing of the rails, and must put your sleepers closer together.

2274. *Mr. Hoskins.*] Do you think it would be judicious to put the sleepers 3 feet apart on the proposed line, seeing that only about 6 inches of ballast are to be used, while on the other lines, where the sleepers are only 2 feet 6 inches apart, 9 inches of ballast are used? I think so, because we are going to run at a low rate of speed with light engines.

2275. What do you mean by light engines? Engines weighing from 50 to 60 tons.

2276. That is the engine and tender? Yes; with a load of something like 12 or 12½ tons on each axle.

2277. *Mr. Davies.*] Have you had to strengthen the permanent way on the Cobar line since you took it over? No.

2278. Is it not true that £30,000 or £40,000 has been spent on that line by your Department since you took it over? It is certainly not true.

2279. *Mr. Humphery.*] When you speak of light rolling-stock, do you mean a light engine and ordinary trucks? Yes.

2280. Trucks such as are used on the main lines? Yes; it is only the engines that are lighter.

2281. One thousand two-hundred cubic feet of ballast to the mile would give a depth of 6 inches and a width of 13½ or 14 feet? No; it would give you a width of 9 inches of ballast at each end of an 8-foot sleeper; making a total width of 9 feet 6 inches at the top, and a slope of 1 in 1. The depth, as I have already stated, would be 6 inches under the sleepers.

2282.

- W. T. Foxlee, Esq., M. Inst. C.E., 19 Dec., 1893. 2282. What would be the width at the bottom? Ten feet 10 inches.
2283. Without any additional cost in the construction of this line, a uniform depth of 6 inches of ballast could be obtained, instead of 3 inches, as previously estimated? That is so, if the ballasting is done in the way I suggest.
2284. *Mr. Dawson.*] Have you seen the estimates for the bridge over the Narrabri Creek and the Namoi at Narrabri? No; I have not. I have merely looked into the question of ballast, because I was told that I should be asked some questions in regard to it. I have had no opportunity of going into the estimate in detail.

Charles William Lloyd, Esq., sworn, and examined:—

- C. W. Lloyd, Esq., 19 Dec., 1893. 2285. *Chairman.*] You have preferred a request to be examined in connection with this railway proposal;—you know the salient points of the proposal? I think so.
2286. What is your occupation? I have been engaged in squatting pursuits for the greater part of my time, but I am not so engaged at present.
2287. You have resided in this district for a number of years? For the greater part of thirty years.
2288. How long is it since you were there? Since I resided there?
2289. Yes? I have not resided there since 1884.
2290. You have been away from the district since 1884? I have been in the district, but I have not resided there since 1884.
2291. You have occasionally visited it? Yes.
2292. Whereabouts were you residing when you were in the district? For many years I resided near Gunnedah, at a place called Burburgate, and after that I resided near Narrabri, at a place called Tarriaro.
2293. Have you lived any further out than that? No; but I used to go to Gurley, which was one of our stations.
2294. From your knowledge of the district, do you think the country traversed by the proposed line is suitable for railway construction? I should say so, as far as my experience goes.
2295. If it has been stated that if the line were to be taken further west, by the travelling stock route, or Gurleigh Point, it would have to traverse country more liable to be flooded, do you agree with that statement? I think it would pass through country of a more swampy nature.
2296. Do you know anything of the various crossings on the Namoi? There are a number of creeks on the proposed line. I know most of the creeks between Narrabri and Moree; but I do not know the creeks beyond that, in fact, beyond Gurley Creek I might say.
2297. Is it a fact that the creeks are better defined where the proposed route crosses them, than they are further to the west? I think they are. They have higher banks.
2298. Do you know anything about the crossing at Gurleigh Point;—is it liable to be flooded? Very much so.
2299. Is there a greater spread of water there during flood-time than there is higher up the river? Yes; the water breaks out there.
2300. Do you know anything of the country out towards Goondiwindi, Kunopia, and Mungindi? I know the country between Moree and Goondiwindi.
2301. Do you think that the country north of Moree is as good carrying country as that to the west of the proposed line, out towards Collarendabri? The country between Moree and Goondiwindi is good for stock; but I am not very much acquainted with the country to the west.
2302. How far does your acquaintance with the country to the west go? I have not been more than 10 or 20 miles out from the main road, but there is a great sameness in that country. As far as I could see, when I have travelled over it, there is a great similarity about the different places.
2303. Do you think from your knowledge of the country out towards Moree, that there is at present, that there is likely in the near future to be sufficient trade to justify the construction of a line at a cost of £153,000? I could not tell you. I have no knowledge of the present state of the country.
2304. Is there anything else you would like to tell the Committee? There are two or three considerable creeks between Narrabri and Moree; Gurley Creek is the principal one.
2305. Can you give us any information about the proposed crossing near Narrabri;—you know where the present road bridge crosses the river? Yes; that is very low land and liable to flood.
2306. The proposed railway crossing is roughly a quarter of a mile above that;—do you think that that is as good a place as could be chosen? Higher up the river the crossing is better.
2307. The higher up you go the better the crossing? Yes; there is one very good crossing-place called the Rocks.
2308. That is very much higher up? Four miles higher up, I think. I believe it was originally intended to cross there.
2309. If you were constructing a railway to connect Moree and the country north of it with the present line at Narrabri West, would you take the direct route, or a route more to the west? I would take the proposed route. I do not see that there would be any advantage gained by taking the line to the west.
2310. Have you any personal interest in any of the country through which the line will go? Not the slightest.
2311. *Mr. Wall.*] You state that the country along the proposed route is equal to that along the travelling stock route? There is a greater variety of country there. I know the district between the proposed line and Wee Waa thoroughly.
2312. Can you tell us why, in making the travelling stock route from Narrabri to Moree, they went 15 miles out of the way? They followed the old track, because there were more water-holes there. This is a badly-watered country,
2313. The travelling stock route was not made that way because the country on the proposed line was not suitable? No. In my time the travelling stock route did not go through Gurley—it crossed Bumble Creek.
2314. *Mr. Dawson.*] Do you know the Eckford scrub? Yes.
2315. Do you call it good country? It is convertible into good country. There used to be thousands of cattle in it which could not be got out.
2316. Were you there in 1864? I was there immediately after the flood of 1864.

2317. Do you know how high that flood was? It was the highest flood in the district of which there is any record. The water rose 5 or 6 feet in the house that I afterwards lived in at Tarriaro. C. W. Lloyd, Esq.
2318. Were you there in 1873? Yes. There was a very high flood then, but not so high as the flood of 1864. 19 Dec., 1893.
2319. Where was the town of Narrabri then? It was nearly all under water. The principal hotel had, I think, 5 feet of water in it.
2320. If the proposed line is made, and a flood like that of 1864 comes, a lot of it will be under water? I should think so. I think that in the 1864 flood every house in Narrabri must have been flooded.
2321. *Mr. Collins.*] There were no houses there then? Yes, there were; but in 1854 there were not. I put up the first house in Narrabri in 1856.
2322. Do you know the Gurley and Ten-mile Creeks? Yes.
2323. How wide are they at the time of heavy floods? Several hundred yards wide. The 1864 flood water was nearly up to the Gurley old station. It was inside the garden fence, and as that side is much higher than the other side of the creek, the water must have been a quarter or, perhaps, half a mile wide.
2324. Do you know the country between the proposed line and the Nandewar ranges? Yes.
2325. Is it any good? Yes; it is rich soil. All the soil under the Nandewar ranges is good.
2326. *Mr. Humphery.*] Would it be possible to select a route for the extension of the line from Narrabri to Moree which would be free from flood? I do not think it would. The creeks come down from the mountains with an immense rush.

Henry Deane, Esq., Engineer-in-Chief, Railway Construction Branch, Department Public Works, sworn, and further examined:—

2327. *Chairman.*] In the proposal before the Committee you have made allowance for only 3 inches of ballast under the sleepers? Yes. H. Deane, Esq.
2328. Do you think that that would be sufficient for a country so liable to flood? I have allowed a little reserve. I have given 1,200 cubic yards to the mile. I prefer to put it in that way, so that if there is any sinking in any holes there will be a reserve of ballast above the level of the bottom of the sleepers. 19 Dec., 1893.
2329. What is the usual width of ballast? Eleven feet 9½ inches on the formation level is the ordinary width.
2330. Do you intend to have the ballast here the ordinary width? No; I should narrow it. I intend to make it about 10 ft. 6 in. at the bottom.
2331. With that depth you could make it deeper than 3 inches? Yes; and it will allow us to pack up the sleepers as the road goes down.
2332. So that while in portions of the country 3 inches will do, this narrowing of the ballast will enable you to spare a little more for spongy places? Yes; it will do very well that way.
2333. Have there been careful and reliable levels taken in regard to the crossing of the Narrabri Creek and the Namoi? You are referring to flood-levels?
2334. Yes? I think so.
2335. From a personal inspection of the place, you consider the proposed crossing the best that has been suggested to the Department? I have not a doubt of it.
2336. That is, of course, putting Rocky Crossing out of the question? Yes. It is impracticable, because it is too far back.
2337. We have been informed that during the occurrence of floods there have been 2 miles of water between Narrabri West and Narrabri proper;—would your bridges be above the level of such a flood? I have not provided for 2 miles of waterway, and I do not think it is necessary to do so. I have provided for the highest flood that is known to me. We might occasionally—say once in fifty years—have a slightly higher flood;—a very much higher flood you could not have, and I think we may take the risk of that, because very little damage will be done.
2338. What is the highest flood you speak of—the 1864 flood? I have not the date here; I am relying on the surveyor's information.
2339. Floods usually leave pretty well defined marks, irrespective of the recollection of local residents? If they are comparatively recent you can always trace them by the marks on the trees, and so on. In this case I think the residents have shown the surveyors' marks which are perfectly reliable.
2340. Presuming that your belief, that the best crossing has been obtained, is sound, do you think that you can construct the bridges for the amount you have estimated? That is to say for £5,250?
2341. Yes? Yes; the work can be done with the waterway that I propose to adopt; I have no doubt about that. If on further consideration it were found necessary to add to the waterway I consider that the total estimate would be sufficient to cover the extra cost.
2342. Does the same remark hold good in reference to the various creek crossings between Narrabri and Moree? Yes.
2343. *Mr. McCourt.*] Can you tell us the cost of the various surveys that have been made in connection with the line from Narrabri to Moree? No; but I will get you the information if possible.*
2344. Would the amount spent in that way be included in the cost of this line? Not if it were charged to trial surveys; but if it has been charged to the Vote for a line from Narrabri to Moree the charge would probably be transferred to the new Vote, unless proper representation was made. My estimate does not include the cost of previous surveys.
2345. Do you not think it would save a considerable sum of money if, before a survey was made, the route was referred to this Committee for approval? That is, I think, a matter which the Committee might consider and make a recommendation upon. I am scarcely in a position to give an opinion in regard to it. Such a course would, however, cause a good deal of trouble, because sometimes a route would be advocated and be apparently the best, and then another route would be suggested and would have to be examined. I do not think that the Committee would ever finish dealing with the various proposals.
2346. Does not the same thing occur now—every route referred to the Committee has its advocates? Yes. 2347.

* NOTE (on revision):—The following amounts have been expended:—Prior to 1884, £315 7s. 9d., charged to Trial Survey Vote; since then, £4,006 11s. 4d., charged to vote Narrabri to Moree.

- H. Deane,
Esq
19 Dec., 1893.
2347. You estimate that you can get metal supplied to you at 2s. 6d. a yard? Two shillings and sixpence for the first section, and 3s. 6d. for the second.
2348. That is hard broken blue metal? No; gravel.
2349. River gravel? River gravel, if possible.
2350. Is round river gravel as good ballast as broken metal? It all depends. The Namoi gravel is very good. A great deal of the North-Western line is ballasted with it. The line from Moonbie up the range to the McDonald River, and beyond there right up to Uralla, is, if I remember right, ballasted with river gravel, and it is one of the best roads in the Colony. Some gravel is too free, but the Namoi gravel is very good.
2351. *Mr. Dawson.*] You have estimated that the bridge over the Namoi and Narrabri Creek will cost £5,250? Yes. It would be mostly a small timber viaduct, and it will be made very cheaply—about £3 a foot run.
2352. What would it cost to put an ordinary bridge there upon which you could take over a load of wool? It would cost quite as much as a railway bridge, in fact it will cost a good deal more; because it would have to be broader. Although the main spans of a railway bridge may be more costly than the main spans of a road bridge, when you come to the viaduct approaches at each end the railway bridge is very much cheaper.
2353. How was it that some time ago the bridge was estimated to cost £80,000? I am not responsible for that estimate.*
2354. *Mr. Collins.*] Do you think that a better crossing could be found near the road bridges? No; I think it would be very inconvenient to cross there. You could not get out of the station-yard properly, and you would have to widen the roadway and erect a new bridge, because the existing bridges are not strong enough.
2355. You do not think that that crossing would be better than the one selected? No; I am of opinion, after seeing the ground, that the place selected and shown on the map is by far the best.
2356. *Mr. O'Sullivan.*] The proposed line is selected by the officers of your Department and yourself? Yes; after due consideration and consultation with the residents.
2357. I understand that you proposed that route because there is less danger of flood than on the plains further west? Yes; that is one reason.
2358. The evidence of some of the local residents goes to show that the streams from the hills being stronger, the water would do more damage to the proposed line than to a line further west, on the plains;—would that be so? I am inclined to think that I answered that question before. It is far better to cross a river where the water-way is confined. If you cross lower down, where the water is almost at a standstill, you have to provide a very lengthened water-way in order to let the water cross at the slow rate which is natural to it there. If the water-way were only equal to what would be required where the current was stronger, the water would be backed up by the embankment, and would overflow the line. As a rule nothing more is required in foundation where the water is stronger than where the water spreads out.
2359. These remarks would apply in a minor degree to the crossings of all the creeks between Narrabri and Moree? Yes.

* NOTE (on revision) :—It is understood, of course, that my estimate is for a timber bridge throughout.

PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS.

Railway from Narrabri to Moree.

APPENDIX.

A.

[To Evidence of J. Barling, Esq.]

PRECIS OF PAPERS RELATING TO THE PROPOSED RAILWAY FROM NARRABRI TO MOREE.

The first action in connection with this proposed line appears to have been taken in the year 1883, when Mr. Secretary August, 1883. Wright gave instructions for a trial survey to be made.

In April, 1884, a letter was received from the Department of Lands to the effect that 21,280 acres had been set apart in the counties of Nandemar, Jamison, and Couralic, for the purposes of this railway. In July of the same year a deputation, introduced by Mr. W. R. Campbell, M.P., waited upon the Minister to urge the carrying out of the work. The cost was then approximately estimated by Mr. Whitton at £539,500 (or 67 miles at £8,053 per mile.) In a letter dated August, 1882 (which however does not appear to have been received in this office until July, 1884), Mr. Campbell supported a suggestion by G. R. Walker, of Mungindi, for a line from Narrabri to that place *via* Moree.

On the Loan Estimates for 1884 the sum of £336,500 was voted for the work under the heading of "Light Lines."

In August, 1885, a petition was presented by Mr. Campbell from residents of Moree and neighbourhood, urging the following reasons for going on with the work:—

1. The opening of many new lines of trade, and increase of business, in anticipation of the new railway.
2. The impassableness of the roads in wet weather, owing to the nature of the soil greatly retarding the teams, and the traffic generally, which it was pointed out was very large, and also greatly delayed the mails and passenger traffic.

In October, 1885, Mr. Commissioner Goodchap directed the Traffic Manager to make inquiry regarding the traffic likely to be produced by a line from Narrabri to Moree, which he considered would serve to develop the resources of the districts traversed and command the trade beyond.

The Traffic Manager, on the 26th of same month, reported that in his opinion very little new traffic would be created. He was then directed to report more fully and give statistics. Accordingly, on the 20th November, 1885, he submitted a report which was much to the same effect as his previous report. He estimated that if the line were constructed a sum of not more than £5,908 12s. 10d. in excess of earnings from the mileage then open would be realised, while he estimated the working expenses at £9,727 17s. 8d. He thought, however, if the line were extended to the Queensland border a good deal of traffic which went to Brisbane would be attracted to our lines.

In April, 1886, Mr. Secretary Lyne laid before the Legislative Assembly (as Exhibits only) the plan, section, and book of reference of the proposed railway.

In September following, upon the motion of Mr. Lyne, the House approved of these by fifty votes to four. The Legislative Council however, referred (by twenty-two votes to four) the matter to a Select Committee, which, in a progress report, recommended a resumption of the inquiry during the ensuing session as the time was too limited for taking the necessary evidence. No subsequent report appears however to have been issued.

Mr. Hassall, M.P., presented a petition from residents of Moree urging the immediate extension of the line from Narrabri to Moree. They referred to the large quantities of wool forwarded to Narrabri for conveyance by rail, and stated that when the line reached Moree this would be greatly increased from districts close to the Queensland border.

In a paper prepared in 1889 by the Railway Department, it was stated that the proposed line would pass through "an exceedingly level and rich country," and could be constructed at a small cost (£325,447.) The extension, if sanctioned, could eventually be carried on to Mungindi, or to a more easterly point on the Queensland border. It was further stated that the cost of construction might be reduced by laying down the line as a cheap railway on the basis suggested in a report of Sir John Fowler made in March, 1886. In addition fencing might be omitted, inexpensive but ample station accommodation provided, and trains run during the day-time only, while by running mixed trains the working expenses could be largely reduced. Such a line, it was thought, would prove remunerative, and "at the same time tend to draw still further to this Colony the trade of Southern Queensland." A large saving would, moreover, be effected in road expenditure; as the railway would convey the traffic, there would be little or none on the main road. The progress of the district was, the report said, retarded owing to the want of a convenient means of transit, and at times when it was suffering from drought, severe hardships were inflicted, but by direct communication produce could be cheaply and quickly sent there, while portion of the stock could be removed to, at the time, more favoured districts, to be returned with the recurrence of good seasons. Statistics were given with this report, showing that the district affected by the line contained about 2,500,000 sheep, representing 25,000 bales of wool.

Towards the end of the year, Mr. Hassall, M.P., moved in the Legislative Assembly that any scheme of railway proposals submitted to Parliament should include this line, but withdrew the motion on the assurance of Mr. Secretary Sutherland that he would lay the matter fairly before the Government when any railway schemes were being considered.

In March, 1889, a meeting was held at Narrabri to urge the survey of a line by the travelling stock route *via* Killarney, Edgeroi, and Gurley. The following month the district was visited by the Commissioners for Railways, and a deputation, which waited upon them, expressed the hope that they would recommend the granting of rail communication between Narrabri and Moree.

The Commissioners in their report of inspection suggested that, with a view to save the cost of an expensive viaduct in leaving Narrabri, a survey should be made of a westerly course as far as Gurleigh Point, that the Namoi should be crossed at or near that place, and that the line should proceed thence to Keramingly and Moree. Mr. Deane reported favourably upon the proposal, and the report was referred to the Railway Commissioners, who recommended that the altered route should be adopted, and Mr. Bruce Smith approved on 15th October, 1889, of the survey being carried out.

In October, 1889, Mr. Hassall was informed by the Department that the trial survey *via* Gurleigh Point was completed, but that the plans and book of reference were not ready. He wrote early in the following year to ask when the plan and book of reference would be brought before the Cabinet, and was promised that they should be submitted before the meeting of Parliament. In June, he forwarded a letter from the Moree Railway League in regard to the rumour that Messrs. Fisher and Co. had decided to remove their wool-washing establishment from Darvel, involving serious loss of traffic on our lines; and was informed, in reply, that the proposed railway would be again submitted to Cabinet. During the following year he kept the matter in evidence, but the bad financial prospects prevented its being brought before Parliament.

In June, 1891, Mr. R. E. Jones, Temporary Examiner of Public Works Proposals, was instructed to report on certain proposed railway extensions, including this line. He dealt with the various suggested routes, and recommended the adoption of that *via* Gurleigh Point, giving his reasons. (See pages 24 and 25 of his report.)

Messrs. C. Collins and J. Sheldon, M's.P., forwarded copies of resolutions passed at a public meeting at Narrabri, condemning Mr. Jones' report as "unreliable and incomplete, misleading and incorrect as to the comparative flood-levels of the country, and palpably wrong and injurious to the best interests of the district."

Mr.

- 16/7/91. Mr. Deane reported to the Minister, in July, 1891, regarding certain proposed alterations of route, which were,—
- (1.) To abandon 6 miles of the existing line, cross at the Rocky Crossing, and skirt the town of Narrabri;
 - (2.) To adopt the so-called direct route, involving bridges over the main river and the Narrabri Creek; and
 - (3.) To follow the left bank of the river, and cross at Gurleigh Point.
- (1.) The disadvantage of this route lay chiefly in the abandonment of a portion of the existing line, and the loss of a good deal of traffic likely to use the Gurleigh Point line;
- (2.) While the second route would pass through long tracts of flooded land, and not be of advantage to Narrabri;
- (3.) The third route had the best crossing over the Namoi; was the cheapest, and would take the traffic from Wee Waa and Collarindabri. This was also recommended by the Commissioners for Railways. The estimated cost was £257,450, or £3,585 per mile.
- 27/2/92. Mr. Hassall continued to urge the advisability of constructing this railway, and on his forwarding a communication from the Railway League (Moree) was informed that the line would be brought forward at the earliest possible date, although it would not be dealt with during the session. The matter being pressed by the League, a letter was written to Mr. Hassall stating that this line would be included in the list of railway proposals to be brought before Cabinet. Mr. Hassall, during the next month, asked in the Legislative Assembly if the line would be amongst the railway proposals to be presented to Parliament for reference to the Public Works Committee, and received a similar reply.
- 6/9/92. An entirely fresh aspect of the question was (10th October, 1892) brought under notice by a minute by the Commissioners for Railways to the Minister for Railways, on narrow gauge railways, in which they advocated the construction of "pioneer lines" through purely pastoral and level country, where the traffic would be light, at a cost of about £1,750 per mile, exclusive of bridges, waterways, and station accommodation. The Engineer-in-Chief for Railways considered, however, that this was too favourable an estimate; and that the lowest cost per mile for a line on the standard gauge and fit to carry existing rolling stock through an agricultural district would be about £3,443, and through a pastoral district £2,808.
- 6/10/92. On the 4th November, 1892, the Railway Commissioners wrote referring to conversations the Chief Commissioner had had with the Minister on the subject of cheap lines, and stated that in their opinion the extension from Narrabri to Moree and from Bourke to the Queensland Border were the most urgent lines. Unless they were made, the Commissioners said a large traffic would be transferred from the railways in this Colony to those in Queensland.
- The Minister then communicated with the Commissioners, and asked that, as the Chief Commissioner would shortly be in the district, he would give his opinion as to the application of the principle of light lines as laid down in the Commissioner's minute of 10th October, to the line from Narrabri to Moree, as from the nature of the country to be traversed it probably afforded a favourable opportunity for testing the principle. In reply, the Commissioners stated that, as they had no authority by law to deal with estimates and plans for the construction of railway lines, they felt the best method would be for the Minister to instruct Mr. Deane to prepare plans and estimates on the lines laid down in their minute, obtaining from the Commissioners their assistance and advice as to the minimum cost for which a "pioneer" line could be constructed from Narrabri to Moree.
- Upon this the Minister minuted that he was not prepared to act in the manner suggested, but in order to enable the Commissioners to prove that cheap lines could be constructed at the price stated in their minute, he was prepared to approve of any course suggested by them for the purpose. He asked whether the Chief Commissioner was prepared to submit an estimate with plans of the line, and if so, he would be prepared to consult the Cabinet as to the desirability of constructing it.
- In reply, the Commissioners pointed out that they had no staff available for the purpose, besides which, the work was outside their functions. They further said that the class of line which they considered could be constructed for £1,750 per mile, exclusive of bridges, stations, &c., was not a "light line," but a "pioneer line," not capable of doing what a "light line" could.
- The Minister then minuted: "As the Railway Commissioners do not seem to have any desire to carry out this 'pioneer line,' the matter must be submitted to me at an early date for further consideration."
- 25/11/92. In a minute of this date the Engineer-in-Chief for Railway Construction, replying to a communication addressed to him by the Railway Commissioners, forwarded alternate estimates of the two routes, viz., the "direct" route and the "Gurleigh Point" route, one being for construction on the ordinary lines, and the other allowing less ballast, cheaper sleepers, fencing almost entirely abolished, and, in fact, cut down in every possible way. These estimates are as follows:—
- | Ordinary System of Construction. | Cheap Lines. |
|---|---------------------------------------|
| Direct Route, £250,392 11s. 3d. or £4,143 per mile..... | £179,982 17s. 6d. or £2,978 per mile. |
| Gurleigh Point Route, £261,332 15s. 6d. or £3,641 per mile..... | £204,774 1s. 6d. or £2,853 per mile. |
- Mr. Deane pointed out that if any attempt were made to cut the earthwork bridges or ballasting down any further great difficulty would be experienced in keeping the line maintained at all over the black soil plains.
- 12/12/92. By a minute of this date the Minister directed the Engineer-in-Chief for Railway Construction to take steps at once to reconsider the line with the view of cheapening it as much as possible, consistent with efficient working, the "direct" route being selected by the Minister for the purpose.
- 1/3/93. The Engineer-in-Chief reported the result of inspections he had made in connection with the carrying out of the Minister's instructions referred to in the previous paper. He dealt particularly with the question of the river crossing, which is a large item in the cost of the line, and stated that he had given instructions for the investigation of a new route for connecting with the line at Narrabri, which, he thought, would turn out to be far better than any before proposed.
- 12/10/93. On the 12th October, 1893, Mr. Collins, M.P., asked the Minister, in the House, whether, before deciding on a route for this line, he would cause a survey to be made from Narrabri to a point near the township of Wee Waa, from thence to the travelling stock route, via Millie, to Moree. In reply, Mr. Lync stated that as it would involve a deviation from the direct route of something like 20 miles, he did not see that any good purpose would be served by having a trial survey made.
- 24/10/93. A communication dated 20th October, 1893, was received from Mr. John H. Murphy, of Jurs Lagoon, Millie, in which, on behalf of persons residing north-west of Narrabri and Moree, he submitted reasons in favour of the line being constructed by a route starting from the Railway Station at Narrabri West, via Gurley Point, Boggy Creek, and thence to Moree.
- 10/11/93. Mr. Sheldon, M.P., presented a letter from Mr. J. Halse, Hon. Secretary of the Millie Railway League, asking that the Public Works Committee be requested to visit Millie when on their way from Narrabri to Moree, to hear evidence as to the desirability of the line being constructed on the travelling stock reserve via Keraningly. They urged that this reserve was already fenced, and that splendid material for ballast could be obtained at Boggy Creek, at which place a splendid quarry of blue metal could be obtained.
- Mr. Deane's final report on the matter has been submitted. He recommends the adoption of a route leaving the North-western Line east of the present Narrabri Station, crossing the river at Cooma, and the Rocky Crossing line at the township, meeting the "permanently staked line" 20 miles from Narrabri, the distance being 63 miles 50 chains, and the estimated cost £153,000, exclusive of land and compensation.
- 10/10/93. The Railway Commissioners were asked by the Minister to submit their report on the line, as required by the Public Works Act. This report was submitted on the 13th November.
- On the 1st November the Legislative Assembly, on the motion of the Minister for Public Works, assented to the matter being referred for the consideration of the Public Works Committee, on the conditions that the line should be carried out under the terms of the proposed "Betterment Act."
- 13 November, 1893.
- J. B. BURLING.
- P.S.—Mr. Sheldon, M.P., handed in an extract from the *Narrabri Herald*, of the 11th November, giving an account of a meeting held at Wee Waa on 3 November to urge the Government for a survey and inspection of a route to cross the Namoi a short distance from Wee Waa. A Railway Committee was appointed at the meeting.
- The same extract contains an account of a meeting held at Millie on the 4th November. It is stated that the meeting "were unanimous in their strong condemnation of the last surveyed route, and affirmed, in no measured tones, that the line should be made on the travelling stock reserve via Keraningly. They also considered that the Public Works Committee should sit at Millie and take evidence, as the owners of about 1,000,000 sheep, as well as cattle and horses, were affected."
- J. B.

A1.

POINTS CONNECTED WITH IMPORTANCE OF HAVING PERMANENT NAVIGATION FROM BREWARRINA TO THE QUEENSLAND BORDER.

Water Conservation, Irrigation, and Drainage, 14 November, 1893.

1. The distance by river from Brewarrina to Walgett is 160 miles, from Walgett to Collarindabri 81 miles, and from Collarindabri to Mungindi on the Queensland border 74 miles, thus making a total of 315 miles by river from Brewarrina to Mungindi.

2. In 1879 the steamer "Brewarrina" went up as far as Collarindabri.

3. During the present year a steamer has gone to Mungindi.

4. As a very large proportion of the land in the Walgett and Moree districts consists of black soil, and is subject to inundation, ordinary roads are almost impassable after heavy rains. This fact adds additional value to river and railway communication.

5. To a certain extent the proposed railway from Narrabri to Moree will compete with a navigable river from Walgett to Mungindi, but excepting in this respect it will have little effect on the river trade between Walgett and Brewarrina.

6. Owing in a large measure to the favourable character of the seasons, settlement in the Moree and Walgett districts has increased very rapidly in recent years, and all that is wanted to make that settlement permanent is improved communication.

7. On 31st December, 1890, the number of sheep in the Walgett Land District was 1,795,764, while on the 31st December, 1891, it had increased to 2,330,000. This was attributed by local authorities as being due in a large measure to increased settlement.

8. In 1890, seventy applications were received at Walgett for conditional purchases of land, and in 1891 one hundred and three applications. The deposits on such applications amounted to £4,000 in 1890, and to £7,000 in 1891.

9. The distance from Walgett to Sydney being nearly 160 miles less than from Bourke to Sydney, there is no doubt that all the river-borne trade from Mungindi downwards will eventually come direct from Walgett; and if Walgett be connected with the railways before Brewarrina, there will be a large river traffic from Brewarrina up to Walgett. Brewarrina is a most important centre as regards the part of Southern Queensland which is now being watered from artesian bores, and a great increase of the trade from it may be regarded as a certainty.

10. Nothing has yet been done towards clearing the Barwon or Darling between Walgett and Mungindi, yet as stated above a steamer succeeded in reaching the latter place this year, and steamers have repeatedly been at Collarindabri and occasionally at Mogul. The fall in the river from Collarindabri to Walgett is at the rate of about 6 inches per mile, and as there is no material difference in the velocity between the former place and Mungindi, the rate of fall cannot be materially different. There would be no difficulty in making the river permanently navigable to Mungindi.

H. G. MCKINNEY,

Chief Engineer.

The Under-Secretary, Department of Public Works.

A2.

TABLE OF DISTANCES.

Moree	to Mungindi	65 miles.	
"	" Bogabilla	65 "	
"	" Inverell	80 "	
"	" Narrabri	64 "	
Narrabri	" Gurleigh Point	15 "	
"	" Wee Wee	20 "	
"	" Pilliga	55 "	by direct line.
"	" Walgett	114 "	"
Moree	" Newcastle	314 "	
"	" Sydney	414 "	
Inverell	" Newcastle	375 "	
"	" Sydney	475 "	
"	" Glen Innes	53 "	
Mungindi	" nearest point on Charleville line, <i>via</i> Roma	166 "	
Bogabilla	" nearest point on Charleville line, <i>via</i> Pittsworth ...	95 "	
Charleville	" Brisbane	483 "	
Roma	"	318 "	
Pittsworth	"	137 "	

H.D., 14/11/93.

B.

[To Evidence of H. Deane, Esq.]

RAILWAY FROM NARRABRI TO MOREE—DISTANCES.

	Miles.	Chains.
Length of railway route <i>via</i> New Narrabri station and the travelling stock route to Moree.....	60	70
Distance of Bingara from the proposed line—direct	48	0
Length of road from Couralli station to Bingara <i>via</i> Terry-hic-hie—about	62	0
Length of road from Moree station up the Gwydir River to Bingara <i>via</i> Paramellowa and Guncraai—about ...	50	0
Narrabri to Bingara by road <i>via</i> Edgeroi—about	68	0

The above distances were asked for during my examination before the Committee.

H.D., 17/11/93.

C.

[To Evidence of H. McLachlan, Esq.]

COST OF WORKING THE RAILWAY IF ELEVEN MILES LONGER.

Government Railways of New South Wales,

Secretary's Office, Sydney, 16 November, 1893.

Dear Sir,

Mr. O'Sullivan, M.P., at the Public Works Committee to-day, asked what would be the increased cost of working the Moree line if it were made 11 miles longer. I stated it would be difficult to give an answer off-hand, and I may point out that while the estimated maintenance expenses might be proportioned, it would not do to follow the same rule in regard to the traffic and locomotive, as, in regard to the former, the 11 miles might mean the introduction of one or two stations, necessitating staff being kept and consequent expense; while in the case of the loco. the present estimate is based on certain men now employed being able to take in an additional mileage.

The 11 miles additional (22 miles return) would introduce a disturbing factor and probably render the service daily too great for the staff in view, and perhaps necessitate arrangements which would mean an expense more than proportionate to the additional mileage.

The Secretary, Parliamentary Standing Committee on Public Works, Sydney.

Yours faithfully,

H. McLACHLAN,

Secretary.

D.

[To Evidence of E. C. Weller, Esq.]

RETURNS OF STOCK IN THE DISTRICTS TO BE SERVED BY THE PROPOSED RAILWAY.

Department of Mines and Agriculture,
Stock and Brands, Sydney, 6 December, 1893.

Sir,
I have the honor to forward herewith three lists, showing the number of horses, cattle, and sheep in the districts marked 1, 2, and 3 on tracing forwarded by you to this Department with your letter of the 4th instant.

The lists include all the pastoral lessees, and the small owners so far as they can be located from the Sheep Brands Directory, and tracings of the sheep districts.

An estimate of the number of stock held by owners who cannot be located is added to each list.

I have, &c.,

HARRIE WOOD,

Under Secretary.

The Secretary, Parliamentary Standing Committee on Public Works.

No. 1.

Name	Address.	Horses.	Cattle.	Sheep.
Hooper and Barnett	Merriwa	60	500	12,000
Phillips W. O.	Merriwa	11	9	978
Gordon R. D. and S.	Melton Ridge	5	6	4,400
Brown Bros.	Boggabilla, Coppymoranbilla	60	1,200	44,000
Jenkins R. L.	Carrabuck	15	35	27,285
Carrigan J. P. and O. E.	Boggabilla	10	40	7,000
Allen R. C.	Boobera	10	30	2,000
Lenz A.	Boobera	7	8	16,000
Lalor W.	Goondiwindi	180	1,500	
Amos Bros.	Tulloona	234	240	107,826
Keen W.	Tulloona	40	31	14,550
Muir J.	Goondiwindi	7	20	1,540
Monk, Viscount, and L'Amoy J. R.	Welbon	276	2,067	106,000
Donovan W.	Summerlea, Moree	9	4	4,000
Scott W. R. & Co.	Bogamildi	200	1,760	141,000
Scott S. and E. R.	Jamieson's selection, Welbon			9,500
Mathews P.	Welbon, Moree	7	5	802
Belford F.	Moree	45	30	8,000
Scott W. & Co.	Teralla	36	235	31,185
Dawson D.	Rosedale, Warialda	18	10	5,050
Barden C. W.	Boggabilla	38	40	3,500
Bailey W. C.	Roystonheath, Boggabilla	13	50	1,700
Brown A. M.	Booloroo, Moree	6	6	4,000
Jurd Mrs. M. A.	Booloroo, Moree	10	52	2,040
Wamsley, Cameron, & Co.	Tareclari, Moree	80	30	32,100
M'Millan Ann	Oregon, Warialda	46	273	16,532
Knauf A.	West End, Boggabilla	10	11	1,090
M'Millan and Ryan	Morella, Boggabilla	20	70	3,900
Conway D.	Gunyerwarildi	25	29	2,800
Donaldson J.	Gunyerwarildi	30	200	3,850
Mott C.	Rockvale, Warialda	24	160	12,230
Donaldson S.	Bendee, Gunyerwarilda	7	80	3,800
Donaldson J.	Bendee, Gunyerwarilda	11	50	3,980
Koira M.	Gunyerwarildi	12	100	5,364
Stann W. A.	Westholm, Warialda	9	29	2,221
Rose T. H.	Mulgala, Warialda	14	32	4,535
Mackay Bros.	Gunyerwarildi	128	125	43,447
Dangar Bros.	Yallaroo	166	303	80,732
Holmes R. Y.	Mingle Walla	37	120	4,400
Wilson G.	Boggabilla	10	40	7,530
Shelton J.	Trevalyan Park	12	350	
Walker, Trustees of	Boranga and Pallarang	29	2,710	20,912
Tyrrell, Executors of Bishop	Kunopia	39	5,860	13,080
Commercial Banking Company	Whalan	43	370	45,520
Hebden, Wilson, & Co.	Cowbail and Welbendungah	80	455	72,177
Arndell J.	Sandholes	100	2,500	11,060
Doyle Bros.	Werrina, Kunopia	42	3,758	38,700
Bunarbra Cattle Station			no returns.	
Weston and Macdonald	North Bunarba	47	80	23,744
Pain Mrs. S.	South Bunarba	87	220	40,927
Bucknell Bros.	Yarrowah	60	80	33,500
Bucknell T. S.	Yarrowah	11	3	940
Goldsbrough, Mort, & Co.	Wirrah and Caidmurra	250	540	120,000
Pearce W.	Collymogle	53	2,500	63,325
Robertson, Wagner, & Co.	Midkin	297	2,941	143,562
Ferguson G. R. E.	Curragundi	32	36	28,230
Taylor E. H.	Meroe, Moree	15	6	2,229
Rodgers Gordon	Meroe, Moree	97	1,636	13,320
Scriven T.	Cleveland, Mungundi	11	25	2,500
Bunn C.	Stanley, via Millie	16	4	3,127
Welsh T., junior	Gil Gil Creek, Mungundi	35	12	941
Timmins W.	Mogil Mogil	34	100	7,000
Christie W. J.	Carlingford, Whalan	7	7	5,500
Hitchins W.	Uroaba, Moree	35	52	3,000
Pittman A. T.	Sunnyside, Moree	14	20	3,500
M'Langhan W.	Wilderness, Moree	25	65	3,500
Warby J.	Booreyanna	10	60	9,650
Moore Bros.	Moorlands, Moree	11	20	13,060
Rawle W. H.	Cuddledool, Moree			1,850
Blair J.	Garah, Moree	7		2,308
Jakins B.	Orumpark, Moree	38	17	884
Morrison Mrs.	Miltonville, Moree	50	100	602
Strong W.	Curragundi, Moree	25	40	1,800

APPENDIX.

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No. 1—continued.

Name.	Address.	Horses.	Cattle.	Sheep.
Richards J.	Gil Gil Creek, Borah...	12	8	1,150
Hassall Mrs. M.	Ashleigh, Moree	50	100	2,850
Union Bank of Australia	Colinlee selection, Moree	25	80	1,200
Winter W.	Selection on Midkin	17	20	4,358
Murphy J.	Selection on Midkin	24	50	2,000
Wamsley and Dodd	Waterview, Moree	30	35	4,900
Delander W.	Watercourse, Moree	.....	.....	8,000
Delander R.	Watercourse, Moree	25	10	5,000
Gilmartin H. J.	Watercourse Moree	5	40	4,000
Cummings B. J.	Newlawn, Kunopia	4	.....	1,900
Bucknell Bros.	Gingham	10	.....	26,380
Bruin Mrs. A.	Fairfield, Kunopia	20	10	813
James G.	Whalan Creek, Moree	30	8	1,600
Jurd R. W.	Watercourse, Moree	12	4	3,500
M'Laughlan J.	Coolah	30	30	1,050
Maiden W.	Watercourse, Moree	14	20	2,000
Moore W. and E.	Moree	3	5,000	.....
M'Intosh J.	Moree	.....	.....	1,000
Pacey H.	Midkin	34	40	984
Total for List No. 1		3,833	39,692	1,586,000
Estimate for small owners, horse and cattle		780	8,000	.....
Estimate for small sheep owners who cannot be located		.....	.....	6,000
Grand total		4,663	47,692	1,592,000

No. 2.

Name.	Address.	Horses.	Cattle.	Sheep.
Russell J.	Pian Creek, Wee Waa	12	30	2,800
Loder T. A.	Rosewood, Narrabri	10	93	1,063
Loder A. M.	Puriwa	16	150	700
Miller J.	Burrans	20	70	300
Mitchell W. T.	Wee Waa	15	14	2,220
Radford J.	Pian Creek, Wee Waa	10	5	1,985
Knight Bros.	Pian Creek, Wee Waa	40	45	12,763
Kelabar C.	Pian Creek, Wee Waa	8	8	3,000
Campbell J.	Wee Waa	2	1	7,000
Thompson A.	Woodlands, Wee Waa	4	10	550
Toohy J. J.	Belabo, Narrabri	6	4	1,500
Dewson M.	Merah, Wee Waa	30	70	703
Dewson E.	Merah, Wee Waa	25	30	1,403
Wall T.	Wee Waa	7	20	1,800
Robertson J.	Wee Waa	.....	.....	.....
M'Mahon	Wee Waa	21	97	1,187
Hardy J.	Drilldool	12	20	1,511
Smith W. B.	Millie	13	12	4,000
Powell S.	Drilldool, Wee Waa	36	20	8,050
Turner O.	Buglebone	13	.....	4,700
Thompson Mrs.	Wee Waa	10	37	5,074
Coward C.	Fairview, Wee Waa	2	.....	771
Holcombe W.	Weeta Waa	20	120	6,530
Munroe and Wilson	Avon Downs, Millie	14	16	7,700
Boland Bros.	Anglefield, Millie	31	4	3,520
Duff J.	Millie	24	6	3,060
Duff J.	Millie	12	40	2,000
Cameron Bros.	Millie	3	10	2,000
Curr T.	Millie	19	27	591
Murphy W. J.	Jew's Lagoon, Millie	22	17	18,140
Lehane and Son	Narrabri	38	54	15,212
Borthwick W.	Narrabri	32	15	8,000
Hall H.	Wee Waa	24	9	1,340
Kendall Bros.	Moree	40	24	8,000
M'Donald J.	Glencoe, Moree	20	35	4,800
Maidens J.	Biniguy	25	116	800
Parry G. A.	Moree, Moree	12	.....	2,100
Parry G.	Moree, Moree	12	220	2,600
Stuart R. W.	Wee Bolla Bolla	16	5	8,000
Walsh J. J.	Bulleroi	17	8	1,000
Wilnot J. G.	Moree, Moree	60	155	6,880
Peard H. T.	Roselea, Millie	21	21	6,361
Carstons A.	Narrabri	4	.....	1,884
Hunt Bros.	Nowley Park, Narrabri	37	50	5,088
Hunt J. J.	Nowley Park, Narrabri	12	20	2,586
Hunt J.	Nowley Park, Narrabri	7	6	2,000
Hutchinson	Burrans, Narrabri	5	.....	3,000
Moore M. J.	Buglebone, Pilliga	27	16	5,992
Belson A.	Eden, Narrabri	13	20	2,210
Belson C.	Wee Waa	20	20	1,900
Baldwin C.	Burrans	4	12	2,000
Baldwin D.	Burrans	5	5	900
M'Farlane G.	Burrans	10	45	730
Coward D.	Wee Waa	15	30	2,514
Houlahan N.	Millie	5	68	3,500
Dempsey S.	North Land, Pilliga	20	150	5,000
Murphy D.	Millie, Pilliga	28	25	3,645

No. 2—continued.

Name.	Address.	Horses.	Cattle.	Sheep.
Bennett J. E.	Pilliga	8	3,500	.....
O'Mullane J.	Buglebone	3	80	1,000
O'Mullane O.	Wee Waa	4	2	700
O'Mullane W.	Buglebone	22	150	5,050
Blair E. W.	Pilliga	4	1,781	.....
Corcoran G.	Kinaculla, Pilliga	6	20	1,908
Balgarine E.	Buglebone	9	.....	1,710
Bennett W. T.	Buglebone	25	7	5,526
Belson A. H.	Eversleigh	6	4	1,630
City Bank	Oreel	144	93	168,000
Adams E.	Wryambra, Mogil Mogil	30	50	7,000
Banks G. W.	Strathclyde, Millie	2	.....	2,000
Barrett P. and J.	Maryville, Millie	13	2	5,020
Shearer G.	Avondale, Collarendabri	15	10	2,000
Ludlow F.	Iffley, Millie	16	102	5,425
Parry Mrs. E. C.	Bronte, Meroc	1	8	1,200
Jennings J.	Collarendabri	.....	.....	609
Wright J.	Collarendabri	11	26	470
Devy A.	Oreel, Millie	6	18	2,227
Vickery E. and Sons.	Mungyer	270	2,790	65,768
Watt Bros.	Goonal	161	2,260	46,300
Richards and Williams	Tyrell	80	5,000	.....
Moses W.	Combaddello	26	200	47,540
Wathagar	.....	.....	no returns.	.....
Munro A.	Webolla Bolla	65	1,200	50,700
Pearce J.	Tycannah	.....	320	22,033
Moloney Bros.	Bumble, Moree	25	17	16,938
Soling F. P.	Moree	21	26	1,643
Gall Bros.	Moree	71	175	7,890
Jurd G.	Bulleranna	.....	.....	9,000
Jurd J.	Bulleranna	30	300	7,000
Cross D.	Watercourse, Moree	15	35	4,540
Carver D.	Bunguy Hotel, Moree	18	8	1,400
Carver W.	Myall Vale, Moree	40	180	900
Conroy N. A. and A. S.	Boonaldoon	30	150	12,562
Clarke M.	Fairview, Moree	20	30	2,200
Collins H.	Goonal	.....	.....	2,600
Cross W. A.	Watercourse, Moree	6	15	1,500
Cameron J.	Moree	80	312	3,057
Clarke M.	Moree	20	30	1,200
Cross J. E.	Moree	10	25	2,500
Duff W. S.	Moomin Creek, Moree	10	25	1,960
Archer P.	Watercourse, Moree	10	10	4,000
M'Leod and Wilson	Blair Athol, Moree	92	180	17,937
Tillman W.	Hilton, Moree	12	.....	1,300
M'Garry J.	Glangarry, Moree	30	40	3,500
Woods W.	Moree	20	40	5,800
Parry R.	South Warren, Moree	8	25	1,160
Power and Forest	Dromana, Moree	9	14	6,100
Scott J. W.	Woodstock, Moree	10	100	3,200
Hamilton W.	Combaddello, Moree	12	70	8,220
Halse J.	Bumble, Moree	10	43	4,750
Warner, Executors of	Carrington, Moree	9	36	10,000
Fingalton C.	Bumble, Moree	7	9	750
Hamilton C. J.	Strathhaven, Moree	.....	.....	2,240
O'Neil M.	Glenalbin, Moree	22	30	2,200
Burrow Bros.	Bunna Bunna	60	120	55,000
Vickery and Son	Nowley	105	75	27,500
Barton R. D.	Burren	62	50	30,000
Hocken & Co.	Central Block 3	50	300	9,000
Capel C.	Gorian	49	180	50,700
Cook T.	Drilldool	130	1,300	40,550
Loder G.	Merah	61	2,953	34,000
Buchanan A.	Millie	50	1,800	10,000
Summer and Benn	Buglebone	76	60	55,000
Eckford R. F. M.	Millie North	70	300	30,250
Eckford J. W.	Malaraway	4	40	25,800
Taylor J.	Dobokin	13	95	28,000
Namoi Pastoral Company	Edgeroi	126	207	151,604
Fletcher & Co.	Boolcarrol	109	151	10,400
M'Kenzie W.	Wee Waa	30	200	21,000
M'Gill & Co.	Molly	.....	.....	21,000
Broughton C. F.	Bulleroi, via Millie	3	11	1,000
Jurd D.	Luckshole, Moree	25	100	2,000
Kennedy W. M.	Rosewood, Moree	45	85	8,300
Shannon Bros.	Myall Vale, Narrabri	8	25	3,000
Whitman J.	Narrabri	22	70	540
Wall J.	Appletree Clump, Narrabri	20	24	2,734
Wall C.	Appletree Clump, Narrabri	8	23	1,000
Wyatt W.	Gundermain	13	35	2,518
Wall E. J.	Narrabri	10	10	2,000
Herbert W.	Gundermain	.....	3	300
Barbour J.	Narrabri	18	86	1,925
Maxwell W.	Narrabri	12	16	2,815
Clay J.	Narrabri	33	43	1,828
Watson S. R.	Millie	8	30	500
Graham A.	Wee Waa	4	40	300
Dean W.	Wee Waa	7	13	300
Smith R.	Wee Waa	15	20	900
Perry H.	Narrabri	9	20	3,080
Harden & Wilkinson	Lower Boolcarrol	7	3,000

APPENDIX.

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No. 2—continued.

Name.	Address.	Horses.	Cattle.	Sheep.
Fenwick Bros.....	Wee Waa.....	17	24	6,368
Bowen A.....	Wee Waa.....	6	10	2,410
Condon D.....	Boolcarrol.....	18	12	3,408
Schwager W. F.....	Rosewood.....	50	50	500
Brennen L.....	Wee Waa.....	17	11	4,967
Dickson Bros.....	Edgeroi.....	19	30	7,186
Wall W.....	Galathera.....	6	12	250
Forcet T. J.....	Narrabri.....	10	.....	606
Magil G. and D.....	Fisherwick.....	29	21	2,785
Duncombe J. C.....	Narrabri.....	15	.....	1,957
Allen T. C.....	Sandlewoods.....	18	.....	600
Total of List No. 2.....		4,017	30,308	1,475,402
Estimate for small owners who cannot be located.....		300	1,000	5,000
Grand Total.....		4,317	31,308	1,480,402

No. 3.

Name.	Address.	Horses.	Cattle.	Sheep.
Buchanan W. F.....	Killarney.....	50	1,400	55,700
Simpson J.....	Gurley Station.....	55	145	138,385
Bowman Bros.....	Terry-hie-hie.....	180	9,500	33,800
M'Donald and Co.....	Mungie Bundie.....	10	.....	31,000
Manchee J. W.....	Biniguy.....	150	2,300	11,550
Ritchie W.....	Yagobe.....	170	3,800	6,850
Boydell J. F.....	Slaughterhouse.....	18	250	3,400
Wethered R.....	Gineroi.....	23	50	1,100
Corrigan J.....	Bangheet.....	400	800	21,000
Arndill.....	Rocky Creek.....	110	2,130	30,000
Derra Derra.....	.....	.....	no returns	.....
Corry J. E.....	Terry-hie-hie.....	33	50	1,190
Dally C.....	Biniguy.....	17	50	1,000
Drinan Bros.....	Terry-hie-hie.....	15	20	5,625
Glennie F. C. and A.....	Norwood, Moree.....	14	140	5,700
Hann E.....	Terry-hie-hie.....	14	25	2,708
Harding W. A.....	Moree.....	15	16	3,580
Hann F.....	Moree.....	6	5	1,187
Kirby F. W.....	Moree.....	34	140	1,502
M'Intosh W.....	Moree.....	21	11	2,805
Moloney J.....	Moree.....	6	30	1,730
Maidens E.....	Yagobe.....	21	2,031	.....
Maidens J.....	Biniguy.....	25	116	800
O'Sullivan J.....	Terry-hie-hie.....	5	6	932
Pittman J.....	Terry-hie-hie.....	12	26	3,800
Wells P., junior.....	Mountain View, Warialda.....	8	20	400
Wells P., senior.....	Mountain View, Warialda.....	3	20	100
Stevens G. E.....	Gineroi.....	8	.....	1,500
Smith F.....	Warialda.....	18	70	2,000
M'Calman J.....	Warialda.....	12	356	10,094
Campbell D.....	Warialda.....	30	80	1,500
Salway J.....	Warialda.....	36	24	1,200
Mitchell J.....	Warialda.....	10	6	531
Buchanan F. W.....	Narrabri.....	1	18	859
Grason D.....	Spring Creek.....	6	30	1,000
Mappin B.....	Spring Creek.....	13	21	565
Spence B. J.....	Speedwell Farm.....	15	16	466
Gaddes G. M.....	Vermont.....	10	10	2,500
Total of List No. 3.....		1,574	23,712	388,059
Estimate for small owners who cannot be located.....		300	100	3,000
Grand Total.....		1,874	23,812	391,059

E.
[To Evidence of R. E. Jones, Esq.]
NARRABRI TO MOREE RAILWAY.—DISTANCES.

		Miles.			Miles.			Miles.		
Sydney to	Newcastle	102	Tamworth to	Glen Innes (railway)	141	Grafton to	Glen Innes (approximate) ...	120		
	Tamworth	281		Inverell (via Glen Innes)	195		Inverell	174		
	Glen Innes	422		Warialda "	234		Moree	283		
	Deepwater	445		Bingara "	242					
	Narrabri West	350		Bingara (by road).....	100					
	Moree (direct line)	413		Warialda (by road)	127					
	Moree (Gur. Point line)	422								
	Inverell (via Glen Innes)....	476								
Newcastle to	Tamworth	183	Narrabri to	Moree (via direct line)	63½	Queensland distances—				
	Glen Innes	324		Moree (via Gur. Point)	72	Brisbane to Cambooya	125			
	Inverell (via Glen Innes)....	378		Pilliga (by road)	64	Brisbane to Warwick	168			
	Deepwater	410		Walgett (by road)	124	Brisbane to Wallangarra	233			
	Narrabri West	252		Collarindabri	100	Brisbane to Dalby	153			
	Walgett (present road)	376		Angledool (via Collareendabri)	160	Brisbane to Yeulba	201			
	Moree (direct line)	315		Millic (by road)	40	Yeulba to Mungindi	130			
	Moree (Gur. Point line)	324		Moree (by road)	72	Mungindi to St. George St.	80			
	Bingara (via Moree, direct	377		Rocky Creek (by road)	40	" " (via Dayreel)	90			
	line).			Terry Hie Hie (by road).....	52	" " to Goondiwindi	120			
	Warialda (via Moree) "	368	Bingara	67	Goondiwindi to Warwick (via	144				
	Yetman (via Moree) "	390			" Inglewood and Leyburn).					
	Goondiwindi (via Moree)	404	Mungindi	75	Mungindi to A. P. Co.'s shed ...	40				
	" (proposed deviation)	389	Kunopia	66						
	Warwick " "	529	Goondiwindi (present road)...	89						
	Warwick (via Jennings)	453	Goondiwindi (proposed road)	73						
	Bingara (via Inverell)	425	Yetman (via Yallaroi)	75						
	Warialda "	417	Warialda (via Ezzies)	53						
	Moree "	487	Warialda (via Bogamildi)	55						
	Yetman "	458	Bingara (via Gineroi)	62						
	Goondiwindi "	498	Mogil Mogil	90						
	Warwick, Queensland (via	638	Inverell (via Binga)	109						
	Inverell).		Glen Innes	163						
Bingara (by road from Tamworth)	283	Grafton (via Glen Innes)	283							
Warialda " "	310									
Yetman " "	370									
Goondiwindi " "	410									
Mungindi (via Moree)	390									

F.
NARRABRI TO MOREE RAILWAY.
Books of Reference.
Part I.

Name of Parish.	No. on Plan	Description of Property.	Names of		
			Owners.	Lessees.	Occupiers.
County of White.					
Parish of Cooma	1	North-western railway	Crown		
"	2	Road	"		
"	3	Public school ground	"		
"	4	Reserve	"		
"	5	Sawmill*	"		
"	6	Allotment	S. Dempsey		S. Dempsey.
"	7	"	"		"
"	8	Road	Crown		"
"	9	Paddock	S. Dempsey		P. Mulcahey.
"	10	Orchard	"		"
"	11	Cultivation paddock	"		"
County of Nandewar.					
Parish of Narrabri	12	Namoi River	Crown		
"	13	Paddock	Commercial Banking Co., Sydney.		
"	14	"	Commercial Banking Co., Sydney.		
"	15	"	Commercial Banking Co., Sydney.		
"	16	Narrabri Creek	Crown		
"	17	Paddock	Commercial Banking Co. of Sydney.		
"	18	Road (continuation of Maitland-street.)	Crown		
"	19	Allotment	James Lillyman, jun.		
"	20	"	"		
"	21	Lane	Crown		
"	22	Allotment	James Lillyman, jun.		
"	23	"	"		
"	24	Street	Crown		
"	25	Paddock	James Lillyman, jun.		
"	26	Travelling stock reserve 10,260.	Crown		

* Owner not known.

Name of Parish.	No. on Plan.	Description of Property.	Names of		
			Owners.	Lessees.	Occupiers.
County of Nandewar— <i>continued.</i>					
Parish of Narrabri	27	Travelling stock reserve 13,552.	Crown		
"	28	Paddock	Geo. Bell		T. McDonald.
"	29	"	Mrs. M. Everingham		Mrs. M. Everingham.
"	30	"	A. Goldman		Malone.
"	31	Road	Crown		
"	32	Pastoral land	"		
"	33	G.R., 1,767	"		
"	34	Travelling stock reserve 1,763.	"		
"	35	Pastoral land	"		
"	36	Road	"		
"	37	Travelling stock reserve, 763	"		
"	38	Pastoral land	Andrew Buchanan		Wm. Buchanan.
"	39	Road	Crown		
"	40	Bush land	Wm. Buchanan		Wm. Buchanan.
"	41	"	"		Wm. Buchanan.
"	42	Forest reserve, 2,372	Crown		
"	43	Bush land	F. J. Buchanan		F. J. Buchanan.
"	44	Road	Crown		
"	45	Bush land	F. J. Buchanan		F. J. Buchanan.
"	46	Forest reserve, 2,372	Crown		
"	47	Pastoral land	"	Wm. Buchanan	Wm. Buchanan.
"	48	Road	"		
"	49	Pastoral land	"	Wm. Buchanan	Wm. Buchanan.
"	50	Spring Creek	"		
County of Jamison.					
Parish of Bobbiwaa	51	Pastoral land	Crown	Wm. Buchanan	Wm. Buchanan.
"	52	"	Wm. Buchanan		"
"	53	"	"		"
"	54	"	"		"
"	55	Road	Crown		
"	56	Pastoral land	Wm. Buchanan		Wm. Buchanan.
"	57	Bobbiwaa Creek	Crown		
"	58	Pastoral land	Wm. Buchanan		Wm. Buchanan.
"	59	Roads	Crown		
"	60	Pastoral land	Wm. Buchanan		Wm. Buchanan.
"	61	"	"		"
"	62	"	"		"
"	63	"	"		"
"	64	"	"		"
"	65	"	Crown		"
"	66	"	"	Namoi Pastoral Association.	Namoi Pastoral Association.
Parish of Keera	67	Forest reserve 1,267	"		
"	68	Water reserve 404	"		
"	69	Pastoral land	"	Namoi Pastoral Association.	Namoi Pastoral Association.
"	70	Water reserve 1,040	"	Namoi Pastoral Association.	Namoi Pastoral Association.
"	71	Road	"		
"	72	Water reserve 1,040	"	Namoi Pastoral Association.	Namoi Pastoral Association.
"	73	Ten-mile Creek	"		
Parish of Coorong	74	Water reserve 1,040	"	Namoi Pastoral Association.	Namoi Pastoral Association.
"	75	Road	"		
"	76	Water reserve	"	Namoi Pastoral Association.	Namoi Pastoral Association.
"	77	Pastoral land	"	Namoi Pastoral Association.	Namoi Pastoral Association.
"	78	Road	"		
"	79	Railway reserve 1,944	"	Namoi Pastoral Association.	Namoi Pastoral Association.
"	80	Railway reserve 3,766	"	Namoi Pastoral Association.	Namoi Pastoral Association.
"	81	Railway reserve 3,766	"	Namoi Pastoral Association.	Namoi Pastoral Association.
Parish of Boorah	82	Travelling stock reserve 778	"	Namoi Pastoral Association.	Namoi Pastoral Association.
"	83	Railway reserve 11,321 (portion 9).	"	Namoi Pastoral Association.	Namoi Pastoral Association.
"	84	Railway reserve 11,321 (portion 10).	"	Namoi Pastoral Association.	Namoi Pastoral Association.
"	85	Railway reserve 1,944 (portion 11).	"	Namoi Pastoral Association.	Namoi Pastoral Association.
"	86	Freehold (portion 45)	Taylor Bros.	Namoi Pastoral Association.	Namoi Pastoral Association.
"	87	Freehold	"		
"	88	Portion 56	"		S. Taylor.
"	89	Portion 44	"		"
"	90	Freehold (portion 43)	"		"
"	91	Road	Crown		
"	92	Freehold (portion 46)	Taylor Bros.		S. Taylor.
"	93	" (portion 33)	"		"

Name of Parish.	No. on Plan.	Description of Property.	Names of		
			Owners.	Lessees.	Occupiers.
<i>Part II.</i>					
County of Jamison.					
Parish of Boorah	94	Water reserve 1,252.....	Crown .....	.....	.....
"	95	Travelling stock reserve 1,754.	" .....	.....	.....
"	96	Pastoral land	"	S. Taylor	S. Taylor.
Parish of Woolabrar... ..	97	Travelling stock reserve 1,252.	"	"	"
"	98	Eckford forest reserve	"	"	"
Parish of Waterloo	99	"	"	"	"
"	100	"	"	"	"
Parish of Manamoí	101	"	"	S. Taylor	S. Taylor.
"	102	"	"	J. Simpson	J. Simpson.
"	103	Pastoral land	"	"	"
"	104	Freehold	J. Simpson	"	"
"	105	Pastoral land	Crown	J. Simpson	"
County of Courallie.					
Parish of Windoondilla ..	106	Freehold	J. Simpson .....	.....	J. Simpson.
"	107	" .....	" .....	.....	" .....
"	108	Road	Crown .....	.....	" .....
"	109	Freehold	J. Simpson .....	.....	J. Simpson.
"	110	" .....	" .....	.....	" .....
"	111	Road	Crown .....	.....	" .....
"	112	Reserve 1,235.....	" .....	.....	.....
"	113	Road (5 chains wide) .....	" .....	.....	.....
"	114	Pastoral land	"	J. Simpson	J. Simpson.
"	115	"	"	"	"
"	116	Road (3 chains wide)	"	"	"
"	117	Water reserve 710	"	J. Simpson	J. Simpson.
Parish of Peacumboul ..	118	Big Bumble Creek .....	" .....	.....	.....
"	119	Water reserve 710 .....	" .....	.....	.....
"	120	Travelling stock reserve ..	" .....	.....	.....
"	121	Water reserve 710 .....	" .....	.....	.....
"	122	Pastoral land	"	J. Simpson	J. Simpson.
"	123	Travelling stock reserve ..	" .....	.....	.....
"	124	Pastoral land	"	J. Simpson	J. Simpson.
"	125	"	"	"	"
"	126	Road	"	"	"
"	127	Freehold	J. Pearee	Gall Bros.	Gall Bros.
Parish of Tycannah	128	Tycana Creek	Crown .....	.....	.....
"	129	Freehold	J. Pearee	Gall Bros.	Gall Bros.
"	130	"	"	"	"
"	131	Railway reserve 1,944	Crown	"	"
"	132	Pastoral land	"	"	"
"	133	Road	"	"	"
"	134	Road (3 chains wide)	"	"	"
"	135	Freehold	A. Munro. ....	.....	A. Munro.
"	136	" .....	" .....	.....	" .....
"	137	Pastoral land	Crown	A. Munro.	"
"	137A	Occupation road	"	"	"
"	138	Railway reserve 3.....	"	A. Munro.	A. Munro.
"	139	Travelling stock reserve 885	" .....	.....	.....
Parish of Moree.....	140	Hall's Creek .....	" .....	.....	.....
"	141	Travelling stock reserve 465	" .....	.....	.....
"	142	Road (150 links wide) .....	" .....	.....	.....
"	143	Railway reserve 11,247 .....	" .....	.....	.....
"	144	Adelaide-street .....	" .....	.....	.....
"	145	Railway reserve 11,246 .....	" .....	.....	.....
"	146	Anne-street .....	" .....	.....	.....
"	147	Railway reserve 11,246 .....	" .....	.....	.....
"	148	Alce-street .....	" .....	.....	.....
"	149	Allotment	Mrs. Sweetman ..	.....	.....
"	150	" .....	" .....	.....	.....
"	151	Carver's Hotel	"	D. Carver.	D. Carver.
"	152	Allotment	"	"	"
"	153	Lane (25 links wide).....	"	"	"

PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS.

SECTIONAL COMMITTEE.

RAILWAY FROM NARRABRI TO MOREE.

REPORT.

THE Sectional Committee appointed on the 15th of November, 1893, to whom was referred the duty of examining the local witnesses, and the inspection of the route and country to be served by the proposed Railway from Narrabri to Moree, have the honor to report to the Parliamentary Standing Committee on Public Works:—

That the Committee, namely, Mr. J. Garrard, M.L.A. (Chairman), Hon. W. H. Suttor, M.L.C., Hon. John Davies, C.M.G., M.L.C., Mr. E. W. O'Sullivan, M.L.A., Mr. W. M'Court, M.L.A., Mr. T. T. Ewing, M.L.A., and Mr. H. Dawson, M.L.A., left Sydney by 6.15 p.m. train on Sunday, 19th November, 1893, arriving at Narrabri the following morning.

At 10 a.m. on Monday, 20th November, the Committee, accompanied by Mr. Paul, railway surveyor, proceeded to inspect the starting point of the proposed line near the Public School, Narrabri West, viewing the site of the railway bridges across the Namoi River and the Narrabri Creek, also the island between the two streams; then followed the surveyed line from the site of the proposed Narrabri station (fronting Maitland-street) to near the crossing of the Bingara road.

At 2.15 p.m. the Committee opened the inquiry at the Court-house, Narrabri, and examined the following witnesses:—Mr. G. S. E. Dale, solicitor, and mayor of Narrabri; Mr. C. A. Ross, contractor, and member of the Local Land Board; Mr. W. Gould, railway station master; Mr. G. Gregory, senr., farmer; Mr. T. Morath, sawmill owner; and Mr. J. MacNamara, road contractor.

On Tuesday, 21st November, at 10 a.m. the examination of witnesses was resumed, and evidence taken from the following persons:—Mr. D. Roche, retired police officer; Mr. E. P. Huxley, butcher; Mr. J. T. Ward, sen., farmer; Mr. W. M. Borthwick, grazier; Mr. G. Burney, journalist; Mr. J. Healey, bushman; Mr. J. Gately, storekeeper, and chairman Progress Committee, Narrabri West; and Mr. A. Martin, bushman.

At 9.30 a.m. on Wednesday, 22nd November, the Committee left Narrabri by special coach for Millie, *via* the main travelling stock route, reaching the Government tank, Galathra (15 miles), at 12.30 p.m.; Boggy Creek (30 miles), at 3.15 p.m. (at which place a detour is made from the travelling stock route), and arriving at Millie (40 miles), at 5.30 p.m. From 8 till 10.30 the same evening the Committee sat at the "Royal Mail Hotel," Millie, and examined Mr. J. Halse, grazier, and secretary of the Railway League, and Mr. A. Hill, manager of Mungyer Station.

On Thursday, 23rd November, at 9 a.m. the examination of witnesses was continued, and the following persons gave evidence:—Mr. R. Cribb, drover; Mr. J. Fingleton, hotel proprietor and grazier, Little Bumble; Mr. J. Duff, hotel proprietor and grazier, Millie; Mr. J. H. Murphy, grazier; Mr. J. A. Wilson, selector; Mr. F. C. Stavelcy, storekeeper and surveyor, Collarendabri; and Mr. Wm. Duff, grazier. At 12.30 p.m. the Committee continued their journey to Moree, *via* Keramingly (or Little Bumble), at which point there is a Government tank, and the travelling stock route is rejoined, arriving at Big Bumble (13 miles), at 2.30 p.m.; the Government tank, Tycannah (21 miles), at 4.15 p.m.; and Moree (33 miles), at 6.15 p.m.

At 10 a.m. on Friday, 24 November, the Committee continued their inquiry at the Court-house, Moree, and the following witnesses were examined:—Mr. J. Cornell, builder, and Mayor of Moree; Mr. W. H. O'M. Wood, district surveyor; Mr. J. T. Crane, stock and station agent, council clerk, and acting secretary to the Stock Board; Mr. C. O'Hara, contractor; Mr. A. B. Lomax, grazier; Mr. J. Jurd, selector; Alderman S. L. Cohen, land agent; and Mr. H. Joseph, manager of brewery, and secretary to the Railway League. The Committee adjourned at 5 p.m. On Saturday, 25th November, at 10 a.m., the inquiry was resumed, the following witnesses giving evidence:—Mr. R. F. Chambers, Crown Lands Agent; Mr. T. F. Moore, grazier; Mr. A. M'Intosh, storekeeper; Mr. J. Munro, post and telegraph master; Mr. F. W. Kirkby, storekeeper; and Mr. C. B. Keene, manager of Gurley Station. Mr. W. H. O'M. Wood was re-examined, and at 12:45 p.m. the examination of witnesses at Moree was concluded. During the afternoon an inspection was made of the sites proposed for the railway station at Moree, and of the crossing of the river for any extension of the railway northerly.

On Sunday, 26 November, the Committee remained in Moree.

At 10:15 a.m. on Monday, 27 November, the Committee, with the exception of Messrs. Ewing and Dawson, left Moree for Millie, *via* Big Bumble and Keramingly, arriving at 4 p.m.; and on the following day at 8 a.m. they left Millie in buggies for Wee Waa, *via* Jew's Lagoon (10 miles) and Boolcarrol (20 miles), reaching the northern bank of the Namoi (32 miles) at about 1 p.m. The Committee crossed the river by Mr. Brennan's small suspension bridge, and after inspecting what is locally considered a good site for a railway bridge, proceeded to Wee Waa (about 2 miles), where they arrived at 2 p.m. At Wee Waa they were joined by Messrs. Ewing and Dawson, who for the purpose of examining the country had, from Moree, taken a more westerly course *via* Mungyer, and crossed the Namoi at the bridge 3 miles west of Wee Waa.

At 4:30 p.m. the Committee met at the court-house, and examined Mr. L. Brennan, selector; Mr. J. A. St. Clair, selector; Mr. A. C. Fenwick, selector; and Mr. J. Maiden, drover; adjourning at 7 p.m.

At 8:30 a.m. on Wednesday, 29th November, the inquiry was resumed in the Wee Waa Court-house, and after taking further evidence from Mr. J. Maiden, the following witnesses were examined:—Mr. W. Mackenzie, drover; Mr. P. Rafferty, sheep buyer; Mr. J. Gray, contractor and selector; Mr. P. J. Ryan, drover; Mr. R. B. Mills, manager of Nowley Station; Mr. S. Dempsey, selector; Mr. S. Powell, selector; Mr. A. Copleson, storekeeper; Mr. W. Bennett, selector; Mr. A. L. Harding, selector; Mr. W. T. Mitchell, selector; Mr. A. Mackenzie, manager of Wee Waa Station; Mr. E. W. Jeffery, leaseholder; Mr. A. Hamilton, hotel proprietor; Mr. W. W. R. Holcomb, selector; Mr. C. Kelaher, selector; and Mr. J. W. Doherty, builder, and secretary of the Railway League. The examination concluded at 12:30 p.m.

At about 3 p.m. the Committee left Wee Waa for Narrabri, some members travelling on the south side of the river *via* Gurleigh Point and Narrabri West, and the others taking the north side *via* Gundamain and Ironbarks. Narrabri (24 miles from Wee Waa) was reached at 6:30 p.m. At 8:15 p.m. the Committee took the evidence of Mr. L. Malone, newspaper proprietor; Mr. E. H. Wall, grazier; and Mr. G. McFarlane, grazier; concluding the inquiry at 9:45 p.m.

On Thursday, 30 November, the Committee left Narrabri West by the 9:10 a.m. train, and reached Sydney at 11:5 p.m. the same day.

During the inquiry 17 witnesses were examined at Narrabri, 9 at Millie, 14 at Moree, and 21 at Wee Waa; a total of 61.

The area of country under consideration extends approximately from Inverell on the east to beyond Angledool on the west, and from the Namoi River on the south to the boundary of the colony on the north, together with the trade relations with such portions of Southern Queensland as may reasonably be expected to utilise the railway system of New South Wales.

The region lying east from the Nandewar Range—which range lies from about 15 to 20 miles west of the direct route—or further to the north, taking Warialda as a western limit, appears to be more intimately connected with the Inverell district, and the trend of traffic will be mostly towards the main northern line. The country
lying

lying between the Nandewar Range on the east, and extending west to beyond the Barwon River, is principally extensive open plains, interspersed with belts of timbers, consisting of belar, box, myall, and coolebah. The pasture consists of such herbage as is peculiar to the western portions of this colony, being blue-grass and coolah, intermixed with salt-bush and other salsolaceous herbage.

That portion of Queensland immediately to the north of the Macintyre, taking Kunopia as a centre; has been described by witnesses as poor country extending to within a short distance of the Queensland railway system, in which country, apparently, no great further development can be expected.

The evidence with regard to the inundations to which large portions of this country are periodically subject is very conflicting, but apparently the only portion seriously affected is an area of say 6 miles north from the Namoi, flooded by Namoi waters. Each of the smaller creeks—the Thalaba, Boggy, and Waterloo—floods, but not sufficiently to be a menace to settlement, or to be more than a very temporary inconvenience. From the Mehi on the south towards the Queensland border, embracing what is locally known as the “water-course” country, is an area in which inundations are apparently frequent, while a tract of country, lying between Thalaba Creek and the Namoi, passing south of Bulleroi and extending to within a few miles of Collarendabri, is apparently a fairly dry belt.

The main produce of the district is wool and fat stock. A little cultivation is carried on, and the gardens, where properly tended, appear fruitful, but beyond the pastoral industry and trade incidental thereto there is very little produce which is worth considering as being likely to furnish much traffic to the proposed railway.

The trend of traffic is to Narrabri West, the present terminus of the railway system. Some freight, principally adjacent to Walgett, finds its way down the Barwon to the Darling. The approach to Narrabri from Goondiwindi, Kunopia, and Mungindi, and that portion of Queensland lying immediately to the north of those places, is through Moree. South of Mungindi, embracing Angledool, and from that portion of Queensland lying north from Angledool, Mogil Mogil, and Collarendabri, down towards Walgett, the traffic finds its way to Narrabri by Wee Waa, Boolcarrol, and Millie; and it appears likely that much of it will continue so to do, for not only is the distance from Collarendabri to Moree almost equal to that from Collarendabri to Narrabri, but on the direct route to Moree a tract of country—low lying and subject to inundation, known locally as the “water-course” country—has to be partly traversed.

In the event of the railway system being extended to Inverell, and the navigation of the Barwon being improved, the trade area, of which Moree is the depôt, will be somewhat contracted, but will still remain sufficiently important to be entitled to the cheapest and most direct communication to market.

Although the industry of the district is almost wholly pastoral, still in a locality with good soil and a rainfall of over 20 inches it appears almost certain that with proper means of communication, and a likelihood of a reasonable return, large areas will be placed under cultivation.

The evidence with regard to timber is also very conflicting. A large forest of suitable timber exists to the south of the Namoi, and there is also a fair supply apparently at Terry-Hie-Hie; but we have no certain information that it is adjacent to the proposed line. In fact some witnesses are of opinion that no great supply of suitable timber can be obtained within 20 miles of the direct route.

It also appears doubtful whether the proposed small amount of ballast—3 inches—will be sufficient in a country which is partly subject to inundation, and the Committee would strongly urge that further departmental consideration be given to this question.

The main objection to the route submitted to the Committee is that it will fail to serve a great area of the country lying west from Millie and Narrabri. It is perfectly clear, as was testified to by many witnesses, that any trade south and west from Millie, such as traffic going through Bulleroi or Wee Waa, and probably also from Angledool, Mogil Mogil, and Collarendabri, will still make for Narrabri as being the most accessible railway station. A deviation *via* either Gurleigh Point or Wee Waa would be advantageous to a large area of country, and a very considerable population. The

The proximity of the Nandewar Range—which for the present at least lessens the area to be developed towards the east in some places to not more than 15 or 20 miles—would make it desirable, if possible, to thrust the line further to the west. But if the whole area under consideration is to be properly served it can only be done by two lines—a northern line following the route submitted to the Committee, and a western line following the driest belt of country, which is apparently south of Thalaba Creek, and eventually reaching Collarendabri. Any attempt to deviate from the direct route will entail a permanent disability on the northern trade without conferring a fully compensating advantage on the western trade.

In favour of a direct line we find:—

- (1.) That Moree is the depot for the great body of traffic lying east from that place towards Warialda, north to and beyond Goondiwindi, Kunopia, and Mungindi, and some distance also to the west of Moree—so great that it is entitled to the shortest and best way to market.
- (2.) That if railway communication be contemplated in order to develop the western country, it can quite as cheaply be performed by a direct line which would not entail extra carriage to the people of the Moree district.
- (3.) That it will be the cheapest line to construct.
- (4.) That in the construction of public works, if it is possible to retain an old centre of trade, without incurring serious loss or large expenditure to the country, it is well to do so rather than by establishing a new centre, inflicting needless injury on old trading interests, and uselessly expending the energy of the people in the creation of a new trading depôt.

It appears probable that the expenditure necessary for the construction of a pioneer line of railway need not greatly exceed in this country the amount required to construct a first-class road.

We are of opinion that in view of the importance of the western trade, it would be well if a full exploration and survey should be made of the country towards Collarendabri, apparently the best place to start a survey from being a point between Narrabri and Edgeroi, thus utilising the bridge which will be constructed over the Namoi on the direct route.

Sydney, 5 December, 1893.

J. GARRARD.

PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS.

MINUTES OF EVIDENCE.

RAILWAY FROM NARRABRI TO MOREE.

[TAKEN BEFORE THE SECTIONAL COMMITTEE.]

MONDAY, 20 NOVEMBER, 1893.

[The Sectional Committee met at the Court-house, Narrabri, at 2.15 p.m.]

Present:—

JACOB GARRARD, Esq. (CHAIRMAN).

The Hon. WILLIAM HENRY SUTTOR.

The Hon. JOHN DAVIES, C.M.G.

THOMAS THOMSON EWING, Esq.

WILLIAM McCOURT, Esq.

EDWARD WILLIAM O'SULLIVAN, Esq.

HENRY DAWSON, Esq.

The Sectional Committee proceeded to consider the proposed Railway from Narrabri to Moree.

Mr. George Samuel Evans Dale, solicitor, and Mayor of Narrabri, sworn, and examined:—

Mr. G. S. E.
Dale.

1. *Chairman.*] You are a member of the legal profession, practising in Narrabri? Yes.
2. And also Mayor of Narrabri? Yes.
3. How long have you resided in Narrabri? Thirteen years.
4. How long have you been connected with the Borough Council of Narrabri? I have been Mayor for six years.
5. How long has the town been incorporated? Ten years.
6. During the term of your residence, has the town increased very largely in size and importance? Considerably. It is at least three times as large as it was when I came here—that is not including Cooma subdivision, or Narrabri West, or Newtown.
7. Which do you call Newtown—Dangar Village? No; Newtown is the north-east part of the town.
8. You were here of course before the railway was extended to Narrabri West? Yes.
9. Did Narrabri West exist prior to the railway coming here? No.
10. It is because of the railway terminating at that point that Narrabri West has sprung into existence? Yes; also Cooma subdivision. Really in consequence of the railway we have Narrabri West, Cooma subdivision, and Dangar's Village. These places were not in existence when I came here. There were not more than three houses between here and the railway station when I came here.
11. Cooma subdivision is on the western bank of the Namoi—in other words, south-east of Narrabri West? Yes.
12. And Dangar Village is on what is called an island between the Namoi and Narrabri Creek? That is so.
13. Are you familiar with the various projects which have been propounded for connecting Moree or the northern portion of the Colony with the railway system? Yes.
14. As a resident of this district, and putting aside, if possible, for the moment, all considerations for the town of Narrabri, which of the lines depicted on yonder map do you think is the best one to adopt? I have not traversed much of the lines myself.
15. But you know the country generally? I do. I understand that the direct, or "red" line, is the better. I understand that it passes through better country, and that the facilities for getting ballast and such things are better. But that is only hearsay.
16. Which line do you think would serve the largest proportion of the population between Narrabri and Moree? I certainly think the "red" line would.
17. That line will leave the Millie people at some considerable distance? I understand that it will leave them at a distance of only 12 miles.
18. With regard to the proposal to bring the railway from Narrabri West and skirt the town of Narrabri, do you think that is about the best connection which could be made for Narrabri? I am quite sure it is.
19. You would not advocate that it should be brought more on a line with the road bridge into the centre of the town? No; I have no doubt that this is the best line.
20. Is it not a fact that surveyors have been in the district frequently looking for a crossing over the river? I do not know how it was that we did not find this crossing before. We passed the place day after day, but we never seemed to recognise its suitability as a crossing place until it was pointed out by Mr. Sams. Everybody was surprised that we had not found it out before, but I suppose it was not noticed because it was against our doors.
21. You think you are voicing the opinion of the majority of the people in stating that it is the best crossing? Yes. We used to think that Rocky Creek was the best place, but after seeing this place there is no question about its being the best, because the banks are so high and firm, and the crossing is so narrow, that the expense of building a bridge will be completely minimised.
22. What has been the growth of the population of the town since it was incorporated? The council clerk will supply that information. It has increased at the rate of three to one during the last thirteen years.
23. Do you know anything of the Wee Waa country? Yes.

- Mr. G. S. E. Dale.
20 Nov., 1893.
24. Do you not think that the Wee Waa people deserve to have a railway brought nearer their doors than the "red" line would go? Of course every man would like to have a railway against his own place.
25. I suppose you recognise that the "yellow" line in the direction of Gurleigh Point means leaving Narrabri out in the cold? As far as I am individually concerned I do not see that it makes much difference. If the railway is going to pass Narrabri it makes very little difference whether it passes the town one way or another. As a professional man I do not think it would affect me to the extent of one farthing which way it passes.
26. Do you think it will affect the town generally? I do not think it will.
27. *Mr. Davies.*] I gather from your evidence that it is a matter of very little concern to the town of Narrabri by which route the line leaves Narrabri West? A number of the townspeople do not think so, but my opinion is that if the train is going to pass the town it matters very little whether it passes through the town or passes a little way from the town. The passengers will not get out of the train to look at us for the mere sake of looking at us.
28. Do you think that the junction that is proposed would bring your trade nearer your town? I suppose that with certain traffic it would do so.
29. You know the crossing which is indicated on the plan? Yes.
30. You are of opinion that it is the best possible crossing, and the most inexpensive? There is no doubt that it is.
31. But as far as the town is concerned you think it makes very little difference to the town by what route the line goes? I do.
32. Whether it goes more to the west or follows the "red" line is a matter of little concern to the town? That is my opinion, but it is not the opinion of a great many people.
33. You hold a representative position, and you speak I suppose, to a large extent, for the ratepayers? I have not consulted the ratepayers—I am merely giving my own opinion.
34. You can hardly separate yourself from your official position of Mayor of the town? Exactly; but I have not consulted the ratepayers.
35. Do you think you are expressing the opinion of half of the ratepayers? I would not say that, as I have not consulted them.
36. I presume you entirely favour the extension of the railway to Moree? I think the Moree people are entitled to a railway.
37. But on public grounds? I think it should be extended.
38. You are aware of the cheap character of the proposed line? Yes.
39. That it is to cost very little more than an ordinary macadamised road? Yes.
40. And that it is the first line of this character which has been proposed in the Colony? Yes. I advocate the construction of the "red" line, because I believe that route is the more direct and the cheaper, and will be of more benefit to the country generally.
41. *Mr. O'Sullivan.*] Narrabri may be regarded as a progressive town? Considerably so.
42. What is its population? Within the borough proper we have about 2,200 souls.
43. There is every indication of progress in the number of the population and the value of the rates? Last year alone the electoral roll was increased by 300 names. About thirty new buildings are waiting to be rated, and others are going up all round. The town is very progressive.
44. How do you stand in regard to your overdraft? I think it is the most solvent borough in the Colony. We owe nothing, except £3,000 for the Town Hall, and I think we have a very considerable asset in that building.
45. It is likely to pay for itself? I think so. Considering that the black soil has involved a large expenditure in making the streets, and that every man has a good road to his house; considering that the borough has been in existence only ten years, and that we do not owe anything, except £3,000 for the Town Hall, I think we can look upon ourselves as being fairly solvent.
46. Have you gas-works or water-works? Not yet. I have been agitating for some time—I think with every reason of success—and expect we shall light the town very shortly.
47. What rate do you pay here? Only the shilling rate.
48. What did the Town Hall cost? £3,000. The site was a grant.
49. If the railway were taken *via* Wee Waa would it detrimentally affect the town of Narrabri? I dare say it would.
50. Would it benefit the town of Wee Waa if it were taken up to the point where it turns round? I suppose it would to some extent.
51. Would it be likely to establish a rival town at that point to the detriment of Wee Waa? Oh, certainly.
52. If it went to Wee Waa it would benefit that town, but if it went within a certain distance of that town it would not, and another town would rise up? Yes.
53. Do you know anything of the country between here and Moree? Yes.
54. Do you know if there is much Crown land between the two points? I could not say.
55. Do the Wee Waa people agitate to have the railway taken to Wee Waa? I believe there is some agitation to have the line taken to that town.
56. Are they agitating to take the line into the town, or are they content to have it taken *via* Gurleigh Point? I understand that they want it to be taken into the town of Wee Waa. There was a considerable agitation all over the district. Some people wanted the line to go *via* Gurleigh Point, and others *via* Wee Waa; in fact every man wanted the line against his own door.
57. Are there many people in Narrabri who are opposed to this railway? Not to the railway itself. I think we fairly recognise that the Moree people are entitled to a railway. Any man who has travelled on this line would not be honest if he did not make that admission.
58. Are there many people who prefer to see the terminus remain where it is for many years? I do not think so.
59. They are patriotic enough to allow the line to go on to Moree? I think so, as far as I understand the feeling of the people.
60. If it were a purely local line between Moree and Narrabri, would you recommend the Gurleigh Point route in preference to the direct route? I do not see what is to be gained by going to Gurleigh Point at all.

61. Is there not a much larger population along that route than along the direct route? I do not think so. That country is so low. Mr. G. S. E.
Dale.
62. Are there not more selectors along that route than along the "red" route? I do not think there are, but I am not prepared to say so positively. 20 Nov., 1893.
63. According to the map on the wall there are far more selectors and conditional lessees along the Gurleigh Point route than along the direct route? I do not think it is so. Further to the west there seem to be a good many conditional purchasers and conditional lessees.
64. Would not the Gurleigh Point route serve more conditional purchasers and conditional lessees than the direct route? I should not say so.
65. On the map the freehold land is tinted red, conditional purchases and conditional leases are tinted blue; the reserves are tinted green, and all the other Crown land is uncoloured. Judging by that map it must be evident that the Gurleigh Point route would serve a larger number of conditional purchasers and conditional lessees than the direct route, as it would be nearer to them on the west? It would seem to serve a number just there. I do not know that it would serve a greater number.
66. Against that fact I want you to put this fact:—that in order to serve these conditional purchasers and conditional lessees on the west you would have to go by way of Gurleigh Point, and therefore you would have to avoid the town of Narrabri and also lengthen for all time the journey to be travelled by persons coming from Moree and beyond that town;—in the national interest which line do you think would be the better one to adopt—the Gurleigh Point route, in order to serve the selectors, or the direct route, which may go to the Queensland border hereafter, and shorten the distance to be travelled for all time? Of course the direct line will most undoubtedly be the best, because it will tap the Queensland traffic more quickly.
67. The direct line goes through a good deal of Crown land;—do you think that when the pastoral leases expire in the course of two or three years, those lands will be selected, and that a considerable population will spring up along the direct route? I am quite sure of that. I have a number of clients who are waiting to get country.
68. You have fairly good evidence to the effect that when the leases are thrown open they will be selected? I am quite sure they will.
69. *Mr. McCourt.*] Have the people of Narrabri, by petition or public meeting, asked for the extension of the railway system to Moree? I do not think we have had any meetings either for or against this proposal.
70. The people of Narrabri have never asked for this extension? We have neither asked for the extension nor opposed it.
71. There have been no meetings held to favour the construction of this line? No; a number of people take the view that we do not want the extension, but at the same time the general opinion is that it is not fair to oppose the proposal.
72. There have been no meetings held on the subject? No.
73. The principal agitation for the line has come from Moree? Yes; as far as I am aware.
74. Supposing that the betterment principle were applied to the construction of this line, the people of the town would be called upon to contribute towards its construction;—do you think that they would be in favour of contributing, say, half the cost? I do not suppose they would. Speaking of them as a bulk, they do not want the line at all, but, as a matter of justice to Moree, they say they cannot honestly oppose the proposal.
75. It was in the past they had that opinion? I believe it is their opinion in the present. I do not say that the people of Narrabri are sufficiently patriotic to say, "We are prepared to pay a tax to benefit Moree."
76. Are you aware that this line is to be built subject to the application of the betterment principle? Exactly.
77. If that principle is to be applied, do you think the people of Narrabri will favour the construction of the line? I do not think they are anxious to have a line to Moree for the sake of paying a tax.
78. I desire to have a direct answer to my question? No; not with the knowledge that if the line goes to Moree they will have to contribute to a betterment fund.
79. They are not in favour of the line being constructed on that condition? I should not think so. Mind, we have not had any public meetings, and I am only guided by the conversations we have had in the town.
80. *Mr. Ewing.*] You know the traffic which comes into Narrabri? Yes.
81. Does more traffic come in from Moree than from Walgett? My opinion is that more traffic comes from Walgett way.
82. What do you expect this railway to carry principally—the produce of the country? Yes; wool, principally, and stock. I suppose it would carry fat stock.
83. Sheepskins, and things of that sort? Yes; everything incidental to the pastoral industry.
84. You think that more of that will come from Walgett than from Moree? I think so. I am not a forwarding agent, and I speak only from my personal experience.
85. It all goes to the Sydney market? Yes; but a good number of sheep go to Aberdeen.
86. Is the river navigable to Walgett? It never has been since I have been here.
87. Is it your opinion that if a railway were built from Narrabri to Walgett the people from that part of the Barwon would always come through this way to Sydney? I do not think they would.
88. Is the river navigable to Walgett? Very frequently, I believe; and when it is, a lot of their loading goes down by steamer.
89. If a railway were built to Walgett and the river happened to be navigable that year, would the wool go by the railway through Narrabri, or would it go down the Darling? That I am not prepared to say; it just depends upon the railway freights.
90. You do not know those freights? No.
91. How far is it from here to Walgett? About 130 miles.
92. Supposing the means of getting down the Darling when the river was up were as good as the means of going through Narrabri by train; the traffic would cease to go by Narrabri and would go down the Darling River? I think a good deal would go down the Darling.
93. If the whole of the stuff from Walgett were to come through Narrabri more would come to Narrabri from Walgett than would come from Moree? I think so. 94.

- Mr. G. S. E Dale
20 Nov., 1893.
94. I want to find out, with absolute certainty, whether, in your opinion, we could depend on getting that trade? I do not think so.
95. From here to Wee Waa—how far is it? Twenty-three miles.
96. From Wee Waa to Moree, how far? I could not say; that is across country.
97. Do you think it is 70 miles? I should think it is less.
98. Do you think that from Narrabri to Moree *via* Wee Waa would be 100 miles? I really do not know.
99. Do you know anything about the traffic:—do you know what portion of the country Moree is properly the business centre of—as far as Warialda? I do not know.
100. Therefore, although you believe that more stuff does come from the west than from the other direction, you do not know why you believe that? Yes, I do; because I know that a lot comes round by Inverell and Bingera.
101. It might come to Narrabri if the railway went to Moree? That I do not know.
102. The point is, whether it is worth while to bring a lot of stuff 20 miles further in order to catch the western traffic or not? I do not think you would get another ton by taking it that distance.
103. You know nothing about the circumstances of Moree? No.
104. Mr. Dawson.] How do you understand the betterment principle to apply to the construction of this line? I understand that every man through whose land it will go will have to contribute a certain rate for a certain number of years.
105. That is, supposing a man's land is improved in value, he has to pay a certain amount every year? I take it to mean that every man through whose land it went would have to contribute something. I am not versed in the matter.
106. Whether it benefited him or not? That was my opinion when I answered the question of Mr. McCourt.
107. Do you think that if a man's land were increased in value by the railway from £10 to £15 per acre, he would not object to contribute to the betterment fund? Not if his land benefited. My answer was that a man would not like to pay a tax for the sake of benefiting Moree. We are not sufficiently patriotic to pay money to benefit other people, but if you can show us that it would benefit us we should have no hesitation in paying the tax.
108. Have you been over either of the proposed routes? Some portions of them.
109. Do you think the Crown lands along the "red" route will be taken up by settlers? I believe that these lands will be taken up as soon as they are available. I have people now waiting to take up land.
110. Do you know that of your own knowledge? Yes.
111. Where will they get timber about here? The Government have been sending up here for sleepers for the rest of the Colony. The Sleeper Cutters' Union was stationed here.
112. Those sleepers were required for certain portions of the railway system; you did not send sleepers to Hay or Jerilderie? I do not know personally, but I believe they are required all over the Colony. A large union has been stationed here cutting sleepers for the Commissioners.
113. Would it be cheaper to get the timber on the "red" route than on the other route? That I could not say, but I should think it would be cheaper on the "red" route, because there is some timbered country along there. The further you go west you get into plain country. In the west you may travel 20 miles and hardly see a tree.
114. Chairman.] Is there any further information which you desire to give? No; except some statistics with regard to the borough. The estimated population of the borough is 2,306; the total value of improved property is £109,418; the total value of unimproved property £16,781; and the annual value of improved property £14,362.
115. Mr. Davies.] The annual income and the annual expenditure? I will furnish that information to the Committee.

Mr. Charles Alexander Ress, contractor, and member of the Local Land Board, sworn, and examined:—

- Mr. C. A. Ross.
20 Nov., 1893.
116. Chairman.] You are a member of the Local Land Board? Yes.
117. You are also a contractor? Yes.
118. How long have you resided in Narrabri? Nine years.
119. Mr. Suttor.] Have you considered these lines at all? I have. I have resided in the district for thirty-three years.
120. Which do you think would be the best line to construct? The "red" line I consider would be the most direct and the cheapest.
121. Have you any objection to the other lines at all? I cannot say that I have any objection, but I consider that the "red" line would be the most beneficial one.
122. What do you think of the "blue" line, called the permanently-staked line? I do not quite know where that line would go.
123. It goes straight from Narrabri West? That would cross the island, which is liable to be flooded.
124. What about the other line which starts from Narrabri West and goes down through the stock route? The travelling stock route is not nearly as high a piece of country as the other.
125. Is it subject to floods? It is subject to floods; it is not naturally drained. After we have had some rain the water remains on the land for a long time compared to the land along the "red" route.
126. Taking everything into consideration, you are satisfied that the "red" line is the best? I think so.
127. Would the Gurleigh Point line get the Wee Waa trade at all? I should imagine it would. I fancy it would anticipate the traffic which now comes up to Narrabri West.
128. Is there much traffic coming from Wee Waa to that line? I cannot say; I do not know much about the traffic on the road.
129. It diverges very much from the straight line; it is some 20 odd miles distant? Yes. After crossing the Namoi it would get into very low and flooded country.
130. Mr. Davies.] As a contractor you know something of public works? A little.
131. Have you traversed the "red" line? I traversed that line in the first instance with Mr. Surveyor Paul. I may state that for eleven years I lived at the place where Woolabrar station is marked on the map. I managed that pastoral property for eleven years.
132. Is the road which is shown on the plan and meets the main road still in existence? I believe it is, but I think it has been somewhat interfered with by conditional purchases.

133. It joined the travelling stock route? Yes. There is a travelling stock route from Woolabrar to Millie.

134. From your general knowledge of the country you think that the "red" line is the best which can possibly be adopted? That is my opinion.

135. And the cheapest? Yes; by far the cheapest.

136. Are you aware of the estimated cost of construction? No.

137. The estimated cost is £153,000; and as a contractor and a practical man, I presume you think that that would be one of the cheapest lines which could possibly be constructed? It is the cheapest I ever heard of.

138. Do you think the extension of the railway system to Moree will open up much additional trade for the Department? I think so.

139. And that it will induce settlement? I think it will induce settlement largely.

140. What will the line be used for principally? Wool and stock, I should imagine.

141. Will any of the trade that now goes to Queensland come this way if our railway system is extended to Moree? Yes, and a good deal of the traffic which now travels by dray to Tamworth I fancy would be diverted to Moree.

142. Then the Railway Commissioners would get the additional haulage on that traffic? Yes.

143. The traffic from the Lower Macintyre, and that part of the country which now goes chiefly by way of Tamworth, would be diverted to Moree as being much closer to the railway system? Yes.

144. Is there much settlement along the proposed line? A great deal of land has been conditionally purchased. There is a good deal of land along the "red" line which is admirably suited for agricultural settlement, but it is rather heavily timbered. It has not been taken up yet, but no doubt with additional advantages it would be taken up.

145. Whose runs will the line pass through? Edgeroi belonging to the Namoi Pastoral Company, Dobikin belonging to Taylor Brothers, Gurley belonging to Mr. John Simpson of Melbourne, and Tycannah which used to belong to Mr. Pierce, but which was held in trust for a while, and then I think it touches Wee Bolla Bolla, belonging to Mr. Munro.

146. Are there any selections along the route of the "red" line? Yes; on each side.

147. To what extent on each side of the route would settlement be served? It would be served for a distance of from 15 to 20 miles on the eastern side, and from 30 to 40 miles on the western side.

148. Would the "red" line draw to Narrabri any of the trade which now goes to Inverell? I do not know what traffic goes to Inverell. You are thinking of the Upper Macintyre trade. I think most of that trade goes through Warialda and Inverell to Tamworth.

149. You stated that the "red" line would serve a population on either side to the extent of 30 or 40 miles—that would draw additional traffic to this line, and would be the means of inducing additional settlement to take place? Yes.

150. The land you say is all suitable and fit for agricultural settlement? Yes; especially to the east, where there is a lot of good agricultural land.

151. You are strongly of opinion that the "red" line should be constructed, as it will serve the people better than any of the other routes? Yes.

152. *Mr. O'Sullivan.* Where will you get your passenger traffic between Moree and Narrabri, if the railway is taken by the direct route? The people would have to go to the station of course.

153. Do you think that people, having once got into their buggies, would drive 12 or 15 miles from Millie and other places to the west to the train? I should imagine they would take the shortest route to the nearest station.

154. Would there not be a much larger passenger traffic if the line went by Gurleigh Point? Possibly there would be a larger passenger traffic, and they would pick up passengers coming by the river.

155. Should we be justified in recommending the construction of a line, which would cost nearly £100,000 more by the Gurleigh Point route, in preference to the "red" route? I should not think so.

156. Do you consider that the people who will be within 12 or 15 miles of the "red" route will be fairly served by a railway in that direction? I think so.

157. During your residence of thirty-three years in the district you have seen a considerable rush of settlement take place? I have indeed.

158. Of what character was it? Nearly all pastoral settlement—selectors taking up large areas for the sake of sheep-farming.

159. What is the average size of a selection up here? 2,560 acres when that area is available.

160. Wherever they can get a full area they take it up? Yes.

161. Is there room for many of these selections on the leasehold areas, which will be thrown open in the course of two years? There will be a good many when the leases are thrown open.

162. You think they will be rapidly availed of? Yes; every acre will be taken up.

163. That will provide a population along the direct route for the railway to serve? Yes.

164. Bearing in mind that this line will some day tap the Queensland border, should that fact weigh against the possibility that a better local line would be by way of Gurleigh Point for two or three years to come? I should think it advisable to tap the Queensland trade as early as possible.

165. You recommend that that should be done as directly as possible? Yes.

166. In order to save the extra trackage which would have to be paid if it went by the "boomerang" route? Yes.

167. Do you think that if the line went by Gurleigh Point it would materially affect the town of Narrabri? I should think it would affect the town, but I do not know whether it would be materially affected.

168. Would it benefit the town of Wee Waa? I do not think it would.

169. Is it likely to cause the establishment of a rival town at the point where it turns to go north? I think it would be certain to do that.

170. On the whole, you think the advantages are in favour of the direct route? I think so.

171. *Mr. Ewing.* What is the rainfall here? The rainfall in the Narrabri district is from 25 to 26 inches.

172. Is the soil good enough to grow wheat? Yes.

173. Is a rainfall of 25 inches enough? Yes.

174. Is there any wheat grown here? Wheat has been grown here. I have had some little experience myself. The average yield for some years was 20 bushels to the acre.

Mr.
C. A. Boss.
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Mr.
C. A. Ross.
20 Nov., 1893.

175. Is there much wheat grown here now? No.
176. Why not? I can hardly explain, except perhaps that they find that other crops pay them better.
177. Wool is easier to produce, I suppose? The tendency here is all for sheep.
178. There is no reason why wheat should not be produced? No. There is very good wheat-growing land in the district.
179. And between here and Moree? Yes.
180. Do you know anything of the traffic going into Narrabri? No.
181. Is the Barwon navigable to Walgett frequently? It has been navigable frequently of late years, but at long intervals. It is not navigable beyond Brewarrina.
182. How far is it from Walgett to Brewarrina? 100 miles.
183. You cannot depend on the river being navigable to Walgett? No.
184. If the river were open to Walgett, would the traffic go by that way or through Narrabri? The traffic is mostly by the river, I fancy, when it is open.
185. In your opinion, I gather that Walgett is already provided for by the river? It is only partly provided for.
186. For many seasons the river is not navigable at all? For two or three years I have known no steamers to come from Brewarrina.
187. There is no certainty that if the railway did go to Walgett the traffic would always come this way? No.
188. The traffic would come this way when the river would not allow it to go the other way? Yes.
189. It follows, therefore, that the freight from Walgett, *via* the river to Sydney, would be cheaper than by a railway, *via* Narrabri, to Sydney? Yes.
190. For 50 miles from Walgett towards Narrabri the traffic would stick to the river? I should say about 30 miles.
191. Therefore the railway at all times can only control the traffic 50 miles west of Narrabri, supposing your river to be open for about 80 miles—that, you believe, is the real state of the case? Yes.
192. Taking Moree, would the Warialda wool come this way? I think so.
193. Taking that stretch of country of which Warialda is the centre, supposing that a railway were built from Narrabri to Moree would the wool from that country travel through Warialda to Moree? Yes.
194. From the north to the Queensland border, do you think that the whole of the produce of that country would come down to Moree? Yes.
195. From Mungundi? Yes.
196. From Goondiwindi right round to Mungundi? Yes.
197. Is that a larger stretch of country than the country between here and 80 miles towards Walgett? Yes.
198. Is it a very much larger stretch of country? It is considerably larger, and it is far more populated.
199. Would there be more produce from that country? Certainly. The country between here and Walgett on one side is very sparsely populated indeed.
200. On which side? On the south of the Nannoi.
201. Is that *via* Wee Waa? Yes. On the south the country is very sparsely populated indeed. A great deal of it is abandoned.
202. If the great body of the traffic is coming down through Moree to Sydney, *via* Narrabri, ought it to come by the most direct route? I think so.
203. Why do you think that the direct route is the best route? I think a line could be constructed at a cheaper cost by that route, and the traffic coming by that route would be so large that it would be hardly fair to ask people to pay the extra haulage which the adoption of any other route would entail.
204. If the railway is taken *via* Wee Waa a man from the north would have to pay 20 miles extra haulage, but you have another section of country to the west towards Walgett, and the people in that country would be benefited by getting the railway brought 20 miles nearer to them? Certainly they would.
205. Therefore we have to consider which is the bigger area of country? The area to the north of Moree is far before and far larger than any area which could be served beyond Wee Waa.
206. That would be the main body of the traffic? Yes.
207. You have stated that if the river is open frequently to Walgett it will disturb the certainty of the traffic coming this way? It commands a great deal of the traffic when it is navigable.
208. *Chairman.*] What is the character of the land between the "red" line and the mountains? It is rolling downs of black volcanic soil, and along the foot of the mountains there is a fringe of rich chocolate soil, heavily timbered, very good land for wheat cultivation.
209. If they have good land right against their door 20 or 40 miles from Narrabri, how is it that it has not been brought into cultivation? It is too heavily timbered, and people have been able to get land without timber which requires no outlay in the first instance, and have been able to go into sheep farming which, up to the present, has been the more profitable industry, as it requires less labour and less oversight.
210. This line, if constructed, would be very likely to develop an agricultural industry on the eastern side? I think it would. I think before long that the whole of that country will be taken up. I may say that the Land Board are endeavouring to deal with land which is very heavily timbered, with the view of allowing people to occupy land on more favourable terms. There is a great deal of land which can be fairly classed as good land, but still it is so heavily timbered that people cannot afford to take it up.
211. It is a fact that there is a very large cattle traffic from Walgett towards Millie, and thence by the travelling stock route to Narrabri? I cannot say.
212. I think you expressed the opinion that the travelling stock route would be a more difficult route for a railway than the "red" route? It would be wetter, and more liable to flood.
213. *Mr. O'Sullivan.*] Why would a line by Gurleigh Point route or the travelling stock route be more subject to flood than the direct route? The direct route is almost at the head of the various creeks. Where the line crosses these creeks there is a fall of 20 feet to the mile. The country is of an undulating character, and is rapidly drained after a heavy rain. To the west you gradually get on to flat country. The creeks have very little fall. The watercourses get big and spread out into swamps.
214. That country is the bottom of a basin in which the water lies for a considerable time? Yes.
215. *Chairman.*] Have you any personal interest in the line or any property along the route? Not a morsel.

Mr.

Mr. Walter Gould, railway station-master, Narrabri West, sworn, and examined:—

Mr.
W. Gould.
20 Nov., 1893.

216. *Chairman.*] You are the railway station-master at Narrabri West? Yes.
217. How long have you held that position? I have been stationed at Narrabri for three years.
218. *Mr. Davies.*] What is the nature of the goods traffic to your station? Inwards it is general goods, and outwards wool and stock are the heaviest items.
219. What is the total value of the freight received from stock and other sources? The total freight we collected was from £15,000 to £50,000 a year.
220. That is to say, the revenue which has passed through your office? Yes; the major portion of the freight was paid at the other end of the line.
221. Where does the major portion of your trade come from? I think the major portion of the wool comes from the north.
222. What part of the north? Right into Queensland.
223. By what route does it come? Some by the Moree route, and some by the Collarendabri route.
224. Where does that come in? From Millie.
225. A large proportion of the trade comes to your station from Millie? A good deal of it does.
226. What proportion do you think comes from Millie—a third or a half? Perhaps 20 per cent.
227. That 20 per cent. is collected principally at Millie? No; it comes in from Queensland.
228. It comes from Queensland and beyond Moree by way of Millie to Narrabri? Yes.
229. Where do you get the balance of your trade from;—do you get any from Wee Waa? That traffic is very light.
230. What percentage of your trade comes from Wee Waa? I do not believe that it is more than 10 per cent.
231. Within what radius does that 10 per cent. of your traffic come from? Within the boundaries of the district of Wee Waa.
232. Where does the other proportion of your traffic come from? I think, including the Collarendabri traffic, it would be about 20 per cent. That would be the Millie traffic you spoke of.
233. Do you know the country which is traversed by the "red" line? No.
234. You could not express an opinion as to whether it would serve these different points from which your trade comes? I should imagine it would from the fact that it comes closer to the centres of population.
235. What distance would the people from the Queensland border have to traverse with their wool and stock to reach Narrabri by way of Millie now? If it is near the border, I think it would be about 150 or 160 miles.
236. Do you get wool from beyond the border? Yes.
237. Much? Yes; a good deal comes from there.
238. Is that trade increasing? It is not. It would have increased considerably, only for circumstances.
239. Would the value of that trade be increased very largely by the construction of this line to Moree? I think so.
240. You think it would be likely to develop a much larger trade in wool and stock from the Queensland border? I do not think there is any doubt about that.
241. Consequently it would increase the traffic on the line from Narrabri? I think so.
242. What passenger traffic do you get annually from outside and beyond Narrabri? That is hard to estimate.
243. Can you give a rough estimate? About 50 per cent. from outside the town itself.
244. Do they come from any great distance? They come right away from Mungundi and Moree.
245. Is it likely that there will be a large increase in the passenger traffic, as well as the goods traffic, if the line is extended? I have no doubt that there will be an increase if the population are served.
246. You see the proposed stations on the line depicted on the map;—do you know the localities at all? No.
247. *Mr. Ewing.*] If the distance from Millie to Woolabrar is 12 miles, and the distance from Millie to Narrabri West is 35 miles, would the wool coming from Collarendabri, when it got to Millie, draw up to Woolabrar station;—it would make to the railway at the nearest point? Undoubtedly.
248. *Chairman.*] Are you quite sure that the wool from Collarendabri comes through Millie? The traffic comes *via* Millie or *via* Wee Waa as the watercourse permits—mostly *via* Millie.
249. Is there not a road from Narrabri West to Collarendabri, *via* Wee Waa? I do not think the wool comes in by that road.
250. How did you gain your information as to the road by which this traffic came in? From the agents.
251. Excepting that you had some conversation with the agents, you only know from the marks on the bales the direction from which the wool came? I could tell the station from which it came, but not the route by which it came.
252. What proportion does the wool received in Wee Waa bear to the wool received *via* Moree? It would be impossible for me to say at the present moment.
253. Could you not tell by your books? I could not tell the route by which it came.
254. You would know whether the stations were to the north or west? The proportion is very small from down the river.
255. From Wee Waa or Pilliga? Yes.
256. Is there much stuff coming from Pilliga? Very little.
257. Not much from Wee Waa? No.
258. Any cattle from there? No; from Queensland.
259. They would come down the travelling stock route, through either Millie or Moree;—is there much wool coming from Warialda to your station? No; I have seen very little.
260. Is it increasing? I do not think so.
261. Does much come from Bingera? No; only very small consignments, and that only occasionally.
262. There is no perceptible growth in the volume of trade from those directions? Not at present.
263. Knowing the general position of Warialda and Bingera, do you think that this "red" line would have any influence in increasing the volume of trade? I do not know the distance.
264. Is there anything else you would like to state to the Committee? No.
265. It has been stated in evidence that if the proposed line is constructed it is proposed to keep the goods station at Narrabri West, and the passenger station at Narrabri;—would not that mean two staffs? Yes. If passengers only are taken at Narrabri the staff would be very small.

- Mr. W. Gould.
20 Nov., 1893.
266. I suppose it is very much more economical to have one staff if possible than two staffs, however small they may be? Undoubtedly.
267. Have you every facility at Narrabri West to deal with the goods traffic? Yes, generally speaking.
268. Do you think there will be much objection on the part of this volume of trade which comes from the north to unloading at Narrabri West? I think they would want to unload at Narrabri.
269. Because they had to go 2 or 3 miles further? It is only natural.
270. It is a good road? Yes.
271. You do not think there would be much in their objection? I do not think so.
272. Is not the last 2 or 3 miles of the journey generally considered the worst? I think so.

Mr. George Gregory, senior, farmer, Deep Creek, sworn, and examined:—

- Mr. G. Gregory.
20 Nov., 1893.
273. *Chairman.*] What is your occupation? I am a farmer at Deep Creek and Bullawa Creek, 6 miles east of Narrabri, under the foot of the Nandewar range.
274. How long have you resided there? I have resided there twenty-three years, and I have been in the Narrabri district thirty-four years.
275. *Mr. O'Sullivan.*] You know the district thoroughly? I believe I do.
276. What is the character of the country between Narrabri and Moree, to the east of the "red" line? I have travelled that country on several occasions, and I have found that it is good agricultural land, fit for growing any crop.
277. What coloured soil is it? The greater part of it is chocolate soil. There are patches of black soil, very strong and heavy.
278. Is it heavily timbered? A great deal of it is, but we find that that is first-class land.
279. Are the Crown lands heavily timbered there? Yes.
280. What would it cost per acre to clear those lands? I could not say. The Government reckon that they would allow me £10 an acre for what I have cleared and ploughed and cropped.
281. That must have been allowed by some person who had a knowledge of the matter? Yes.
282. From that fact we may assume that it will cost £10 an acre to clear this heavily-timbered Crown land? On an average it might be £5. Some land is improved, some has no timber, and some is very heavily timbered. As a general rule we take the most heavily timbered land, on account of its being the strongest land.
283. For agricultural purposes you prefer the most heavily timbered land? Yes; because it is the best growing land.
284. In the event of the leaseholds being thrown open within the next two or three years, will that heavily timbered land be selected? I think so. I think that if the leases were thrown open now it would all be selected. Everyone is crying out for land and no one can get any.
285. From your knowledge of the district and your experience as a settler you have no doubt that there will be a rush for settlement when the leases are thrown open? No; I have reared a family of ten by agriculture in the district, and I know pretty well what it is.
286. There is a road leading from Narrabri to Moree, on the east of the "red" line? Yes.
287. There is also a road leading from Narrabri to Moree, on the west of the "red" line? Yes.
288. Have you not local names for these roads; have you not a road for dry weather and a road for wet weather? Yes.
289. Which is the wet weather road? The one running under the mountains, on the east of the "red" line.
290. And the road running on the west side of the "red" line is the dry weather road? Yes.
291. Why is it called the wet weather road? Simply because we can keep out of reach of the water when the river is over its banks.
292. In dry weather you take the lower road, and in wet weather you take the higher road? In wet weather we take the higher road, because the lower road is all under water.
293. That points to the fact that the best thing is to keep as near to the foot of mountains as possible? Yes.
294. Is that one reason why you prefer this direct route to Moree? No. My simple reason is that there is agricultural land along that route. A great deal of settlement will take place if the railway is taken through agricultural land; but if it is taken by Gurleigh Point that land will lie vacant for years and years.
295. That is a very good reason;—have you any other reason in the fact that the country through which the dry weather road passes would be the wettest country for the railway to go through? The country which could be travelled by the direct line could be kept in repair for a great deal less, it would be out of flood reach.
296. Do you know many of the selectors in the district? A great many.
297. Are they fairly prosperous? I believe they are.
298. What sized holdings have they? From 40 acres up to 2,560 acres.
299. Are there many men holding the maximum area? I find that the small holdings are the most prosperous.
300. Are there many men holding 2,560 acres in the district? Yes; mostly on the western side of the line. On the eastern side under the foot of the mountains the holdings are mostly small agricultural ones.
301. Do you think there will be a rush for settlement when the leases are thrown open? Yes.
302. There are not very many inhabitants to the east of the "red" line at present? I do not know. Narrabri post-office pays a mail to run 16 miles up Deep Creek and Bullawa Creek twice a week. It crosses Bullawa Creek and runs up Eulah Creek.
303. There is sufficient population to maintain a bi-weekly service? Yes. There are some thousands of acres under cultivation.
304. What do they cultivate? Wheat, oats, corn, potatoes, beans, peas, cabbage, turnips, and fruits of all descriptions. I believe we can get fruit here two months before it can be got in Sydney.
305. Where do you sell your produce? At Narrabri generally.
306. You have a local market for nearly the whole of your produce? No; for the greater part of it we have. What we send away mostly goes to the Moree and Collarendabri districts.

Mr.
G. Gregory.
20 Nov., 1892.

307. I suppose you command a fair price out to the north and west for your surplus? A very good price.
308. Do you take it out yourself? No; it is generally sent out by the carriers, and the squatters often send in and purchase what they want.
309. Which route do the carriers take to go to Collarendabri? Generally by Millie.
310. Why do they go by Millie when there is another route from Narrabri West by Wee Waa? I believe they are frightened of the river. I have been down with teams, and I have been caught, and I did not like it.
311. They take the road *via* Millie, because it is the safer one? If a thunderstorm comes up one of those creeks you are jammed, perhaps, for a fortnight. You have to keep out back.
312. That accounts for bringing all the wool and stock from Collarendabri by way of Millie, although the road is longer? Yes.
313. If the line were constructed, all that traffic would strike the railway at a point somewhere near Millie? I think Millie would be about the central point from what I know of the country.
314. *Mr. Dawson.*] How many acres have you got? Four hundred and sixty-four acres.
315. For how many acres were you allowed £10 per acre for clearing? The Government, according to their reckoning, when I first settled on the land, allowed me £10 an acre for clearing about 25 or 30 acres.
316. Was it fenced in and grubbed? It was cleared and ploughed, and I had a house and some buildings. I believe I have over £1,000 worth of improvements on the same land.
317. You would not have benefited personally, if they had allowed you £50 an acre for clearing the land? It did not matter, as long as we had sufficient improvements on the land to comply with the Act.
318. Had you not enough improvements without the £10 an acre? I had. I simply asked the Government officer what did he allow, and he said for such improvements as that he allowed £10 an acre. I did not need it. It was very heavily timbered land, and after it was cleared it was worth that much.
319. Is it worth while to take up land and pay £10 an acre for clearing it, when you can get land for less? I do not know. The Government are putting £2 an acre reserve on the land at my place, which is not worth 25s.
320. Why is that? It is in small blocks. Not 10 acres in every 50 were any good.
321. Supposing your land was put up for sale at auction, would it bring £5 an acre? It would not bring more than about £5.
322. It is a dead loss to take up all this land and clear it? It is not a dead loss. If a man takes up sufficient to keep himself and family and makes a little extra he will do very well. There are some 30,000 or 40,000 acres out in my district which is well worth taking up, but it is all locked up.
323. If this railway is constructed will any of that land become any more valuable, or will it be taken up in greater quantity than now? Of course it will; because it will be considerably nearer the railway.
324. Along this "red" line which you favour there is a good deal of land which is valuable and fit for selection? A great deal. I believe that all the way between here and Moree there is a great quantity. As for wheat-growing, they say there have been two reapers and binders cutting there for the last five weeks. Up the creek they are cutting wheat every day. I believe they are cutting hundreds of acres of wheat and corn with the reapers and binders. I suppose we can grow as good wheat as any part of Australia. We proved that when the mill was going. It does not pay us to grow wheat in large quantities until the mill resumes operations.
325. Does not the fact that the mill is shut up prove that you did not grow wheat profitably? No. We are trying to get the mills started again. I grow 700 or 800 bushels a year to keep the thing going, and plenty did the same. Wheat can be grown here equal to any wheat grown in the country—30 or 40 bushels to the acre.
326. I suppose you grow oats equal to New Zealand oats too? Yes.
327. You have the same cold climate as New Zealand? I have grown oats in New Zealand as well as here.
328. *Mr. Davies.*] Are your sons selectors? Not now; but they have been.
329. You have grown almost all kinds of crops on your selection? Yes.
330. And you find a local market for almost all you could raise? Yes.
331. The surplus produce which you sent to Moree and Collarendabri was taken out by teams which had brought in wool from the stations? Yes.
332. Have the selectors in your district done fairly well? Yes; they all seem to be fairly well off.
333. How long have you held your selection? My present selection I have held twenty-two years.
334. And your original selection? I selected near Narrabri; but the land close to the town was of too tough a nature, and I got further away under the foot of the mountains.
335. You think a railway constructed by the "red" route would be the means of opening up a large portion of the country? It would induce great settlement.
336. And it would increase the trade and produce of the district? Yes.
337. You favour the "red" route? I do, because it would benefit the public, and would be beyond the reach of flood-water.
338. Have you any sheep? Seven hundred or 800.
339. I presume that wheat is not grown now because it pays better to grow wool? No; the mill ran for two or three years and then it fell through. It is being reconstructed, and as soon as it starts again there is no doubt that any quantity of wheat will be grown.
340. Will it give as good a result as sheep-farming? A little better—double.
341. It is very singular that they do not grow wheat;—have you no consumption, no outlet? Our only outlet was to send the wheat to Tamworth to be ground, but it would have cost at the very least from 1s. to 1s. 3d. a bushel to send the wheat to Tamworth and get the flour returned, and we could not afford to pay that price. If there was a mill on the spot we could afford to grow wheat and reap a benefit.
342. You sincerely believe that it would pay to grow wheat? Yes; the ground is adapted for wheat-growing in every sense of the word, as I have proved myself.
343. Did you grow wheat? I grew 30 or 40 acres at times.
344. What did it average? From 30 to 40 bushels an acre.
345. What price did you get? 3s. 6d. for the last lot I sold of about 600 bushels.
346. That would give you a very good return on your labour? Yes; but the mill closed, and then we had no alternative but to stop growing wheat.
347. You prefer the "red" route to any other route? Yes.

- Mr. G. Gregory.
20 Nov., 1893.
348. You would not advocate the construction of the line by the travelling stock route? Not by the lower route. I believe in keeping as near the mountain as possible, so as to keep clear of all water. That would be the least expensive line to maintain.
349. Would it not be less expensive to construct a line of 62 miles than to construct a line of 72 miles? Yes.
350. Would not the producers have to pay less freight on a line of 62 miles than on a line of 72 miles? Of course they would.
351. Those are good reasons why the railway should be taken by the shortest route? I believe in keeping as near the mountains as you can, for the sake of opening up the good land.
252. *Chairman.*] Is there any other information that you desire to give? No.

Mr. Theodore Morath, saw-mill proprietor, Narrabri, sworn, and examined:—

- Mr. T. Morath.
20 Nov., 1893.
353. *Chairman.*] What is your occupation? I have a saw-mill in Narrabri.
354. How long have you resided in Narrabri? Since 1865, with the exception of twelve months, when I took a trip Home.
355. *Mr. Dawson.*] Are you in favour of the construction of a railway to Moree? I do not care whether a railway is made or not.
356. On which side of the proposed line is your mill? It is about 200 or 300 yards from here, in the centre of the borough.
357. Why do you not care whether a railway is made or not? I should like the railway to be constructed as cheaply as possible, and in the best place.
358. Where is that place, in your opinion? By the "red" route.
359. Will that serve the greatest number of people? I believe it will, by a long way.
360. Were you here when Mr. Jones visited this district? I was.
361. Did he wait upon you? A gentleman who went up to Rocky Crossing four or five years ago did. Many gentleman have come up here. I had an interview with the Railway Commissioners when they returned from Walgett.
362. Where do you get your timber from? Both sides of the town.
363. Where is your trade? Mostly in the town. I send some out to Millie.
364. Will the construction of this railway benefit your business? It will not benefit me.
365. There is a mill half-way to Moree? Very likely they would send the timber to Moree on the line.
366. There is timber about 20 miles from here? Yes.
367. It would give a trade to the railway? Yes.
368. Do you know the country between here and Moree? In the 1864 flood I travelled by Wee Waa to Collarendabri. You could see what sort of a country it was then. I have not travelled across it since. It was terribly boggy in that year. The country between Wee Waa and Boolcarrol had been flooded all the way to a depth of from 3 feet to 1 foot. There were 10 miles of flooded country. The main water-course ran for 10 miles. The water travelled very slowly. We had to ride on horseback for miles through the water. I think that if you were to construct a line down there you might dam up a lot of water. It would not do the people much good to do that, and it would not be a good line to keep in repair. It would be a dangerous line to travel in flood-time.
369. You think it might bank up the water for miles? It would make a swamp of the country. If that country ever gets populated, it will be by having a canal made to Walgett to drain the country, and give them water carriage. A canal would be cheaper than a railway.
370. Do you know the country through which the "red" line goes? Yes.
371. What sort of country is it? It is good country.
372. Suitable for railway construction? Yes.
373. Is there any likelihood of settlement taking place along there? It is splendid growing country. There are very rich patches; some sandy country, but not much. Most of it is first-class country for settlement. I have grown wheat for hay.
374. *Mr. Ewing.*] What timber do you cut? Ironbark, apple-tree, pine, and sometimes box.
375. Only for local demands? Mostly. I do not send any to Moree.
376. You know a good deal about the timber in the district? I do.
377. Is there much red-gum here? We have red-gum, but it runs very veiny. It is not a profitable timber to cut.
378. Is it fit for railway sleepers? You can get some good sleepers, but I do not think it will ever pay anybody to cut them, unless the price is higher than it is. There is too much waste.
379. The red-gum here is too faulty? Yes. Along the lower line I do not think there is any timber fit for railway construction. On the upper line there is some ironbark.
380. How far down the Namoi have you to go for red-gum? There is red-gum all along the river. There is red-gum to Walgett.
381. But no good forest? There is no red-gum worth much. I am satisfied it will never be used until the ironbark is used up.
382. What is the apple-tree used for? For wheelwrighting, mostly.
383. Only for local demands? Yes.
384. And the pine? It is splendid splitting timber. I think they send pine to Newcastle sometimes. It is used for lining and ceiling boards.
385. Is it in much demand? When trade is brisk. Everything is dull just now.
386. What do you get per 100 feet for pine now? Eleven shillings at the mill in the rough, and 13s. 6d. tongued, and grooved, and planed.
387. It pays you to send it away? I do not send any myself. It pays those alongside the railway.
388. Is there much pine in the district? Any amount. It is getting cut out. There have been three mills in Narrabri for seven or eight years. There are three mills here now. A good many million logs have been cut up. We have not to go beyond 10 or 12 miles.
389. I believe there is a forest which extends for 90 or 100 miles out west? Yes.
390. Where does the ironbark come from which we saw on the railway line this morning? It comes from 8 or 9 miles away from the railway, on the south side of the Namoi.
391. Do you mean the Pilliga Forest? It runs down to Pilliga, I believe, and it runs right up to Boggabri. It is splendid ironbark. I do not think it could be surpassed.
- 392.

Mr.
T. Morath.
20 Nov., 1893.

392. Where do the sleepers come from for the railway? Mostly from there.
393. Where does that timber go? The sleepers are sent all over the country by the Commissioners.
394. That timber is for the use of the Railway Commissioners? Yes.
395. *Mr. Dawson.*] The white ants do not eat this native pine; No. It is a very valuable timber for building. I have pulled down buildings which had been up for twenty years; but I could see no sign of the white ant or of any decay. It is quite different timber from the Richmond pine or Baltic deal. It is a little harder to work.
396. *Mr. Davies.*] Do you know where the proposed line crosses the river? I believe it crosses at the pumping-shed.
397. You believe that to be one of the best and easiest crossings for the railway? I think there is only one place where there is a better crossing, and that is about 15 miles up the river. I think that was the proper place to cross the river, in order to keep out of the flooded country; but of course you will never take the railway there now.
398. In what direction is it? It is between here and Boggabri.
399. Has that site ever been examined by the railway surveyors? I cannot say. The railway runs within 2 miles of that place now.
400. The surveyed crossing is the best you know of? Yes.
401. And the railway will avoid all the flooded land? All but 2 miles in the town.
402. Does the railway go through any portion of your land? I cannot say. They have surveyed line after line. Some years ago they put some marks in my land. I hope they will not go through my land.
403. Have you not seen some pegs in your property at the present time? I hope they will keep out of my paddock. I make use of my ground, and I do not want to sell any.
404. You were originally a free selector? I was a selector in 1870, but I sold the selection, and bought it back when I returned.
405. Do you cultivate it? I cultivate some ground on this side of the selection.
406. Do you graze sheep? I have my teams to fetch my logs, and I keep some cows.
407. You think the "red" line will be most beneficial to the whole district? I think it will be a much safer route than the other. It is more solid ground.
408. It is very good country? It is good country.
409. *Mr. O'Sullivan.*] How far away is this forest of ironbark at Pilliga? There is a forest running on this side. It keeps a good way back from the river—in places 8 or 10 miles. It runs round from the railway-station to Pilliga.
410. Would a railway to Moree, *via* Gurleigh Point, serve that forest at all;—would it give any considerable traffic to a line at that point? I cannot say, but I should think the Commissioners have derived a good many thousand pounds from the timber traffic between here and Tamworth.
411. Is there likely to be any timber traffic to the north of Moree if this line is constructed? I have been in Queensland, and there is no timber out there fit for a mill. If they want any heavy timber for bridge-work they either have to come here or to Terry-Hie-Hie, about 20 miles to the east of the line.
412. They would have to draw it in 20 miles? To the next station.
413. Would it not pay them better to draw it in from Pilliga and send it up from Narrabri? It is 72 miles from Narrabri.
414. Where does the forest of ironbark begin? I think it begins up near Boggabri; but no matter by which route you take your line, to Moree you will leave that forest.
415. As far as the timber reserves are concerned, you do not gain much by going *via* Gurleigh Point? You gain nothing, because we have a forest nearer.
416. In the event of a timber trade arising in the north, it would be more advantageous to ship the timber at Narrabri than at any point on the Gurleigh Point route? Yes.
417. Is there much demand for pine towards the north? There is a tremendous lot of pine cut and sold.
418. Is it impervious to the white ant? I have had a sawmill for seventeen years, and I have never known the white ant to touch any pine about here.
419. *Chairman.*] Have you any interest in this line at all? No; I have only an allotment in Narrabri West, in Dangar Village, and in the borough. I have no allotment away from the town.
420. You are clearly of opinion that if we were constructing a line from Werris Creek it should cross the Namoi 15 miles higher up? Yes.
421. Is it an exceedingly good crossing at that point? It is very good.
422. It might be worth while to consider the question of taking up the line for 15 miles, and adopting that route? I do not think you could do that.
423. Why not;—could you not use the sleepers and the rails? Yes.
424. If a railway can be constructed above flood-level by crossing the river at a point 15 miles higher up, would it not be far better to take up the line to Narrabri West and put it over on this side? I do not think it would pay.
425. Why? It is too far. You have paid some hundreds of pounds for ground there. That line was built with a view of being extended to Walgett.
426. If that line were not in existence at all, and we were considering the question of constructing a line from Werris Creek to Moree, it would be far better, in your opinion, to cross the river 15 miles higher up? No doubt it would.
427. You are not quite sure whether it would pay the Government to take up the line 15 miles from West Narrabri, and put it on this side? I am sure it would not pay them—there is too much to be taken up.
428. Is it not proposed to go across the river by a more expensive and difficult crossing? I do not think it is much more expensive. I do not know anything about engineering questions. I think that the further you go down the river the more expensive you will find it to bridge the flooded country.
429. I suppose the West Narrabri people would not like the railway to be taken up in order to get a less expensive crossing at a point higher up? I do not know. It does not matter much to me which way it goes.
430. *Mr. McCourt.*] Have you supplied any railway sleepers to the Government? No.
431. At what price are they supplied? At 4s. or 4s. 3d. for squared sleepers. There have been no sleepers sawn here since the railway was built—they are squared with the adze.

- Mr. T. Morath.
20 Nov., 1893.
432. If it is estimated that split sleepers can be obtained at 2s. 6d. each for this line, do you think that they can be got for that price? I do not know what they are getting now. There is ironbark at Killarney, 4 miles out. If they can get enough in that forest they can do it at 2s. 6d. It is the cartage which makes them expensive.
433. You can get sleepers split in the forest for 2s. 6d. each, and delivered at various points along the line? At some places, but not everywhere. You can get them where the line goes through the timber, but not if you have to cut at any distance.
434. As far as Edgeroi station, do you think that sleepers can be supplied at 2s. 6d. each? I think they can get enough without going any distance from the line at 2s. 6d.
435. Split and delivered at that price? At some parts of the line, but not everywhere. Probably they could do it at the price all through.

Mr. James MacNamara, contractor, Narrabri, sworn, and examined:—

- Mr. J. MacNamara.
20 Nov., 1893.
436. *Chairman.*] What is your occupation? I am a contractor. I have been engaged in road-contracting for sixteen years in this district.
437. *Mr. Ewing.*] In your opinion, which is the best route for this railway to go? By the last surveyed route, because it will go through the soundest country, will be the shortest line, and will be nearest to ballast and timber.
438. You heard the evidence of Mr. Morath;—do you believe that there is an unlimited supply of pine? Yes.
439. And that that pine will be required not only for local consumption, but also in Sydney and Newcastle? And out north too. I daresay there will be an immense amount of pine sent out to Moree for building purposes when the line is constructed.
440. There is a fair sale for the pine? A good sale.
441. What is the apple-tree used for? Generally for flooring, ceiling, and making naves for drays and waggons.
442. More for local use? Principally.
443. Do you know anything about the red gum? There is very little red gum here. It is very faulty—it has lots of veins. I had to send down to Singleton for stuff to build culverts with.
444. Where is the ironbark in this district? It is very good. For good ironbark you have to go 20 miles. Between here and Moree there is a very large forest at a place called Terry-Hie-Hie, about 10 miles east of the “red” line. There is a good supply of ironbark, red gum, and slaty gum there.
445. Is not Terry-Hie-Hie more than 10 miles away from the “red” line? I do not think it is.
446. You are speaking of Terry-Hie-Hie forest, and not of the station itself? Yes.
447. What would it take per mile to form and metal road which would carry traffic in any season to Moree? It all depends upon what part of the road it is. If it were within a mile or two of the town it would cost about £1,600 or £2,000 a mile, and further out fully £3,000 a mile, for a good macadamised road, that is a road with 12 inches of metal and drained.
448. You believe that to form, drain, and metal a road that would carry the traffic in any weather from here to Moree, it would average £2,500 a mile? I believe it would average more.
449. The maintenance would be considerable? Yes; I believe a railway would be far cheaper, though I have been out of work myself for the last eight months.
450. You think a railway would be as cheap as a road? Yes.
451. *Mr. Davies.*] Where did you get your material for road-making? For about the town, I got it from the Little Mountain generally, and the gravel I got out of the river.
452. Where would a contractor get his ballast along this proposed line? The nearest point is about a mile and a half from Moree. At a place called the Little Mountain there is an everlasting supply of ballast. It is basaltic rock. There is a very pebbly gravel.
453. For how much per cubic yard could it be raised? In the town, for the metal we got from 8s. to 13s. per cubic yard, according to the distance; and for the gravel, out 5 miles, I have got 7s. per cubic yard. It is of a very hard nature; it has to be blasted.
454. At how much per cubic yard could 2½ inches ballast be placed on this proposed line? At about 7s., if there were a light line running into the ballast-pit.
455. Not for less? No. This stone is of a very hard nature. 5s. per cubic yard is given for breaking 2½-inch metal.
456. The gravel-pit you refer to is north somewhere? It is about 1½ miles away.
457. At what price could river gravel be brought and spread on the proposed railway in lieu of ballast, with the aid of a temporary line? At 2s. 6d.
458. At what price could sleepers be delivered on the line ready for use? It depends upon the class you want.
459. Undressed, half-round, ironbark sleepers? At about 2s. 6d. or 2s. 9d.
460. You know the country well between the terminal points of the line? I have worked in all those creeks—from Hall’s Creek to the present station-house.
461. Do you strongly advocate the construction of the “red” line? Yes.
462. Do you prefer the “red” route to any other route that has been surveyed? I do.
463. Do you think a railway can be constructed by this route cheaper than by any previously surveyed route? 100 per cent. less.
464. Do you believe a line along the “red” route will serve the general public and the district better than any other route would? I do. I believe that it will lead to very large settlement of small farmers between Narrabri and Moree, in certain portions of the Nandewar Ranges where I know there is good agricultural land. There are very large pockets of land between the rivers where men of small means could settle down and get a good living.
465. Do you believe that this line would develop settlement and trade? I do; and I believe it would be a great feeder to the present line.
466. *Mr. McCourt.*] Have you any knowledge of railway construction as well as road-making? I have a fair knowledge.
467. If it is proposed to put only 3 inches of metal between the sleepers as a foundation, is that sufficient, in your opinion? I do not think it is sufficient for any line.

468. What do you think would be sufficient? I think that between 5 and 6 inches is the very least ballast that you can put on. You want a little more than the depth of your sleeper, and nothing less.
469. Nothing less than 6 inches would be of any use? No.
470. It is only intended to maintain a speed of 15 miles an hour on this line;—would 3 inches of ballast be sufficient to run a train at that speed? No; suppose you go over a rocky point with 3 inches of ballast, your sleeper would lie on the solid rock, and when you go into an embankment your sleeper would sink on three inches of ballast. It is too little—there is no stay in it.
471. Is there any other place where you can get ballast along the line? Yes; at several points, and cheaper. At the Moree end there is an everlasting supply of gravel which could be supplied cheaper than at this end.
472. You are convinced that 6 inches of ballast would be required on this line? Yes.
473. *Chairman.*] Have you ever had any experience of railway construction? I have. I have travelled on all the lines in this country. I worked a little on this line, and also a little on the Bathurst line.
474. Plate-laying? No; only at formation.
475. As a ganger on the permanent-way? No.
476. What is the usual depth of ballast on the Bathurst line or on this line? I think it is 15 inches.
477. Very heavy loads are run over that depth of ballast at a great rate of speed? Yes.
478. If it is proposed to work this line with light rolling-stock, and to run the trains at a speed of only 15 miles an hour, it will make a considerable difference as regards the depth of the ballast? Yes.
479. You think that if only 3 inches of ballast is to be used it is insufficient? It is not sufficient.
480. Presuming that 3 inches of ballast were put down, and that after running the trains it was found to be too weak, all you expect would be the trouble of raising the line and putting a little more ballast under it? You would want to have more men to maintain the line.
481. What ballast do you think is required on this line? Six inches.
482. Supposing it were run along the travelling stock route, which country you say is of a more spongy nature, what ballast would you require? Fifteen inches.
483. At a speed of only 15 miles an hour with light rolling-stock? Yes.
484. Do you know anything of the country beyond Moree? I have not been more than 7 miles out. I have been as far as Pilliga, on the main line to Walgett.
485. Any trade coming from Walgett? Not as much as used to come.
486. You do not think it is desirable for the purpose of commanding that trade to take the railway by the travelling stock route? I do not think so.
487. You think it is desirable, with the view of fostering agricultural settlement to the east, to bring the line further east instead of west? The more easterly you go the more settlement you will have.
488. Do you think the railway should go by the "red" route? Yes.
489. Have you any interest in the line? I do not own more than an acre of land in the country.
490. What roads are there between Narrabri and Moree running east and west of the line? There is a road called the Little Mountain Road, which junctions 1 mile from Narrabri, and there is the main road to Bingara.
491. What roads are there leading to the proposed stations on the line to the east? None; there is no settlement.
492. What roads are there to the west? The Millie Road and the Boolcarrol Road.
493. The roads which are marked on the plan are only roads on paper? That is all.
494. Is there any other point you desire to bring before the Committee? Nothing more, except that I think the Narrabri station ought to be erected at some point near the cemetery.
495. Would not that be rather far to the east? No. There is a piece of land there belonging to the Government, and it is the nearest point to the post-office, and to the principal buildings in the town.
496. Is not your portion of an acre out that way? It is.
497. Where is the site you speak of? It is between the racecourse and the cemetery.
498. That would be virtually going past Narrabri for the purpose of running back to it? It would be about on the junction of Doyle and Lloyd Streets. The post-office and town-hall are not more than about 30 chains from where I propose the station should be built.
499. You propose to bring the line on this side of the racecourse? Yes.
500. Are you aware that the line, as proposed, goes at the back of the racecourse? Yes.
501. You propose not only to alter the position of the station-house, but also the direction of the line so as to bring it to the west of the racecourse? Yes. There is a very high portion of ground on the west of the proposed line—that is, through the old show-ground. It is right along the top street of the surveyed township of Narrabri, and stops at a point on the other side of the cemetery bridge, mostly parallel with Doyle-street and Lloyd-street.
502. Are you aware that there is only about a difference of a foot between the levels of which you are speaking and the paddock immediately adjoining Maitland Road? It is never known to be flooded.
503. Would it not mean the resumption of more land to go through the town rather than by the side of it? I suppose it would.

TUESDAY, 21 NOVEMBER, 1893.

[The Sectional Committee met at the Court-house, Narrabri, at 10 a.m.]

Present:—

JACOB GARRARD, Esq. (CHAIRMAN).

The Hon. WILLIAM HENRY SUTTOR.

The Hon. JOHN DAVIES, C.M.G.

THOMAS THOMSON EWING, Esq.

WILLIAM McCOURT, Esq.

EDWARD WILLIAM O'SULLIVAN, Esq.

HENRY DAWSON, Esq.

The Sectional Committee further considered the proposed railway from Narrabri to Moree.

Mr. Denis Roche, freeholder, Narrabri, sworn, and examined:—

504. *Chairman.*] What is your occupation? I am a freeholder, living on my means.

505. *Mr. Dawson.*] How long have you lived here? Over thirty years.

506. What occupation have you followed?—I was in the police force.

Mr. J.
MacNamara.

20 Nov., 1893.

Mr.
D. Roche.

507. 21 Nov., 1893.

Mr.
D. Roche.
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507. Then I suppose you know the district well? As well as any other man in the district, I think.
508. You know the travelling stock reserve from Narrabri to Moree, and also the "red" or direct route from Narrabri to Moree;—which route do you think would be the better one to adopt for the proposed railway? A route as near the mountains as possible.
509. Why do you think that route would be the best? It would open up better country—better agricultural country—than would a line by the other route. There is no agricultural country on the other route. All that place could grow crops, and there would be a market for the produce. It would open up country to a great extent.
510. Do you know of your own knowledge whether the country is open for selection under the ranges? I believe it is.
- 510½. From your practical knowledge of the district, and an experience of over thirty years, do you think that people here would take up land along that route, if they had facilities for carriage? I do; and from the other side of the range too.
511. How many families do you think could be settled on that land, that is within a reasonable distance of market on the other side of the line? Perhaps 100. On Bullawah Creek and Eulah Creek there are seventy selectors.
512. Knowing these different routes, do you know any other reason why the "red" line should be constructed? I know it will be by far the cheapest line. I have experienced floods in this district.
513. Would it be a drier or a wetter line than the other line? It would be much drier. For about 18 to 20 miles there is nothing but water, where a horse could not travel in a wet season.
514. I suppose that is the road generally used? Yes—going to Moree.
515. You cannot well travel by the other road? No.
516. It has been known here as the dry road? Yes.
517. Have you been much about Moree during your time? A good deal.
518. Do you know much about Warialda? I was stationed out there. I know every station in the district. I had to collect the electoral rolls and returns.
519. Would the "red" line be better for the Warialda people and the people north of Moree? Yes.
520. In what way? It is a good growing country.
521. Is the country about Warialda likely to be improved or settled upon more, if the railway goes to Moree? Part of it.
522. Not near the township? It is barren country round the township of Warialda.
523. But as regards the other side, would it create more settlement? I think it would. It is good growing country from Boggabilla.
524. You think it would be better for the people to have as little freight to pay for as possible? Yes; they send a great deal of wool from those stations which are further back.
525. Supposing a railway were made from Glen Innes to Inverell, would not that take a lot of the traffic which you think would come this way? I do not think it would take a great deal.
526. A certain portion of the traffic would go to Inverell? Very little. Traffic would come by this way from the following stations: Reedy Creek, Gragien, Gullengutter, Graman, Arthurseat, Wallangra, Gournama, Bogamildi, Coolatai, Trigamon, Yetman, Tuccato, Gunyer, Warildi, Yallaroi, Tooloona, Coppymurrumbil.
527. Do you think there is any land on the ranges which will grow wheat or cereals of any sort? I do.
528. Have you known wheat to grow about there? There is only one settler close to the line, and he has perhaps the nicest farm in this part of the country.
529. Do you think that many other farms like that would be established there? It am sure there would.
530. Do you think the "red" line will be the best line for getting timber and ballast? It will be much cheaper. You will want a lot of ballast for the other line.
531. Why? Because the country is so wet. I think you would have to raise that line 3 feet for over 20 miles.
532. Is there very good timber on this line? Yes.
533. Do you think there will be any increase in the timber trade? I am sure there will. They have to cart that timber to Moree; in wet weather it is very difficult and expensive.
534. You think that if this line is constructed there will be an increase in the timber traffic? There will.
535. Is there good timber along the line? There is good pine not 2 miles away from the line, and the ironbark might be a little further away.
536. Do you know where this line is to cross the river—at what they call the Rocky Crossing? Yes.
537. There was a very big flood there a great many years ago? Yes.
538. Were you here then? I was at Wee Waa, but I was here in very big floods.
539. You have seen the marks of the big flood which occurred before you were here? Yes.
540. Do you think the "red" line would have to be raised to any great extent to avoid the flood;—do you think there will be any danger of the line being washed away? I think it is as high a place as I know of.
541. You do not anticipate any difficulty of that kind there at all? No.
542. You feel certain that if it is constructed it will get a great deal of the wool and produce of Warialda which is not brought to Narrabri now? Yes.
543. Where does it go to now? I think a lot of it goes to Tamworth.
544. Does any go to Inverell? I do not think so. Inverell is 42 miles from Warialda, and there is no consumption for it.
545. Do you know any of the stations which send their wool to Tamworth, and get their stores sent by that road? I do not know of any.
546. How many bales of wool which now go to Tamworth would come to Moree, if the line were constructed from Narrabri to Moree? A great many bales.
547. Five thousand bales? I think so. There are very big stations out that way.
548. Have you any idea of what the tonnage in goods would be? No.
549. The big stations do use something, if they do not require many people? The large stations on the McIntyre employ a good many people.
550. *Mr. Davies.*] Were you in the police force during the whole of your residence here? I was, until I was superannuated.
551. You have not gone in for selecting? No.
552. Have you traversed the whole of the proposed line? I have not.

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553. But you know the country through which it goes? I have been through the whole of that country; I have been camped out there.
554. Do you think a line could be constructed more cheaply by the "red" route than by the travelling stock route? I do.
555. What difficulties would there be on the travelling stock route? In a wet season the river has backed as far as 14 miles.
556. There are several creeks to cross on the "red" line? Yes; but dry creeks.
557. Are you aware that the travelling stock route would be much longer than the "red" line? Yes.
558. About 10 miles longer? Yes.
559. Would a railway by the travelling stock route go through more settlement than the proposed direct line? I think so.
560. The "red" line would pass through several stations? Yes.
561. A line by the travelling stock route would go through several settled districts—Millie and several other districts? Yes.
562. Is there not a larger population in those districts than there is along the "red" line? Yes.
563. More selections? Yes.
564. More freeholders? Yes.
565. Still you say the country through which the "red" line goes has already a settled population? Yes.
566. Is it anything like equal to the population along the travelling stock route? I think there is more on the travelling stock route.
567. Do you know the population of Millie? The town consists of only two houses—a public-house and another house.
568. How many free selectors are there? A good many.
569. Would the "red" line which you seem to advocate serve the people at Millie? It would.
570. As well as if they went by the travelling stock route? I think so.
571. Quite as well? Yes.
572. Not so near to them? Not so near.
573. How far do you think the station at Woolabrar would be? I suppose it would be about 8 miles away.
574. You think that the residents of that portion of the district would suffer no inconvenience if the railway is constructed by the "red" route which is depicted on the plan? I do.
575. The greater portion of the land through which the "red" line will run is good agricultural land, fit for settlement? Yes.
576. Do you think that the "red" line, if constructed, would increase the settlement and the productions of the district? It would very much.
577. Consequently it would increase the traffic of the railway to Narrabri? Yes.
578. As one of the oldest residents of this district, you strongly advocate the construction of this line? Yes.
579. *Mr. O'Sullivan.*] Is it not a fact that there is a very much larger population on the Gurleigh Point route than on the direct route? At one or two points on the Gurleigh Point route.
580. Where are those points? Close to Gurleigh Point. Between Gurleigh Point and Millie there are two selections.
581. According to yonder map the portions tinted blue are occupied by selectors, therefore it must be evident that there is a larger number of selectors on the Gurleigh Point route than on the direct route? There is. I am well aware of that.
582. Then the direct line would not at first serve as large a population as a line along the Gurleigh Point route? Not at present; but in the course of a few years it would.
583. Your evidence is given more in the prospective sense than in the present sense? Yes; I think that all the land which is available has been taken up on that route.
584. Do you think the agricultural land you speak of will be speedily occupied when the leasehold areas are thrown open? I do.
585. In the event of the leasehold areas being thrown open, will there be a larger population on the direct route than on the Gurleigh Point route? Double, I should think.
586. Is there any truth in the statement that the land you refer to as agricultural land is so heavily timbered and scrubbed as to be too costly to be worked by a selector? No.
587. What kind of country is it? It is good loamy country. Of course the mountains you cannot work, but in the creeks and gullies it is all good growing land.
588. You think that, notwithstanding the timber and scrub, it will be readily settled on when the leases are thrown open? I am sure it will.
589. From what you know of this district, would it cost more to maintain a railway on the Gurleigh Point route than on the direct route? It would cost a great deal more to maintain a line on the Gurleigh Point route.
590. Why do you think so? From the lay of the country.
591. Is that route more liable to floods than the direct route? By far. I do not see how the other route will be flooded. The Gurleigh Point route will be flooded for about 18 or 20 miles. I have known the river to back there as far as 14 miles.
592. Is Gurleigh Point the bottom of the basin? I do not know.
593. Is it the lowest land on the watershed? It is as low as any.
594. Therefore, being the lowest land, the water collects there and floods the country? Yes.
595. Would not the Gurleigh Point route serve the western side very much better than the proposed direct route? It would.
596. Does not a large amount of the traffic which comes to Narrabri from the western side come from Collarendabri and other places to the west? Yes.
597. If the Gurleigh Point route were adopted it would be nearer to that traffic? It would, but a great deal of traffic comes down the other road; nearly as much as comes by Wee Waa.
598. Does more traffic come from Moree direct than from Collarendabri and the west side? I do not know that there is much difference in the traffic.
599. On the whole, I gather from your evidence that you prefer the direct route? Yes.
600. *Chairman.*] Have you any land on that route? No.
601. Any land in the town of Narrabri? Yes.

- Mr. D. Roche.
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602. Do you know where it is proposed to build the station at Narrabri? No.
603. Where is your land situated? In different parts of the town—at both ends and also in the centre.
604. You cannot tell us anything about the crossing between Narrabri West and Narrabri? No.
605. Have you ever been out to Walgett? Yes, often.
606. Is the country between Millie and Walgett all of the same character? It is.
607. It is very much liable to be flooded? Yes.
608. As you get to the east you get on to higher land? Yes.
609. You spoke of one settler on this agricultural land;—how far would he be from the "red" line? I do not suppose he would be 2 miles away.
610. Does the line run as near the foot of the hill as that? I think so.
611. You know exactly where the line goes? I have an idea. I have not travelled over the route, but I know the country well.
612. Is it not a fact that just about Millie, or below Millie, there is a large population settled on the creeks? I am not aware that there is. There are some selections and two stations close to Millie.
613. Of late years, I suppose you have not travelled much about the district? Not for four or five years

Mr. Edward Prosper Huxley, butcher, Narrabri, sworn, and examined:—

- Mr. E. P. Huxley.
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614. *Chairman.*] What is your occupation? I am a butcher at present, carrying on business in Narrabri.
615. How long have you been engaged in that business? On and off about twenty-two years.
616. In Narrabri all that time? I have resided here twenty-three years continuously. It is thirty-three years since I first came here.
617. Does your business require you to go into the surrounding districts? I know all the country pretty well.
618. You are familiar with each railway project that is depicted on the plan? I know all the country which is traversed by the "green" and "blue" lines.
619. Which project do you think is the best one to adopt in the interests of the country? I would prefer the travelling stock route myself, because there are very many more residents on that route than on the other route at the present time.
620. Whereabouts along the travelling stock route? All the way along the route about Ten-mile Creek, Boggy Creek, Millie Hollow Creek, and Bumble Creek.
621. Evidently those people are not afraid of being washed out? I do not think so.
622. Is it not a fact that the travelling stock route is very much better than the "red" route? There is no doubt it is. It is very much lower, but the nearer you go to the river the lower the land gets.
623. But for the sake of serving more people you think it would be preferable to adopt that route? At present.
624. There are more residents there at the present time? No doubt, when the runs are thrown open, there will be a good deal of settlement on the "red" line.
625. And also to the east? Yes; because the land is probably taken up on the travelling stock route now.
626. If we are looking to the future we will adopt the "red" line? Yes. I should be in favour of that.
627. Do you know anything of the country about Wee Waa? Yes, well.
628. Is there much settlement there? There is a good deal about Wee Waa.
629. You see the survey known as the Gurlough Point survey? I know all the line well.
630. That line would be very much more convenient for the Wee Waa people? It would suit the Wee Waa people right enough.
631. You think the trade, present or prospective, of Wee Waa is sufficient to warrant a deviation of 12 or 15 miles? I do not think so.
632. You think Wee Waa is out of the running? I do.
633. Do you think the present and prospective population in and about Millie would warrant a deviation in that direction of some 10 miles? It would get a good deal of the traffic which comes through Millie.
634. Do you think that a good deal of the traffic which comes in from the Barwon through Millie would come to the proposed railway at Woolabrar, instead of going to Narrabri? Yes.
635. It would serve that? Yes.
636. What is the distance from Millie to Narrabri? Forty-two miles.
637. You think that they would intercept the railway at Woolabrar? Yes.
638. You think the people would prefer to go 14 miles to 40 miles? Rather—on those plains.
639. So that this line would be a benefit to all the trade going through Millie? Yes.
640. They would not have much to complain of, after all? I do not think so.
641. Is there much settlement to the east of the "red" line? Not a great deal. On Bowman's Creek and over that way there are a good few selections.
642. Do you know anything of the country or trade beyond Moree? Pretty well. I know the country right out to the Queensland Border, and beyond that.
643. Supposing a line is constructed to Moree, how far to the north would it draw trade? I think it would draw trade all the way from the Barwon, Goondiwindi, and St. George's Bridge.
644. You think it would command the trade within that area, and far beyond that? Oh, yes.
645. Is any trade coming from St. George to Moree and Narrabri now? Yes, nearly all the way. Fisher and Company's station, Booramine, is only 70 miles from St. George's Bridge.
646. How does it come—*via* Millie? It all depends on the weather. Some carriers have their favourite roads.
647. In wet weather they head up the creeks? Yes. Others go round by Collarendabri. They go by whichever way they fancy is the best for the time.
648. You do not think the designer of this map has drawn upon his imagination too much as regards the area of the trade to be drawn by this railway? I do not think he has.
649. Do you know anything about the crossing between Narrabri West and Narrabri? Yes.
650. As a local resident, do you think that is about the best crossing which can be obtained? Yes, by far.
651. Can you give us any idea as to why the surveyors never hit upon this particular crossing against your door before? A lot of the surveys have been a ridiculous waste of time, I reckon.

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652. Did you know of this particular point—did you ever think it was an excellent crossing before? I always did, because I owned property where it crossed the Namoi River at one time.
653. Did you ever put your views before the surveyors? I did not interfere in any way.
654. Was it because you were afraid that you would be charged with having a personal interest in the matter? Not in the slightest. I never interfered at all.
655. You believe the point they have chosen for crossing the river from Narrabri is the best which can be found up or down the river for some distance? It is by far the best. It has high land on either side.
656. Is it before the rocky crossing a few miles higher up the river? Very much. There is a lot of flooded land on this side of Rocky Crossing.
657. You would only have one crossing? Yes; but I think the expense of a bridge would be quite as much as in this case.
658. During your residence, have you ever known a flood which would detrimentally affect this particular crossing? No. The 1864 flood was very high. It was over all the land. It was some feet deep in the town.
659. After the water gets as wide as that there is not much rush? It is steady then, it just spreads.
660. Supposing the line were being made from Werris Creek to Moree *via* Narrabri, I suppose it would cross the Namoi at a point very much higher up than the proposed point? Yes. It would go through better country too.
661. More up towards Boggabri? Crossing by the Rock.
662. Do you think it would be well to take up all the line between about Boggabri and Narrabri West, in order to cross at that point? No.
663. Have you any interest over at Narrabri West? Not the slightest. Some of my customers live over there.
664. You have an interest? Slightly. I have an interest in both places as far as my business is concerned.
665. You condemn that line as really a waste? It should never have been taken there in the first place.
666. Now that it is there, you would not like to deprive these people of it? Well, it has to go on sometime or other, and when it goes on it should go through Narrabri.
667. Do you think it is at all likely that the railway will ever go on to Walgett from Narrabri West? I do not think so. I do not think it should.
668. Was there any Narrabri West before that railway was opened? Yes, only one house. I built the first house over there.
669. Owing to the terminus of the railway being fixed there a township has grown up as a rival to Narrabri? Yes.
670. If it has been ascertained that there is a considerable trade from Wee Waa, Pilliga, and places in that direction, which would be served by the Gurligh Point line, and it is decided to take the railway in that direction, will that detrimentally affect Narrabri proper? Very much; I think it would ruin the town.
671. I suppose it will not increase the town very much by taking the line on to Moree? No; it will do the town harm whichever way it goes. But it will do the town very much more harm by going *via* Gurligh Point.
672. You think Narrabri will be snuffed out when the train goes on to Moree? No; there will not be the work and business for so many people. Some people will have to move on, or settle on the land.
673. Instead of Narrabri being the terminus, it will be a station on the line? The town will not go back as much as that. It will lose a bit for a time, but once the runs are thrown open, and people take up the land, the town will right itself again.
674. As regards the "red" route and the travelling stock route, do you think that one route is more expensive than the other? I do not think there would be a great deal of difference in the nature of the country. Of course the land on the travelling stock route is a bit lower. You would have a number of creeks to bridge.
675. Do not the creeks break out into a great number of branches on the travelling stock route? Not until they get below the travelling stock route; then they begin to spread out.
676. Every mile you go to the east you decrease these difficulties? Yes; you get on to higher land, because all these creeks lead from the mountains.
677. Therefore your opinion is that in the interests of both the trade north of Moree, and the future settlement on the route, and to the east, it would be better, perhaps, to adopt the "red" route? I think so.
678. Although at present there is slightly more population on the travelling stock route? Yes; of course once the runs are thrown open, there will be a great deal of settlement along that line.
679. Where does the fat stock come from which are trucked here for Sydney? Principally off the plains.
680. What do you term "the plains"? All the way from here to Moree, Pian Creek, and down that way.
681. Does much fat stock come from north of Moree? A good deal from between there and the Barwon.
682. They would be trucked at the nearest station? Yes.
683. You are aware that this railway, if constructed, is to be subject to what is known as the betterment principle, if such principle is enacted? No; I did not know it was to be constructed on that principle. I heard some talk about the matter.
684. Do you think that if those persons who are agitating for the construction of this line, and who are embraced within the betterment area which is depicted on that plan, were thoroughly seized of that fact, they would be as anxious as they are that it should be constructed? I do not know that they are anxious to get their pockets touched at all.
685. Speaking as a citizen of this country, do you not think that people whose pockets are benefited by the construction of a national work ought to bear some direct proportion of the cost? There is no doubt about a railway increasing the value of a property through which it goes, and being a convenience in every way.
686. And as long as there was a fair placing of the burden on those who deserve to bear it, you think that no one has a right to complain? No; as long as there is not too much for the people to bear.
687. If the question of determining the contribution to be paid by each person is left to the Land Court, do you think that that would be the best and most satisfactory way of arriving at a settlement? I think it would.

- Mr. E. P. Huxley. 21 Nov., 1893.
688. The Land Boards and Land Courts are giving general satisfaction throughout the country? I think so, generally. Some of them may make mistakes.
689. But you think the Land Court would be the best tribunal for determining the contribution to be paid by each landowner? Yes; so long as there was proper evidence obtained.
690. I suppose the people in and about Narrabri would hardly think it fair that they should be taxed for the construction of this railway? Not about the town, I think, because the railway is pretty convenient for the town at the present time. It is not likely that they would want to pay any more.
691. Still property adjoining the proposed station at Narrabri proper would be increased in value? It would increase the value of land in Narrabri pretty well I should think.
692. Do you know anything of a forest on this route? Yes; you do not get into much forest until you get out to Eckford's Scrub, towards the Gurleigh Point line.
693. How far is it off the "red" line? I think a portion of the "red" line goes through or near the scrub.
694. What is the nature of the forest? It consists of different kinds of timber—rosewood, belar, box, pine, ironbark, but belar principally.
695. That would not be good for sleepers? No.
696. Is there any timber of a marketable character there? Further back, on Bowman's Creek, there is any amount of ironbark.
697. Is it likely to give a trade to the railway? Yes; there is plenty of pine and ironbark.
698. *Mr. Suttor.*] Have you any idea of the cost of the "red" line? No.
699. It is to cost £153,000;—do you know what the cost of a line by the travelling stock would be? A few thousand more I should think.
700. How many thousands? I should say £2,000 or £3,000 more.
701. Twenty thousand pounds or £30,000 more? I should not think it would take that much.
702. The proposed line is intended to be a light pioneer line? I should not think it would cost anything like that, because there would be only the extra distance to consider.
703. What would that be? I could not tell.
704. Twenty miles longer? Looking at the map, I think it must be 20 miles.
705. The railway by the "red" route is estimated to cost £2,500 a mile, and if the travelling stock route is 20 miles longer than the "red" route the expense of the work would be increased by £50,000, would it not? That is a lot of money. I do not think it is necessary to spend that much.
706. Are you quite satisfied now that the "red" line would be the cheapest? By far the cheapest.
707. *Mr. Davies.*] If the railway is extended from Narrabri to Moree, as proposed, will it be the means of developing any additional trade? I think it will bring a lot of the Queensland border traffic which does not come here at all.
708. To what extent? I could not say, but I should think a good deal.
709. A large proportion of that traffic? Yes.
710. In the shape of stock and wool? Yes, and passengers.
711. It would greatly increase the traffic on the present railway? I am sure it would.
712. Would a railway by the "red" route increase the settlement in that direction? Yes, when the land is available for selection. It is all good land except in odd places.
713. What is it taken up for principally? There is some agricultural land, but it is taken up principally for grazing.
714. Is there much land under cultivation on that route? No, next to nothing close to the line. It is more back under the mountains, over towards the creeks.
715. How far back? Twenty miles.
716. Would those people be served by the line? That would be the nearest place for them.
717. How far from a railway do you regard as a convenience to a selector? I should think from 15 to 20 or 30 miles.
718. You think that the produce of the district within a radius of 30 miles will find its way to the railway? Certainly.
719. Further than that? I think it is very convenient to have a railway within 30 miles of your door in the bush.
720. If a line is constructed to Moree, what distance do you think wool and stock will be brought to Moree station? From Goondiwindi, about 90 miles.
721. Stock and wool? Yes. They travel here now from that station with their wool and stock.
722. That is to say, they travel 60 miles more than they would have to travel with a railway? Yes.
723. It may be inferred that a very large additional trade will be developed at that end? Very large.
724. A large proportion of the Queensland traffic will find its way in by way of Moree and Narrabri to Newcastle or Sydney? Yes.
725. There is no doubt in your mind as to the great advantages the district will derive from this railway? Very great.
726. From a national standpoint, it will be a great advantage to the district, as well as to the country? Yes.
727. You regard the line as a very cheap one? I do not think it is a dear line at all. It is level country all the way from here to Moree. All you have to contend with are the little creeks, and these are very narrow.
728. And dry? Except in wet weather; but the water runs down in a few hours.
729. What description of ballast would be available for the construction and maintenance of this line? About 19 miles from here there is a splendid lot of blue-metal, at a place called the Bald Hill.
730. Close to the surveyed line? Four or 5 miles away.
731. Is there any quantity of this blue-metal? Yes, and at Boggy Creek too.
732. Within easy access of the line? Yes.
733. Any number of trees for sleepers? I think they would probably have to come out of the mountains, and on the other side of the river.
734. At both ends of the line? In these mountains there is any amount of timber fit for sleepers.
735. What influence would a railway from Narrabri to Moree have on the town of Narrabri? No doubt it would hurt the town a little for a time, but it would recover its position.
736. It would improve the town very much eventually? I think so.

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737. It would bring a lot of settlement to this place? Yes.
738. And develop a much larger trade? Yes, after a time.
739. The town would permanently recover itself? Yes.
740. You have no misgivings about recommending the adoption of the "red" line? No.
741. You strongly favour the construction of the "red" line as speedily as possible? Yes.
742. *Mr. O'Sullivan.*] Have you ever heard of any flocks of sheep or herds of cattle being stopped on the travelling stock route by floods? Not cattle. Sheep may be stopped—they are very easily stopped in flood-time.
743. Does this frequently happen? No.
744. Is the mail-coach ever stopped there by the floods? No; not of late years, since the bridges have been put over the creeks. Of course the coach is behind time for a couple of days sometimes, but that is on account of the heavy state of the road.
745. You refer to the stock route to Millie? Yes.
746. This morning the coach was four hours late—was that owing to the rain last night? I suppose it was owing to heavy rain, but not to flood.
747. Does that frequently happen? Yes.
748. Supposing a line were constructed by Gurleigh Point or the travelling stock route, would it benefit the people of Wee Waa? Of course the Gurleigh Point route would bring the train within 5 miles of Wee Waa.
749. Would it be likely to start a rival town at the turn in the route? There is not the slightest doubt that it would.
750. Would that be beneficial or detrimental to Wee Waa? Detrimental. Unless it can be taken right into the town, the people of Wee Waa are better without the railway, I should think.
751. You appear to be very favourable to the construction of a railway by any route? No; I do not care whether it goes or stays.
752. You are not against the proposal? No; because I believe it will do good to the people of Narrabri after a time, and to the people on ahead.
753. Is there not a feeling abroad amongst your people that it will injure the town of Narrabri? I, as a business man, think that it will make the town dull for a time, but I believe it will recover itself after the district is properly settled.
754. Why did you keep this good thing so long in the dark? I did not keep it. It was welcome to go whenever it liked, as far as I was concerned.
755. *Mr. Ewing.*] How far is St. George over the Border? It is 90 miles from Mungindi.
756. How far is it from the nearest Queensland railway station? It is 120 miles from St. George to Yulibar.
757. The nearest Queensland railway station is 120 miles from the New South Wales border? Yes.
758. You think this railway might tap the traffic 80 miles beyond the Queensland border? Yes.
759. Geographically, you think this is the right place for the line to go? I think so.
760. Will the border taxation affect the line? I could not say. It all depends upon what duty they impose. If the duty is very heavy it cannot come this way.
761. If it were allowed to go the way it should go, it would come here? Yes.
762. You believe the railway should go by the travelling stock route, but ought to cross above the town? Yes.
763. Your idea of the best route is to cross the river above the town, go to the north of the town, turn west, and then go by the travelling stock route? Yes.
764. You stated that the railway ought not to go from Narrabri West to Walgett;—why not? On the other side of the river, for 60 miles, all the country is very inferior.
765. There would be no local traffic by the railway? No.
766. It is not good enough, from your point of view, to take it that way? No; they have water communication to Walgett.
767. Does the Walgett wool come this way? Yes.
768. Sometimes? It always does, except when the river is up, and then it goes by steamers.
769. In your opinion, the legitimate get-away from the Walgett country is by the river? Yes; a power of wool goes that way by steamer.
770. If there were a railway to Walgett, and the river were locked so that the steamers could get to Walgett, it would get away down the river? It would all go down the river, because water carriage is much cheaper than railway carriage.
771. The right way to develop that country is to keep the river permanently navigable, if possible, to Walgett? Yes; if you do that, they would have any amount of accommodation without the train.
772. Do you regard that as a difficult matter? Some parts of the Barwon are bad, except when the river is over the banks, but below Brewarrina it is right enough.
773. The Walgett people would not be helped very much by the navigation to Brewarrina? No; they can go to Brewarrina quite easily.
774. *Mr. Dawson.*] Is it or is it not a fact that a lot of the land which is depicted in blue colour on the map as selected land, has gone back into the hands of the squatters? There is no doubt that the majority of it has. I know every settler on the line.
775. On the travelling stock route there is not so much land held by conditional purchase as this map would lead a person to believe? No; there is nothing like that much. All the settlement out that way is along the travelling stock route and to the north of it.
776. But a great deal of the land has reverted to the original holder? Yes.
777. *Chairman.*] Have you any interest in any land in or about the district? Not at present.
778. Only in and about the town? That is all.
779. Is there anything else that you desire to say? No; I think I have been pretty well exhausted.

Mr. James Thomas Ward, senior, farmer, Eulah Creek, sworn, and examined:—

780. *Chairman.*] What is your occupation? I am a farmer at Eulah Creek, about 16 miles to the east.
781. *Mr. Suttor.*] Can you give any information about the cattle-stations in this part of the country? I have been fifty-two years in this district. I was on Gundemaine for thirteen years.

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- Mr. J. T. Ward, sen.
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782. What is the character of the country about Gundemaine? It is the next station to Narrabri. It formerly belonged to Mr. Lloyd. It is grazing country.
783. Is it fit for anything else but grazing? No. There might be odd places where you could grow a good bit of stuff if it were a good season.
784. What is it carrying now? It is carrying both sheep and cattle.
785. How many? I do not know. We used to have 25,000 cattle on it in my time.
786. Of course it has increased very much since you were there? Yes. It is chiefly taken up by selectors now.
787. Do you know any other cattle or sheep stations in the neighbourhood? Yes; Gurley and Millie, and all these places.
788. What do they run on Gurley now? The cattle used to run back from Gundemaine and Galathera to Gurley, and we had to go out there to collect them.
789. I suppose you have no personal knowledge of what the stations carry? No. In fact, in those days there were very few sheep, except on Gurley. There were no sheep on Gundemaine; it was a cattle-station.
790. Mr. O'Sullivan.] Do you know anything about the floods which occasionally occur here? I think I should remember them, for I have been washed away twice at the Broadwater.
791. Where is that? It is up at Turrava. It was formed into a township afterwards.
792. In what direction from the "red" line? It is 15 miles up the river—towards Gunnedah.
793. Can you tell us anything about the floods in the district that is likely to be served by the proposed railway? I droved for Mr. Lloyd for thirteen years, and we never could work the bights on the river from Gundemaine to Tulladunna, when I used to gather cattle while it was in a flooded state.
794. In your opinion, what portion of the country is most devastated by the floods? I think this side of the river is the worst side—from Gundemaine down to Tulladunna.
795. I am talking of the country which runs parallel with the proposed railway, say, for example, the Gurleigh Point route or the travelling stock route;—is that portion of the country more subject to floods than the portion to the east of the line? I do not know where the railway runs. I do not understand the map on the wall.
796. One line is proposed to go along the travelling stock route;—is that portion of the country subject to floods? I have never been along there.
797. Do you know much about the country at all between Narrabri and Moree? Yes, a bit. I have been over it.
798. Which lines have you travelled? From here to Millie, and from there to Moree along the main road.
799. You know the old coach-road well? That is the road I have been used to travel.
800. Is that road liable to floods? No, not particularly—only in very wet weather from Boggy Creek and Ten-mile Creek.
801. You have two roads from Narrabri to Moree—a dry-weather road and a wet-weather road? That is since my time of travelling.
802. You have not travelled those two roads? Not that I know of.
803. Mr. Dawson.] Supposing a railway were to go through Edgeroi, Woolabrar, and Gurley Stations, and right up on the rising ground near the Nandewar Range;—would that be a good route to take? I think it would be beneficial to the population in the future.
804. Do you think that a line going through Edgeroi, Woolabrar, Gurley, and Tycannah would be a good line? I am certain it would be for the population to come, for farming purposes.
805. There is very good land there? Yes; I suppose there is no better in the world.
806. Is that land open for selection? I think so. I do not think it is much populated.
807. There are a lot of reserves on those runs? I do not know.
808. Of the three lines—through Edgeroi, by the old main road, or round by Gurleigh Point—which line do you think would be the best? Through Edgeroi, certainly.
809. You know these three routes pretty well? Yes; I have been all over them.
810. Do you know anything about Warialda and the country on the other side of Moree? Not particularly.

Mr. William Murray Borthwick, grazier, Boggy Creek, sworn, and examined:—

- Mr. W. M. Borthwick.
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811. Chairman.] What is your occupation? I am a grazier, residing at Boggy Creek.
812. Mr. Davies.] How long have you resided there? Four years.
813. What is the size of your holding? Two thousand five hundred acres.
814. What number of sheep do you run? My brother, sister, and mother have selected that area, and we run together about 10,000 sheep.
815. What road do you take to Narrabri? We follow the travelling stock route to Galathera, and turn off there. It is just opposite Edgeroi, on the travelling stock route.
816. How far would it be from Edgeroi? It is 4 miles to Galathera.
817. How far would your holding be from the proposed station? I should think it would be about 15 miles.
818. What distance is it by the road from your holding to Narrabri? About 25 miles.
819. So that a railway by the "red" route would mean a saving of 10 miles haulage to you? Yes.
820. It would shorten the distance by 10 miles? Yes.
821. Which of these three surveys do you think would be the best to adopt in the public interest, and in the interest of this district? I think the travelling stock route would serve more people.
822. At the present time? At any time, I think.
823. Supposing it were constructed by the travelling stock route, is the settlement likely to increase very largely? I think so. The country to the west of the travelling stock route is as good as anything to the east, and there is land that will be open for selection directly the leases are thrown open.
824. Would not that apply also to the "red" line? Yes, it would; but then, of course, the country near the "red" line is very much smaller in area.
825. Is it not better country? Certainly not.
826. Is it not drier country? I do not think so. It is exactly the same kind of country as along the travelling stock route.
827. Would it be easier and cheaper to construct a line by the "red" route than by the travelling stock route? I do not think so; they are equally dry, as far as I know. 828.

828. Which is the drier line? Of course, the "red" line is the drier. There is a general slope from there to Walgett on to the river—the water falls that way. The stock route, being a little further west, would be lower, but it would not make any difference in the construction of the line. The ground would be just as good for that purpose. There are creeks and things to carry the water off.

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829. Supposing the Engineer-in-Chief for Railways estimates that a line by the travelling stock route will cost £500 a mile more than a line by the "red" route, do you think it would be wise, in the public interest, to spend £500 a mile more? I think it would.

830. You prefer to spend £500 a mile more on that route rather than go along the "red" route? I do, because it would not only serve more people, but would catch a lot of the traffic which comes in from Boggy Creek and Millie to Narrabri West.

831. Would not the traffic of Millie find its way across to Woolabrar? Some of it might, but the line will miss a great deal. Anything west of Millie it will miss.

832. How far is it from Millie to Woolabrar? About 20 miles.

833. Did you hear a witness swear this morning that it is only 8 miles? I did.

834. Who is correct? I think I am.

835. You know the locality better? I think so; I live there.

836. It is not 14 miles? I do not think so.

837. Have you travelled from Millie to Woolabrar? Not directly, but I know the country and the line. I have been to Dobikin, and I know the position from there. I think it would be within a few miles of twenty.

838. Do you know the length of the proposed line? I should think it is about 63 miles.

839. It is 62 miles. Do you know the distance by the travelling stock route? Yes. The distance *via* Ironbarks would be 74 or 75 miles, but I think the line by the travelling stock route does not go by Ironbarks; it cuts off the corner, which would make the distance considerably less.

840. It is about 72 miles? Yes; by road.

841. Do you think it would be wise to spend the sum necessary to construct 10 additional miles of railway along that route, so as to serve the settlers already residing on the travelling stock route? I think it would.

842. To pay an extra £500 for the construction of that line? Yes; I think it will save the erection of a line from here to Collareendabri hereafter.

843. I gather that you are in favour of the proposed line by the travelling stock route? Yes.

844. Even if it costs £500 a mile more than the "red" line? Yes.

845. Because there is a more settled population along the travelling stock route than along the red line? Yes.

846. You are not taking into account the large settlement which must take place along the direct line, if the leases are thrown open for settlement? I am taking that into consideration.

847. Would the people in your district—Millie, and all the surrounding country through which the railway will pass—even if it be constructed by the travelling stock route, be prepared to contribute their proportion of the cost on the betterment principle? Yes; if it benefits them.

848. That is to say, if the railway is constructed within easy access of their holdings, the property-owners in the district would be prepared to pay their proportion of the cost on the betterment principle? They would.

849. You are aware that that is one of the conditions on which the line is to be constructed? Yes.

850. With a full knowledge of that condition, you are here to give evidence that if a line were constructed by the travelling stock route, they would all be fully prepared to pay their proportion of the cost extending over a great number of years? I believe they would.

851. *Mr. McCourt.*] Is there any cultivation in your neighbourhood? None at all.

852. Is the land suitable for cultivation? I think it is. It only wants water. In a good season you can grow wheat there just as well as anywhere else. I have seen it growing in the gardens in small patches.

853. If it were found hereafter that wheat would pay better than sheep, you could grow wheat? I would.

854. I suppose the good season you refer to would be a dry season for wheat? Not particularly. We want plenty of rain in certain seasons for wheat.

855. What is the annual rainfall? I think the average rainfall is about 25 inches.

856. That rainfall would be suitable for wheat-growing? I think it would. If we had the water the ground is right enough. It might want irrigation.

857. Do you think that in the future there is any possibility of wheat-growing being gone into largely in this locality if a railway is constructed? I think there is.

858. *Mr. Ewing.*] You live at Boggy Creek, and if a line is brought by Millie it will suit you better? Yes.

859. You say it will just do the amount of injury to a man to the east that it does good to a man to the west? Yes.

860. You say also that the Moree people will have to pay more freight? Yes, and I think they have a right to pay that.

861. And notwithstanding that the whole of the Moree people and the people to the east will pay a larger freight you think that the railway should go by Millie? I do.

862. *Mr. Dawson.*] How far are you off the railway line now? About 25 miles from Narrabri.

863. How much nearer will you be if it goes by Millie? About 20 miles.

864. How far would you be off if it went by the "red" line? It is about 15 miles from the house to the line. Our land would front the travelling stock route.

865. If it goes by the travelling stock route you would be 4 miles off, but if it goes by the "red" route, how far would you be off? Between 12 and 15 miles, I suppose.

866. Do you not think a man is well served who is within that distance of a railway? Yes; provided that it suits the rest of the district too.

867. Where would you join the railway? At Edgeroi station.

868. You would save about 10 miles of carriage? Yes; but I would have to send my stock to Narrabri just the same. There is no water there, no accommodation, no reserves.

869. Those things are made after the railway is constructed;—the straight route would suit you better than any other settler on the west? It would.

870. *Chairman.*] Your place at Boggy Creek is some distance from Millie? It is 10 or 12 miles.

871.

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871. I think you stated that the distance from Millie to Woolabrar station would be 20 miles? I think it is.
872. If the Department states that Woolabrar station would be within 13 miles of the Millie people at the outside, will you put your view of the distance against theirs? Certainly not. I say as far as I know it is 20 miles.
873. Do you not think the Millie people will be fairly well served if they are brought within 13 miles of a railway station? The people in the immediate vicinity may be, but most of the settlement is to the west of Millie.
874. Where do the people west of Millie strike the travelling stock route? At Boggy Creek.
875. Do they come through Millie to do that? A great many of them do.
876. In other words, coming from the west of Millie, they go to Millie and travel the old coach-road south until it joins the travelling stock route at Boggy Creek? The people north-west and north of Millie do.
877. You see a road or travelling stock route marked on that map from Woolabrar station to the travelling stock route;—is that road in existence? I do not know.
878. Do you think that if that road were available it would be a very good cut-across to the railway for the Millie people, and the trade beyond Millie? I do not think so. It would serve Millie itself well enough, but it would not serve the settlers to the west.
879. I presume it would due west? I do not think so.
880. The people next to Millie all come by Boolcarrol, along the Namoi, with their stuff? They come in at Ironbarks.
881. Do they come in at Boggy Creek? No—on the main road to Ironbark, which is 5 miles down the river from Narrabri.
882. They would still go that boggy road? I think they would.
883. How far would they have to go to travel to Narrabri by this Ironbarks road? Different distances. I suppose the nearest to Millie might have to go 30 miles, or perhaps 35 miles.
884. In what direction from Millie is that? Due west.
885. Would they come to Millie? They would come in by Boolcarrol and Ironbarks, I think.
886. Do you not think they would aim for the nearest railway station at Woolabrar? I do not know. They have the roads they have been using for years. If they take their stuff to the nearest railway station they would have to pay some freight, and the freight by dray is as cheap as the freight by rail.
887. You think that instead of going to the expense of putting in a connection with Woolabrar, it should be done away with? Yes—except for the people immediately around.
888. You say that while you would use Edgeroi station to carry your produce, you would drive your cattle in by road to Narrabri? I would, because there would be no accommodation for them at Edgeroi—no water or reserve for them.
889. Unless these facilities are given on this road, it would be far better for you to travel the road to Narrabri West? Yes.
890. Could not these facilities be given? I do not know.
891. *Mr. O'Sullivan.*] What is the average size of the selections out your way? From 2,500 to 5,000 and 10,000 acres.
892. No selector can hold 10,000 acres? No.
893. You mean a "family" selection like your own? Yes.
894. I am talking of a single holding? About 2,500 acres.
895. Have all the selectors got the maximum area? Most of them have.
896. Are there many of that class around Millie? A great many.
897. And to the west of Millie? There must be 100 or more.
898. How far out would the 100 go to the west? I can give you the names of the stations if you like.
899. Do they go along the Moomin River and out towards Collarendabri? Yes.
900. Where do they go for their stores—to Wee Waa or Narrabri? I daresay a good many go to Wee Waa.
901. Any stores at Millie? There is a store, but not much of a store.
902. You think that settlement is likely to be permanent? Yes.
903. Have you heard of many selling out to the large landholders? No.
904. Is Millie the point which stock from the west strike when they are making for Narrabri? Yes, from some parts of the west. They come by that road when there is any uncertainty about crossing the river by the lower road.
905. Which road do you term "lower road"? There is the upper road from Collarendabri, which goes north and turns away west into Millie. There is the lower road, which comes from the south-east of Collarendabri towards Narrabri. The south-east road is at times avoided, because of the uncertainty of crossing the river. Whenever that happens, stock from Collarendabri generally take the upper road and strike Millie.
906. I suppose they do that because there is no other road for them to go by? Yes.
907. Have you heard of very much stock travelling that way? I cannot say very much about that.
908. When the leasehold areas are thrown open, two years hence, on the south side, through which the direct route passes, do you think that that land will be selected by men of your own stamp? I am sure it will.
909. Is it not possible that you will have 100 or 200 selectors to the east? The land will all be taken up; but there is not as large an area for them to take up as there is on the west.
910. There is a larger area of Crown lands on the east than there is on the west side? I do not think so.
911. When these Crown lands are thrown open, will you not have a large population along the "red" route as well as along the Millie route? The land will be taken up wherever it is open; but I do not think there is sufficient area for them to take. The area between the route and the mountains is limited, and the mountainous country is useless.
912. Why? Because it is all scrub. You can scarcely ride over that part.
913. We have evidence to the effect that it is splendid country, fit for agriculture, and not heavily timbered or scrubbed? It is all scrub, except a few holes or gullies between the mountains.
914. Have you been through the country to the east of the proposed line? Yes.

915. In your opinion it is not at all suitable for production? Decidedly not, except that portion between the line and the mountains.
916. How do you account for this contradictory evidence which has been given? I do not know. Of course, the country at the foot of the mountains is good enough—as good as any in the Colony.
917. I am not speaking of the country in the mountains, but of the country between the railway and the mountains? That is good country, but the distance is very short from the railway to the mountains.
918. About 10 or 15 miles? Yes.
919. There are 10 or 15 miles of country on that side compared with 150 or 200 miles of country on the other side? But a great deal of the country on the left-hand side is already settled.
920. But there seems to be very little Crown land left on one side within 20 miles of the line? That seems to be a good reason why it should be served with a railway.
921. You think the line should be taken where the existing population is? As near as possible to them without doing an injustice to Moree.
922. Can you state the population within a radius of 10 miles of Millie? I could not.
923. How many settlers are there around Millie? I think, within a radius of 20 or 30 miles of Millie, there are over 100 selections.
924. Millie itself consists of only two houses? That is all.
925. So that we cannot take the town of Millie into account? No.

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Mr. George Burney, journalist, Narrabri, sworn, and examined:—

926. *Chairman.*] What is your occupation? I am a journalist.
927. Have you resided in the district long? About twenty years.
928. *Mr. O'Sullivan.*] What reasons do you advance for the construction of the direct route in preference to any other route? The direct route is not only the shortest route, but from my knowledge of the place I believe it will be likely to benefit the greater number of people. In the next place, it will entail less burden upon the taxpayers to have the shorter route. I believe it should be the policy of the Government to have as short a route as possible, so as to lessen the taxation, if the railways are to be constructed for the benefit of the people.
929. You look at the subject from a national point of view? From that point of view I condemn railway construction.
930. Is it not a fact that the Gurleigh Point route would serve a larger population? I do not think it is a fact. A larger population would be settled in the mountain range, which, although scrubby, is nevertheless beautiful soil, which would grow any crop.
931. What effect would a line from Narrabri West, *via* Gurleigh Point, have on the town of Narrabri? It would be ruinous, first to Narrabri and Narrabri West, and secondly to Wee Waa. It would be an everlasting injury to the people of this place to take the railway by Gurleigh Point. I cannot understand that idea at all. I believe it emanated from a gentleman who is living in the district, and who influenced Mr. Jones.
932. You do not approve of Mr. Jones's report in favour of the Gurleigh Point route? No; there was a public meeting called to protest against that report.
933. Would not the Gurleigh Point route serve the country to the west, from which you derive a large portion of your traffic, much better than the direct route? I do not think we get such a very large quantity of traffic from that westerly direction. I think the biggest portion of our traffic comes from the other direction—from Millie and that direction.
934. Do you not derive a considerable amount of your business from the Collarendabri district? I do not think we do to any great extent. We certainly get it, but we do not get as much as we should get otherwise.
935. Supposing that you get a third of your business from that neighbourhood, could that be set off against the advantages of the direct route? I do not think so. I believe the direct route is the best and the cheapest.
936. I presume that in making that statement you are sweeping aside all consideration of the future? That is the point I am considering. I believe a railway ought to be constructed right through from one end of Australia to the other—right through to Adelaide.
937. If the line goes on to Goondiwindi, you think it will be wrong to load that traffic with 13 miles additional tonnage, owing to the adoption of the Gurleigh Point route? I think it would be an everlasting injustice to make the people out there pay higher rates. We have to pay high enough rates as it is.
938. You have been settled here for some time? About twenty years.
939. You have seen a rush for settlement take place? I have seen too great of a rush unfortunately for the district. As that map plainly points out, the greatest portion of the land that was taken up was afterwards resold to people who have the whole country at their command. The land tinted blue is principally in the hands of stations who employed men as dummies to take it up.
940. Do you think a rush for selection will take place in the country which is uncoloured on the map, when the leases are thrown open? There is not the slightest doubt but that people will take up land wherever it is available. I know that people are anxiously awaiting for land to be thrown open. But it is to be hoped that the Government will devise some means of preventing them from making the same use of it as they have made in the past—from taking up land and selling it.
941. Have you heard of any inquiries for land in that direction? Yes; from any number of people. There is not an acre which would not be taken up to-morrow, if it were open.
942. The probabilities are that by the time the railway is constructed, if it should go by the direct route, there will be a population already settled there? I do not know that there will be a population settled there straight away. I know very well that people have the idea that the railway is going to make so much settlement. I do not believe that a railway has any tendency to make settlement. I believe it has a tendency to bring people's goods a little cheaper.
943. I suppose you prefer macadamised roads to railways? I suppose they would have a greater tendency towards settlement. The betterment principle should be applied to make people pay for roads to these places instead of railways.

Mr.
G. Burney.

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- Mr. G. Burney. 944. You heard the evidence of the gentleman from Millie, who stated that there are 100 selectors in the neighbourhood? There might have been that number at one time.
- 21 Nov., 1893. 945. Are there not 100 selectors there now? I do not believe there are 100 selectors in any part of the district.
946. How long is it since you were at Millie? It is a good while ago.
947. Have you heard of many selling out? Why, Mr. Mulcahy sold out his selection the other day, and he is now living in the town. He had a big selection out there. He could not find a bit of land which would suit him, and he would be glad to get his selection back now for a little more than he sold it for.
948. Do you think that within a reasonable period, when the leasehold areas are thrown open, there will be as many men settled along the main "red" route as there will be along the Millie route? I am quite satisfied that there will be more. Wherever land is available the people will have it. I consider there is more land available on this side than on the other.
949. Mr. McCourt.] You are in favour of the shortest and most direct route to Moree? Yes.
950. Is not the "blue" line depicted on that map shorter than the "red" line? If it is the shortest line, by all means have it.
951. It would not go into Narrabri? I do not see what is to prevent it from going into Narrabri, although it may be the shortest.
952. At any rate, you would be in favour of the "blue" line? The "blue" line. I am in favour of running a line as direct as possible to a place; as straight as a die if it can be made.

Mr. John Healey, bushman, Narrabri, sworn, and examined:—

- Mr. J. Healey. 953. Chairman.] What is your occupation? I am a bushman.
- 21 Nov., 1893. 954. How long have you resided in the district? Twelve months.
955. Mr. McCourt.] What have you been engaged in? In splitting and squaring sleepers, principally for the railways.
956. At what price have they been supplied? The Commissioners paid 4s. 4d. a sleeper for the contract for 25,000 sleepers that we had.
957. That is for squared, adzed sleepers? For dressed sleepers, delivered on the railways.
958. At what price would you split similar sleepers without being adzed? The timber would not split into a practical piece which would do to lay under the rails.
959. Therefore you could not get split sleepers in the rough? No; I could not promise them at any price. The Engineer-in-Chief wants two flat sides.
960. If the Engineer-in-Chief reckons that he can get sufficient split sleepers of the size required at 2s. 6d. each, you think he will not be able to get them at that price? I think they will cost just as much as the ordinary dressed sleepers.
961. You could not get these sleepers at 2s. 6d. each? No. The cartage of the sleepers would make up the difference in the price. It would necessarily drive the men another 30 miles out into the bush.
962. Why? The timber is getting cut close to stations. The carting is getting longer, and more must be paid on it.
963. Where do you get the timber now? Close to the railway line.
964. You would have to go further out to get the sleepers for this line? Yes. For the 25,000 we cut last year we had to go out 24 miles.
965. Is there not a good deal of work in squaring the sleepers? There is—a good deal of work.
966. Does it not cause more work to get squared sleepers than to deliver split sleepers in the rough? I have never seen any split sleepers used, except a few.
967. Have you had much experience in bush-work? About twenty years.
968. In this district? Not exactly.
969. Have you never seen split timbers put in the railways or tramways? I have seen them used in New Zealand, but they were thrown away again. They were only 7 feet long there. They abandoned the idea there.
970. You think that if it is estimated to get split sleepers at 2s. 6d. each for this railway, they cannot be supplied at that price? I do not know; they might be supplied.
971. Could they be so supplied, in your opinion as a bushman? In my opinion they would not.
972. How much more would they cost? In my opinion they would cost 3s.
973. Mr. Ewing.] You are being paid 4s. 4d. by the Commissioners to deliver squared sleepers at Narrabri station? Yes.
974. How do you make up that amount—part for carriage and part for work? About one-half for carriage.
975. Therefore 2s. 2d. goes for the carriage;—if the sleepers were cut close to Narrabri station you could supply them at 2s. 2d.? If they were close to the station.
976. Do you know the country where this line is going? I have made special inquiries to find out if there is any timber on the line fit for public works. I have never been over the country myself.
977. Do you know anything of the country? I hear that there is no timber on the country fit for public works.
978. Will you swear that? I cannot.
979. Supposing that there is timber along the line the sleepers will be supplied there at 2s. 2d., will they not? They will be supplied at the stump at that price.
980. So that your statement that they will have to pay 3s. right through for sleepers will not come out quite correct? I have no doubt they will be supplied here at the stump for 2s. 2d.
981. You base your estimate of the cost of the sleepers partly on carriage? Yes.
982. Therefore if it turns out that on portions of the line there is not much carriage, your estimate of the cost will be wrong? There is no ironbark timber along the line.
983. But if you find out that there is ironbark from people who have been along the line, they may be obtained there for 2s. 2d.? Yes; I think that if the Commissioners will call for separate tenders for the sleepers, apart from the earthworks and all that, they will be able to get them much cheaper than they otherwise would do.

Mr.

Mr. John Gateley, Chairman, Narrabri West Progress Association, sworn, and examined:—

984. *Chairman.*] You are Chairman of the Narrabri West Progress Association? I am.
985. You, on behalf of your Association, and a number of its members, expressed a desire to be examined? Yes.
986. Are there any other members of the Association besides yourself here to give evidence? No.
987. Do you desire to make a statement? As a body, we are in favour of the direct route. We consider that it is the shortest and cheapest route. It traverses the highest land, and I think it is very likely that it will open settlement.
988. Do you know anything of the proposed crossing over the Namoi? No.
989. How long have you resided at Narrabri? About twelve years in Narrabri West.
990. What is your occupation? I am a storekeeper.
991. Any other reasons that you desire to give? I do not think it will be a benefit to the Narrabri district if the line does go to the north. I consider it will deprive 500 carriers and their families of their livelihood.
992. Will it not mean that they will have to go further north? I do not see where they will have to go.
993. Why? The line is not likely to terminate at Moree, as far as I can hear, but will go on to the border.
994. If the carriers are now employed in carrying from places 100 miles north of Narrabri to Narrabri, and the terminus of the railway is shifted to Moree, 60 miles further north, is it not fair to assume that they will still be able to do 100 miles of travelling? That country is supplied with carriers already.
995. What is? One hundred miles north of Moree there are sufficient carriers to do all the carrying.
996. If we now draw a trade to the railway from 100 miles north of Narrabri, and we extend our railway terminus 60 miles further north, is it not reasonable to suppose that we shall draw a trade from 100 miles north of Moree, and that some carriers will be employed in that way? But there are carriers there now.
997. Do not the people of West Narrabri desire the railway to be extended *via* Gurleigh Point? No.
998. As a storekeeper at Narrabri West, can you state whether there is much trade coming in from the Wee Waa and Pilliga districts? There is a very fair share of trade.
999. What proportion would it bear to the trade coming from Collarendabri—a fourth, a sixth, or a fiftieth part? I could not answer the question, honestly.
1000. Is there anything else that you would like to add? No.

Mr.
J. Gateley.
21 Nov., 1893.

Mr. Ambrose Martin, bushman, Narrabri, sworn, and examined:—

1001. *Chairman.*] What are you? I am a bushman.
1002. How long have you resided in the district? Two years.
1003. Did you hear Mr. Healey give his evidence as to the sleepers? Yes.
1004. Do you concur in the views he expressed? I endorse his views pretty well.
1005. Have you any knowledge of the timber-bearing qualities of the land between here and Moree? No further than Narrabri itself.
1006. You have nothing more to add to what the previous witness said? No; I simply want to endorse his statement about splitting sleepers. Yesterday two witnesses gave evidence that split sleepers could be delivered on the line at 2s. 6d. each; I consider that that statement is ridiculous.
1007. Did you not hear the last witness confirm that evidence? No; I heard him say that they would be squared sleepers.
1008. Have you had any experience of getting half-round split sleepers? In New Zealand; but their sleepers are split out of a different kind of timber.
1009. Is it not practicable to get half-round split sleepers out of this forest near Narrabri? As a practical man, I know it is not.
1010. Supposing that it is possible to run a saw through the timber? It must either be sawn or hewn.
1011. At present you have to get a good lump of a tree to make a squared sleeper? You can get a lot of sleepers out of a lump of a tree.
1012. I suppose if you get a tree about 18 inches in diameter, or even less, and saw it down the middle, it would make two sleepers? Certainly not.
1013. Why? Because they will not be sufficiently wide to come up to the dimensions.
1014. You are thinking of squared sleepers;—if it is proposed to use half-round sleepers, and not to be so particular about the quality of the wood, as you are in regard to squared sleepers, what then? It is impracticable to make a railway with split sleepers out of the timber which is growing in this district.
1015. Have you ever been in Queensland? No; but I know the sleepers split out of Queensland timber.
1016. You are only speaking of ironbark here? There is no other timber here suitable for sleepers.
1017. No blue or red gum? Not in any quantity. Ironbark is the only timber suitable for sleepers.
1018. Have you a contract to split sleepers? No.
1019. What do you think is the lowest price at which sleepers could be delivered on this line, taking into consideration that they are not to be squared, and are not necessarily to be of the very best timber? I daresay about 2s. 6d. each.
1020. Not far off, after all, then? No.

Mr.
A. Martin.
21 Nov., 1893.

WEDNESDAY, 22 NOVEMBER, 1893.

[The Sectional Committee met at the "Royal Mail Hotel," Millie, at 8 p.m.]

Present:—

JACOB GARRARD, Esq. (CHAIRMAN).

The Hon. WILLIAM HENRY SUTTOR.

The Hon. JOHN DAVIES, C.M.G.

THOMAS THOMSON EWING, Esq.

WILLIAM MCCOURT, Esq.

EDWARD WILLIAM O'SULLIVAN, Esq.

HENRY DAWSON, Esq.

The Sectional Committee further considered the proposed Railway from Narrabri to Moree.

Mr. James Halse, grazier, and Secretary to the Millie Railway League, sworn, and examined:—

Mr. J. Halse. 1021. *Chairman.*] What is your occupation? I am a grazier, residing at Molton, 8 miles north of Millie.

22 Nov., 1893.

1022. How long have you resided in the district? Since Easter, 1872.

1023. You are the Secretary to the Millie Railway League? Yes.

1024. How long has it existed? About three or four weeks.

1025. It has not contributed to any agitation with reference to a railway heretofore? It contributed towards the agitation when we found that the railway was going in such a way that the place would be completely left out in the cold, and, as it is to be constructed on the betterment principle, we thought we might as well bring forward our views.

1026. Do you think the "red" line would benefit the largest number of people in the country through which it goes? I am sure it will not.

1027. What is your objection to that route? My first objection is, that along that route there are just about three selectors that are benefited. I, as a selector representing a large body of selectors, certainly take a strong objection on that ground. I have a return from eighty-three selectors, which shows that during last year the selectors within 40 miles of Millie trucked 102,119 sheep, using 1,134 trucks, and as the rate for 40 miles, according to the Commissioners, is £1 6s. 8d. per truck, that will give a total of £1,512 for sheep trucked.

1028. You are going on a basis of 40 miles? If the railway goes round by the travelling stock route—by Little Bumble—they would travel 40 miles, otherwise they would go to Narrabri.

1029. Your contention is that if the "red" line is constructed all this traffic which now goes from Millie to Narrabri West, but which would go along the travelling stock route if a railway were constructed by that route, will still go by road to Narrabri West? Yes.

1030. Are you aware that Woolabrar station, on the "red" line, will bring that point of Millie on the travelling stock route within a distance of 10 or 13 miles? Even so, it is only 40 miles from Millie to Narrabri. How far would it be from Woolabrar Station to Narrabri?

1031. About 30 miles? Rather than drove sheep for 18 miles, and then have to pay 30 miles trainage, I should prefer to drove them 40 miles.

1032. As a matter of fact, do not the sheep or cattle which are trucked for the metropolis go to the nearest point on the railway? Not always.

1033. Can you cite a case in point? I could cite a number of cases where they have gone to Boggabri, Breeza, and Gunnedah.

1034. Sheep from this district, instead of being trucked at Narrabri West, have gone on to Boggabri? Yes.

1035. How long ago? Cattle going to Sydney frequently go that way. I have known any number of instances, but I did not consider it worth my while to make a note of them. I believe the majority of the drovers, unless there were very good trucking-yards established at Woolabrar, would prefer to go on to the permanent trucking yards.

1036. Will you resume your statement? A road is proposed from Kerramingly to Woolabrar; but are you aware that it is proposed through dense scrub, which would first have to be cleared?

1037. The Department proposes to give you a road to connect the travelling stock route with the railway station? I am a selector, and unfortunately I know the value of Government promises at times.

1038. It is not likely that the Government would give you a railway without providing a road to the station;—all the sheep you mentioned as going through Millie were not the product of the Millie district? Within 50 miles of where we stand.

1039. Fifty miles west? Generally west.

1040. Do you think that any of those sheep that now go through Millie, if the proposed line were constructed, would go to Gurley station, or any station north of Woolabrar? It entirely depends on the nature of the station, and of the conveniences provided for trucking. If these conveniences are not provided, I think that anyone would prefer to go the other way.

1041. How many of the 102,000 odd sheep that you mentioned came from north of Millie? Probably a few.

1042. What proportion—a third? No; there might have been 15,000.

1043. How many came from the west? I could not state exactly, but a considerable number came.

1044. Roughly speaking, how many? I should say 70,000.

1045. And the balance, consequently, came from the south? Yes.

1046. The district from which the 70,000 would come would be from south-west to north-west? Yes; 10,000 would come from only 9 miles to the south-west.

1047. How far north would those that came from the north come? I think about 10,000 would come from about 8 miles north.

1048. They would not be likely to go to Gurley station, for instance? It would depend entirely on the accommodation. In trucking sheep and cattle, especially wild cattle, we would not go to paltry yards, but to substantial yards.

1049. That would be a very small number compared with the greater number which would come from the west through Millie;—do you think that 10,000 are likely to go to Gurley station? I do not think they would, for this reason, that there is no water there or travelling stock reserve.

1050.

1050. Do you know, fairly well, the country through which the proposed railway runs? I had a good ^{Mr. J. Halse:} experience of the scrub at one time; I was nearly lost in the scrub.
1051. Is it not a fact that the land through which it runs is higher than the land about the travelling ^{22 Nov., 1898:} stock route? Some may be low.
1052. Is it not a fact that the travelling stock route is sometimes impassable, owing to the flooded nature of the country? I have never heard that it is.
1053. Only difficult to travel, but not impassable? I have never heard of the country being impassable. It is very difficult to travel at times.
1054. It is very difficult at times? I have ridden over it at different times, but I have never seen it in that state.
1055. You admit that the country through which the "red" line goes has a slight advantage in being higher than the travelling stock route? In places, I believe it is, but as far as the scrub is concerned it is very soft and spongy there. I would prefer to go through the plain in wet weather.
1056. If it has been asserted that one of the reasons for taking the railway by the "red" route—that is, to the east of the travelling stock route—is that it heads the creeks higher up, and gets away from a number of branches lower down, in your opinion would that be a correct assertion? I do think there would be danger. I have seen these creeks in such a state that they were not perfectly safe.
1057. If the Engineer-in-Chief has sworn before the General Committee that it would cost at least £500 a mile more to make a railway along the travelling stock route, besides the cost of the increased haulage, would you put your opinion against his opinion? Not being an engineer, I cannot give a professional opinion, but I should think that he might make a mistake.
1058. Presuming that the travelling stock route is adopted, do you think that what is known as the Gurleigh Point deviation should also be taken in? That means that the railway at Narrabri West would still remain there.
1059. Presuming that the travelling stock route is taken from Moree, would you propose that a deviation should be made from the travelling stock route with the view of going *via* Gurleigh Point to Narrabri West? I think it would get more revenue.
1060. Do you think it would be preferable to make it in that direction? I could not say that.
1061. Do you know the country on the Gurleigh Point route? Not as well as on the other route.
1062. While you think you may get more revenue, you cannot give a definite opinion? Not to decide on the merits of the two proposals.
1063. Have you ever been far north? I have been as far as Roma, in Queensland.
1064. If it has been contended by some witnesses that if a line is made, irrespective of the direction it goes, between Narrabri and Moree, it will get a considerable portion of the Queensland trade, do you agree with their contention? If it is proposed that the railway to Moree shall go straight-out to Boggabilla, I consider it very unwise.
1065. I am not talking of an extension of the railway from Moree;—I ask if the railway is extended from Narrabri to Moree, irrespective of the course it takes, will it draw trade from Queensland? It may draw some. It is an open question.
1066. You would not like to give an opinion as to whether it would? I believe it would bring a little trade, but I do not think it would bring such a lot.
1067. I think you asserted just now that some of the sheep which come to Narrabri West, come from as far as Mungindi? Below Mungindi—between Mungindi and Collarendabri.
1068. Do you think any sheep from the north-east of Mungindi come down this way? I think they do. The sheep from the north-east generally come down by there. I do not think they come out of Queensland.
1069. If we take the railway 60 miles further north from its present terminus, is it not reasonable to suppose that we shall tap the country further north? Yes. You may tap some country, but I think that by going by another route you would get a lot more, and still get the traffic you speak of.
1070. You mean, to go by the travelling stock route? Yes.
1071. Will it make a material difference? Yes. We have a tremendous traffic, which will never go on the line if it goes by the "red" route.
1072. I am speaking of the northern traffic—that is, the traffic north-west of Mungindi? A line north of Moree will take you up between Kunopia and Boggabilla. The produce you would get from that part of Queensland would not be worth very much to you. It is very barren, scrubby country right through that part.
1073. So that if the paying capabilities of this line have been based upon the probability of getting more trade in that direction, you do not think that those anticipations would be realised? It would bring more trade, certainly.
1074. But if the authorities are depending upon getting that trade to any great extent, you do not think they are warranted in so doing? They certainly would have whatever traffic there was, but of course we do not know what the Government of Queensland may do.
1075. Have you been up there lately? I have been at Kunopia, but not lately. I was there in 1886.
1076. There may have been some alterations there since that year? There may have been, but it is not nice country out there. But coming in from Mungindi a considerable quantity of traffic would come from about Mungindi, but not north.
1077. Have there been any very serious floods during your residence;—have the floods at any time affected Millie? Not to my knowledge.
1078. Have they affected the travelling stock route to any appreciable extent? Not to my knowledge. There are bridges over all the creeks but one.
1079. What other facts do you desire to give the Committee? I wish to refer again to the eighty-three selectors from whom I obtained the returns.
1080. Whereabouts are the selections situated? The selections are within 50 miles of Millie, some to the west and some to the north-west.
1081. On what creeks are they situated? A lot of them are on the Moomin Creek and Thalaba Creek, and then of course on the country back from those creeks.
1082. Has there been any large increase in their number during late years? Yes; they are increasing every day.

- Mr. J. Halse. 1083. Is it likely that a very large area of land will be taken up when the leases in the central division are thrown open? I am sure there will.
- 22 Nov., 1893. 1084. Especially on the banks of the creeks? Yes; between Moomin Creek, the Mehi; and the Thalaba.
1085. Will you continue your statement? Last year these eighty-three selectors shore 4,026 bales of wool, being equal to 718 tons, which, at 15s. 3d., the rate for 40 miles, would amount to £555 9s. The back loading which they received weighed 684 tons, which is equal to a freight of £521 12s. A number of these selectors have no sheep at present, but are going to put some on, and they have no back loading, and a lot of the returns which I received are incomplete. I think the revenue will be much larger next year and in every future year than it has been in the past.
1086. Always supposing that you do not get any droughts? We have to put up with the droughts.
1087. But the railway is always there? From the people who had sheep suffering in the drought-stricken country the Commissioners would derive a larger revenue than they would at any other time. It would be better for the Government and worse for the holders. As regards the large holders, who would be benefited between Millie and Angledool, three times as much traffic, three times as many sheep, and three times as much back loading would be derived from those large holders as would be derived by the railway from the eighty-three selectors.
1088. How far is Angledool from Walgett? I should think it is 100 miles.
1089. Does the Angledool trade come through Millie now? I believe so.
1090. All of it? I believe it would if the railway were taken there. Of course this is a little bit beyond my experience, and a witness who comes from Collarendabri will speak of that part of the country. The total revenue which I estimate would be derived from the eighty-three selectors by the railway would be £2,589 1s.; the revenue which they would get from the large holders in that direction would be £7,767 3s., and the revenue which would be derived from the towns of Angledool, Collarendabri, Mogil Mogil, Meroe, and Mungindi, £2,589 1s., and from passengers and mails, if it goes *via* Kerramingly, £1,000, or a total revenue of £15,945 5s., as against the revenue of £9,915, which is estimated by the Commissioners for the whole line. I am not a surveyor, but I contend that it is only 5 miles 48 chains further round this way.
1091. How do you arrive at that opinion? From a tracing which I obtained from the Survey Office. The additional length of 5 miles 48 chains, at a cost of £3,000 per mile, would involve an outlay of £16,800, and according to the evidence which was given in Sydney it would take £616 2s. 2d. per annum to keep that length in repair. On the "red" route there is no timber suitable for railway purposes to my knowledge.
1092. How do you know that there is no timber there fit for railway construction? I have been over the country.
1093. And as a bushman, you say that there is no timber on that line fit for railway construction? Yes. The timber which would be large enough is belar, but that is of a perishable nature, and could never be used for piles, or anything of that kind. Now, if you take a direct line from Narrabri to Moree, why should you not take a direct line from Narrabri to Collarendabri, and tap all that traffic?
1094. In your opinion, if a railway goes direct from Narrabri to Moree, a railway should go direct from Narrabri to Collarendabri? I believe it would take as much traffic as a railway to Moree.
1095. You would have two railways. Where would you propose to have your Collarendabri junction? At Kerramingly.
1096. Mr. Dawson.] You mean to say that instead of going to Moree you should go to Kerramingly? No; if a line should go direct to Moree a line should go direct to Collarendabri.
1097. Chairman.] Do you not want to put the thing in this way: That if the railway is to go direct from Narrabri to Moree there should be a junction from that line at Kerramingly to Collarendabri? Yes. According to the evidence which was reported in the Sydney papers, if the railway goes from Narrabri to Moree it will beneficially affect 7,000,000 acres. My opinion is that only 2,392,000 acres will be beneficially affected, and that the remaining 4,608,000 acres will be beneficially affected by a railway going more westerly. It will not be worth their while to use the railway. I have spoken not to scores, but to a hundred people at least, and they say that they will not use this railway, but will go through Bulleroi into Narrabri. There is a road through Bulleroi and Boolcarrol.
1098. If this railway is to be built subject to the betterment principle do you consider that the Land Boards and the Land Court will be the best tribunal for deciding to what extent the various lands are benefited? I could not say.
1099. Is it not a fact that the Land Boards and Land Court give general satisfaction in dealing with land questions, such as the fixing of the rents, and so on? I have experienced the reverse, especially when Mr. Copeland was formerly Secretary for Lands. The Land Boards do not always give satisfaction.
1100. Do you know of any other tribunal which would deal more satisfactorily with the application of the betterment principle to these holdings than the Land Boards and the Land Court? I cannot make a comparison, as there are no other tribunals in existence.
1101. If it is proposed that the Land Boards and the Land Court shall fix the various zones for the application of the betterment principle, do you not think that that would be a satisfactory way of determining the contribution of each person to the fund? I could not say how it would act.
1102. If, as you say, only 2,250,000 acres will be benefited by the "red" line, how does your contention pan out that if the railway is brought by the travelling stock route it will exercise an influence on trade 60 or 70 miles to the west? I can only go by what the people themselves say they will do. They say they will go by Bulleroi and Boolcarrol.
1103. Have you not already stated that the trade comes through Millie, towards the nearest point on the railway system—Narrabri from even as far as Mungindi? Most decidedly, when grass is scarce.
1104. Therefore, to some extent, the people of Mungindi have been benefited by the extension of the railway to Narrabri? They have come in by Meroe.
1105. If they have come in from Mungindi to Narrabri West, does not that prove that to some extent they have benefited by the extension of the railway to Narrabri? Yes.
1106. Consequently if they have benefited by the extension to Narrabri, ought not they to be included in the betterment area? I could not say how far the area extends.
1107. If the "red" line is constructed you think that instead of 6,000,000 acres being benefited or brought within the betterment area only 2,000,000 acres will be? Two million five hundred and fifty thousand acres.
1108. Will you resume your statement? I consider that not more than 20,000 fat sheep would be trucked at the stations along the "red" line—that is between Moree and Narrabri—in the course of twelve months.
- 1109.

1109. Have you an estimate of the number that would be trucked at Moree? About 211,555 fat sheep. *Mr. J. Halse.*
I also say that 33,833 bales of wool will be trucked at Narrabri, as before.

1110. Practically it would have no effect on the sheep which are now trucked at Narrabri? Yes; those trucked at Moree and along the line would have a material effect on the number trucked at Narrabri. Six hundred and thirty-four thousand six hundred and sixty-six sheep were trucked at Narrabri last year up to the 30th June. I reckon that not more than 10,000 bales of wool will be trucked at the stations between Narrabri and Moree on the "red" route; that 21,416 bales will be trucked at Moree, and that 33,833 bales will still go to Narrabri from this westerly direction—from round and about Millie, and even a few miles to the north. Sixty-five thousand four hundred and twenty-nine bales of wool were sent from Narrabri West for the year ending 30th June last. There is another important item to consider: From my knowledge of the country there is no water provided for any one who wishes to take his stock to these places. You cannot take sheep in the height of summer to these places and truck them without water. At neither station do I know of any deposit of water. That is one of my reasons for saying that sheep will not go to these stations. I would not take my sheep; in fact it would be cruelty to animals to do so. Now, at Kerramangly there is a Government tank of 12,000 cubic yards, a township marked out, with allotments ready for sale, a Court-house, police barracks, and a large reserve, originally 10,240 acres, but now about 5,000 or 6,000 acres, but nevertheless a valuable reserve for the future. I have been supplied by the selectors with the area of their holdings, the approximate cost of their improvements, the number of their sheep and cattle, the number of bales of wool they shorn, the number of stock they trucked, and the quantity of back loading they received. The first return shows that thirty-one selectors, on a total area of 127,040 acres, have made £37,580 worth of improvements; grazed 115,245 sheep and 1,201 cattle; shorn 1,739 bales of wool; trucked 35,000 sheep last year; and received 257 tons of back loading on the railway. The second return shows that twenty-six selectors, on a total area of 91,100 acres, have made £19,880 worth of improvements; grazed 60,960 sheep and 314 cattle; shorn 738 bales of wool; trucked 32,733 fat sheep; and received back loading to the extent of 141 tons. The third return shows that twenty-six selectors hold a total area of 132,810 acres. As regards the other particulars which I quoted, I may explain that from a number of the selectors included in this return no information has been received. But taking no notice of all the blanks, the return shows that these twenty-six selectors have made £32,258 worth of improvements; grazed 109,830 sheep and 1,576 cattle; produced 1,651 bales of wool; trucked 34,786 sheep; and got a back loading of 286 tons.

1111. Do you think that, in view of the trade to be drawn to this line from the north of Moree, with all these contributing sources, the people to the north should be asked to run 5½ miles more than is necessary for their purpose? If all the lines are to be run straight, probably it may not be right to ask them.

1112. Do you think the trade to the west is of such a volume that it would materially affect the revenue on this line? I am quite sure on that point.

1113. *Mr. Davies.* Would the selectors in whose behalf you prepared these returns be within a radius of 60 miles or 50 miles of this place? They are within 50 miles, principally to the west and south-west.

1114. Which is the nearest section that would be served by the "red" line? There is a selection within 3 miles of this spot, and a lot more at the back.

1115. Would these selections be served best by the "red" line? No; they would not be served by that line. I think that very few, if any, of those I speak of would use that line.

1116. How far would your selection be from the "red" line? About 15 or 16 miles.

1117. What distance from a railway, in your opinion, is a reasonable distance to serve a selector or pastoral tenant? A distance of 15 or 20 miles would serve if there was water for the stock; but if you send teams with wool, or take sheep and cattle, or went for supplies, the railway would be of no earthly benefit without roads, grass, and water.

1118. You do not regard 10 or 15 miles as a reasonable distance for a railway to serve a holding? As far as that is concerned, it is a reasonable limit.

1119. Would not the major portion of the selectors you refer to be served by the "red" line? No. A considerable number of selectors would be nearer a road going straight to Narrabri through Boolcarrol and Nowley.

1120. Which line is that? It is a road or reserve, but they go that way with stock and mails. There is a road running from Narrabri to Bulleroi.

1121. Do you wish to convey to the Committee the impression that the selectors and pastoral tenants within a radius of 25 miles would prefer to go direct to Narrabri, rather than go to a station at Woollabrar or Gurley? A lot of these would use the station if water and other conveniences were provided. It would require to be a good station, but I gather from the reports I have read that the station will be of a very light or trumpery character. The railway will be of no use unless there is abundance of water, not with a stretch of 15 or 20 miles. You cannot drive sheep on a hot day more than 5 miles.

1122. Is not the district through which the "red" line goes;—in fact is not the whole district between here and Moree well watered? I have seen the time when there was not a drop of water in the whole of the creeks. I have seen Big Bumble Creek so dry that you could drive tons across it.

1123. As regards the travelling stock route does not the same difficulty exist? There are Government tanks all along the route of from 12,000 to 20,000 cubic yards each.

1124. Do I understand that your primary objection to the "red" line is that the country is not watered? That is not a primary objection on the part of the whole of these selectors. Some of them are not near the direct route. They would not come up unless the line were nearer this way.

1125. Do I understand you to advocate that a line should be taken by the travelling stock route, although it means the construction of an additional length of 5½ miles at an additional cost, according to the estimate of the Engineer-in-Chief, of £500 a mile? Yes. Under the betterment principle the money will not come out of the pockets of the Government, but out of the pockets of the private individuals whose properties will be served. I contend that if that principle is to apply the line should go along the travelling stock route.

1126. Even if it costs £500 a mile more than the "red" line? Yes, as it will come out of our pockets.

1127. And even if it involves an additional haulage of 5½ miles? Yes: I am advocating the line principally on the ground that we shall have to pay for its cost under the betterment principle. I think that we should have a say in the determination of the route under these circumstances. Another reason

- Mr. J. Halse.** I would urge in favour of this route is that in all the country to the east of the "red" line there is no one to be benefited. At the top of Killarney, Edgeroi, and Gurley there is a dense scrub.
- 22 Nov., 1893. 1128. Would the "red" line go through that? It is not far to the east of that line.
1129. What is the character of the land through which the "red" line will go? For 8 or 10 miles where it goes through the scrub it is valueless.
1130. That is good land? It is good after it is made good.
1131. You admit that it is fairly good land? When it is cleared. It takes a tremendous lot to clear scrub; it is very thick.
1132. Do I understand you to say that the land through which the railway would pass is fairly good agricultural land? Except the scrub land.
1133. That, of course, excepting that it wants to be cleared, is good land? Yes. My contention is that a line by the travelling stock route would settle the country more evenly. There is no country to the east of the "red" line. Nearly all the top end of Gurley is purchased. I do not think that, for love or money, you could get 100 acres there that are not purchased. As regards Edgeroi it is the same.
1134. You also object to the "red" line, because it does not serve the settled portions of the district? Yes.
1135. But if it were taken by the travelling stock route it would serve a larger population? It would.
1136. But if the "red" line is constructed, and the leasehold areas are thrown open, will not a very large settlement be introduced? Yes; but a much larger settlement to the west of the line. To the east of this line there is no land to be thrown open. I do not believe that a full selection will be taken up on Gurley station at any price, not even when it is thrown open.
1137. Do you know what quantity of Crown lands will be available? There are about 215,000 acres on Gurley altogether.
1138. Is that the only Crown land which will be available? I am speaking of the runs through which the railway will go. There will be very little land to be obtained when the runs are thrown open. Gurley, for instance, is nearly all purchased. I do not believe that anyone will get a full selection on that station.
1139. If you had the decision of the question would you dispense with the construction of a line from Narrabri to Moree by the "red" route, if you are not to have a railway by the travelling stock route? It would be scarcely unselfish on my part to say I would not. I do not see why I should be asked that question. I am only speaking for myself.
1140. I want to know your opinion? I would sooner go to Narrabri West with my stock and wool, and for my back loading, than go to the stations you refer to under the circumstances.
1141. So that if the railway is extended by the "red" line, you will not use it? Unless, as I said, there is abundance of water, a place to turn out the teams, and an area thrown open for the stock, I could not use it.
1142. Although it would be within 15 miles of your station? Yes. You cannot work stock without water. There is no water to my knowledge; in fact I have never seen any water in Gehan Creek and Waterloo Creek except in flood time.
1143. Of the eighty-three selectors you referred to, how many would be served within a radius of 15 miles of the "red" line? Of this list of thirty-one selectors I suppose only two.
1144. Within a radius of 15 miles? They are all over 15 miles. There are only two out of this lot who are within 15 miles. I may be wrong, but that is my honest conviction.
1145. What would be the greatest distance of any of them? Fifty miles from Kerramingly.
1146. Where do they send their stock now? To Narrabri. There is a road coming in from Boolcarrol and Bulleroi.
1147. How long does it take them to travel that distance? I could not say. I have never gone through Boolcarrol. It must be further than going to Millie, because they all want the railway to come round by this way.
1148. I should like to know the exact distance? Mr. Hill who lives down there will give the exact distance.
1149. How did you obtain all this information? I sent a circular to each holder asking for certain information, and I compiled this condensed statement from the various returns I received. I have all the returns at hand.
1150. What is the nearest selection out of those in the first return? I suppose about 15 miles.
1151. What is the next? They average from 15 up to 40 or 45 miles, I suppose.
1152. If you had a railway within a distance of from 15 to 40 miles, would not that be a good service? My principal objection is that there is no provision for the stock at the station, and, consequently, that the stock would not go 20 miles to Woolabrar station. I am within 15 miles of the station, and I would not go there under the circumstances.
1153. It is not only a question of railway construction but also a question of water conservation? Yes; there are already tanks provided at suitable distances along the travelling stock route.
1154. Your statistics apply to a radius of 50 miles? No; to a semicircle. I am taking a radius of 50 miles on this side of the circle.
1155. You think that within that zone a railway at a distance of 25 miles would not be a satisfactory service? Not with the absence of water.
1156. No matter how close the railway is constructed? If you can go through in a day and back again—7 or 8 miles. Yes.
1157. Unless the line is constructed by the travelling stock route, you prefer that no railway should be constructed? Unless water is provided, most decidedly.
1158. You do not favour the construction of the "red" line? No.
1159. You would rather dispense with the line if it is to be constructed in that way, unless a supply of water is provided? Because in the estimate, nothing is said about providing water. There is no water at Woolabrar.
1160. *Mr. Suttor.*] What is the character of the scrub on the "red" line? It is thick belar scrub. I have not been up where the line is to go. I do not know whether it is above Dobikin.
1161. *Mr. McCourt.*] What is the size of your holding? Five thousand five hundred acres.
1162. How far is it from the nearest station on the line? I should think about 16 miles.
1163. Supposing you wanted to truck sheep at that station, how long would it take you to go? At 6 miles a day it would take two and a half days.

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1164. And you would have your sheep in Sydney in three days? I would, if I could get them there.
1165. You say you would prefer to go to Narrabri rather than truck your sheep at Woolabrar? I would prefer to go to Narrabri, using the tanks as I go.
1166. How long would it take you to truck sheep at Narrabri? Six days.
1167. As against two and a half days at Woolabrar? Yes.
1168. Is it not a most important thing to get your sheep into Sydney quickly? Not at all times; only to hit a market.
1169. As a rule do you not start your sheep to hit a market? Yes.
1170. Therefore the sooner you get them to Sydney the better? I do not think it makes much difference now when you get them there. Of course three and a half days would be a consideration.
1171. Is it not a most important thing to get your sheep into market in three days as against six days? Yes.
1172. Would you not pay a little extra for that accommodation or go to a little extra trouble? I would, but I would never starve my sheep.
1173. Do you not think that the Commissioners would provide water? They would want a large tank.
1174. Have they not provided tanks along the line anywhere? I am not aware of any. I have never travelled on the New South Wales railways.
1175. Supposing that they did provide a tank for Woolabrar station would you use it? Very likely I would.
1176. As against going to Narrabri? Yes.
1177. Therefore the line could be a benefit to you? If there was a water supply.
1178. In that case the people living out there would not object to be included in the betterment area? Certainly not, if you could make use of the railway.
1179. You say that if there is water you can use the line? Yes; but not all those people I speak of.
1180. You think that a number of the people you refer to would object to be included in the betterment area? If it goes by the route proposed I am sure they would.
1181. *Mr. O'Sullivan.*] How much a yard do you pay for tanks up here? I think the Government paid 1s. 3d. per yard for the tank at Kerramingly.
1182. What size tank would be required at Woolabrar station to serve the sheep traffic there? A tank of 20,000 cubic yards.
1183. One thousand two hundred and fifty pounds would not be a very large outlay to provide you with an absolutely essential supply of water? It would suit me right enough.
1184. So that we would only have to load up the cost of the line with £1,250 to provide the accommodation which you and others require? You would; but another little essential would be required—you would want to throw open an area for the stock to graze upon. I do not know exactly on what run Woolabrar station is situated.
1185. It is on Dobikin;—supposing a good reserve and a tank are provided, it would be an inducement to those who desire to truck their sheep to go to Woolabrar? If it is within a reasonable distance,—yes.
1186. Is the settlement trending out towards Collarendabri, or Moree? I think it is trending out towards Collarendabri—it will do when the runs are thrown open.
1187. Will there not also be land thrown open on the direct route between Moree and Narrabri? But there are no lands there to be thrown open. I do not believe you could get a selection on Gurley if it were thrown open to-morrow.
1188. The uncoloured portions of this map represent Crown lands in the possession of pastoral tenants; about two-thirds of the way up from Narrabri there is a good deal of the map uncoloured? That is exactly the same land that would be served by the travelling stock route too.
1189. One of your contentions is that a great deal of land would be taken up towards the Collarendabri district;—I ask, would not some land be also taken up on the direct route when the leasehold areas are thrown up? Judging by that map there would, but there does not seem to be a very large area of land there.
1190. But still there is room there for a considerable amount of settlement if the railway is constructed? There is.
1191. Do you notice a considerable number of reserves on that map marked green? I see none on Gurley.
1192. Do you see any on Killarney? There are some to the right which I would not like to have.
1193. Do you see any on Edgeroi? I do not see very much on Edgeroi.
1194. Do you see any on Dobikin? Yes; there is a little piece.
1195. You see a large reserve marked green? I think that is scrub. I see a forest reserve—Bekford's Forest reserve is all scrub land.
1196. You say there is very little on Gurley and very little on Tycannah? Yes; according to the map.
1197. But still there is a good deal of uncoloured land to the eastward which would be served by the "red" line? To the eastward is the Cap and Bonnet. All to the east of that is vacant. The top ends of Gurley, Edgeroi, and Killarney are all scrub.
1198. Is not the land to the eastward considered good agricultural land, although there may be scrub in some parts? I could not tell you. There are a few people on these portions who seem to drag out an existence. Whether it is bad agricultural land, or whether it is held by bad agriculturists, I do not know.
1199. Do you think that the construction of a railway near them would induce further agricultural settlement and make it a profitable industry? I do not think so, because they are near enough to Narrabri to make it profitable.
1200. By which route do you want the railway to go? I want the railway to come out round Kerramingly, whether it goes straight along the travelling stock route or round by Gurleigh Point.
1201. You will take it either way? Yes; as far as I am concerned.
1202. Your contention is, that that line would serve a larger population and open up some of the leasehold areas for future settlement? Yes.
1203. You dropped a remark as to the necessity for constructing a branch line to Collarendabri;—supposing a branch line were run out from Woolabrar or Gurley to Collarendabri, would not that serve all the country you spoke of? Yes.

- Mr. J. Halse. 1204. That would achieve the object you have in view? That would do right enough.
- 22 Nov., 1893. 1205. You are well aware that for a long time past there has been an agitation for the construction of a line from Narrabri to Collarendabri in preference to a line to Moree? Yes. There would be a lot of splendid country tapped by that line.
1206. I understand you to say that there are eighty-three selectors within a fair distance of Millie, and that all these selectors will be better served by a railway by the travelling stock route or Gurleigh Point route? They would.
1207. Are all these selectors likely to be permanent? I think so.
1208. Have many sold out lately? Not to my knowledge. They seem to be more inclined to stay. They are often taking up selections as opportunity offers.
1209. They are a fairly well-to-do class? Some of them are very well-to-do.
1210. Holding 2,560 acres each, mostly? Fully that. To give you an idea of the size of the holdings, I will quote the area of the first few holdings in this return: 5,260 acres, 160 acres, 2,560 acres, 2,560 acres, 4,560 acres, and so on up to 12,020 acres.
1211. Are you aware there are two roads from Narrabri to Moree, one called the "dry weather road" and another called the "wet weather road"? Yes.
1212. Why is the expression "dry weather road" used? It is a long time since I have been amongst sand, but as far as my memory serves me the sand bakes hard and forms a good road in wet weather.
1213. You refer to the mountain road to the east of the "red" line? Yes.
1214. Why is the road to the west of that line called the "dry weather road"? It is very hard for vehicles to get across this black soil when it is wet, even over the route by which the railway goes.
1215. The road you refer to goes close to the travelling stock route, and over a portion of it? Yes.
1216. Is that subject to inundation? Not to my knowledge.
1217. Is traffic ever stopped on that road? Not to my knowledge.
1218. Did you ever hear of any flocks of sheep being taken off by the floods? No.
1219. Did you ever hear of the mail coach being kept behind? Just at the back. That would not occur if they went by the stock route—by Kerramingly.
1220. There must be some great impediment on the road in wet weather, otherwise people would not go by the mountain road, which is much longer in wet weather. There are any number of people who, I do not think, ever go by the mountain road. It is only a portion of the people who travel by the mountain road.
1221. Which, in your opinion, would be the more expensive line to construct and maintain, a railway by the dry weather road, or a railway by the direct route? I do not think there would be much difference. For instance, coming along the travelling stock route, although it is black soil all along the plain at Bald Hill and Boggy Creek, there is any amount of ballast at Boggy Creek. There is, I suppose, one of the finest quarries of blue metal to be found in the colonies. If that quarry were utilised it would be just as easy to maintain a railway by the travelling stock route as a railway by the other route, where none of these things exist to my knowledge.
1222. If the Gurleigh Point route were taken out the line would go to Narrabri West, and avoid the town of Narrabri? Yes.
1223. Do you think that if the effect of that was likely to be disastrous to Narrabri, we should be justified in constructing a line which would start from Narrabri West, and possibly serve a few more selectors on that side, in preference to a line by the direct route, which would still serve Narrabri West and Narrabri? I really believe the Narrabri people are to blame that there is a Narrabri West to-day. They got up an immense petition to have the terminus where it is.
1224. Do you think we should be justified in giving the preference to the eighty-three selectors you refer to, with the full knowledge that we should almost destroy the trade of Narrabri, and possibly detrimentally affect Wee Waa? I do not see how it would be detrimental to Wee Waa. It would go 18 miles nearer to that town. This line is within 6 miles of Wee Waa, where it turns round.
1225. Does it not stand to reason that a rival town will spring up at that turning point, to the detriment of Wee Waa? I scarcely think so. I think they have an idea that it would be continued, in the near future, to Walgett. Sixteen miles of that line would be already constructed then.
1226. You are aware that the Government intend to construct a line from Mudgee to Walgett, *via* Coonamble? No.
1227. Mr. Dawson.] You said that there is no road from Millie to Woolabrar or Gurley? I will explain why I said that there is no road to Gurley.
1228. Is there, or is there not, a road? I really cannot say. Within the last month the station people took a team of bullocks out of there, and impounded them for being on the road. I scarcely think that the manager would have taken that course if there was a road.
1229. If the "red" route is adopted and a station is built at Gurley and Woolabrar, will it not be necessary not only for the people of Millie, but also for the people further west, to have a travelling stock route a quarter of a mile wide like the other travelling stock route to each station? A wider travelling stock route would be more beneficial.
1230. But a travelling stock route a quarter of a mile wide would be absolutely necessary? It would.
1231. Otherwise it would be better to go to Narrabri West? Yes.
1232. Because you have the Government stock tanks on the different routes? Yes.
1233. Is the country between Millie and Woolabrar or Gurley watered? Neither Gehan Creek nor Waterloo Creek is watered.
1234. Would it not be necessary for the people here and further west to have not only two travelling stock routes a quarter of a mile wide but also tanks at a distance of 6 miles apart? Yes.
1235. Two tanks on each road? Yes.
1236. In all four tanks would be required? Yes.
1237. What is land worth an acre here? I should think it would be worth a couple of pounds an acre.
1238. Is the land between here and Woolabrar or Gurley alienated, either by selection or conditional lease or freehold? I believe some of it is alienated.
1239. Are you aware that to provide a travelling stock route a quarter of a mile wide for a distance of 13 miles 2,080 acres would be required, and that £4,000 would be required to compensate the owners for the land? Yes.
1240. And four tanks of 20,000 cubic yards each, at a cost of £1,250 each, would mean an expenditure of £5,000? Yes.

1241. Would you be surprised to hear that half-a-dozen men who know this line well—timber-getters and other persons—have stated that one of its advantages is that not only can timber be got cheaper, but that very suitable timber can be got all along the line? I would be awfully surprised, because that is not the fact. There is no suitable timber along the line.

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1242. No ironbark? No; not one stick. I have never seen ironbark there.

1243. You are speaking of the land within a reasonable distance on each side? No; all the timber is in the scrub.

1244. Is there no ironbark at all at the foot of the Nandewar Range? I think not; only apple-tree, I think.

1245. You stated that you believe that if the "red" line is constructed the sheep, the cattle, and the wool from about Bulleroi and Boolcarrol will still go to Narrabri West? I believe it will.

1246. How far is Boolcarrol from Narrabri West? It is about 30 miles.

1247. How far is it from Boolcarrol to Millie? About 19 miles by the Black Point.

1248. As a matter of fact Boolcarrol is nearer to Narrabri West than to the nearest part of the line here? Boolcarrol would never come here.

1249. If the line were made to Kerramingly would you get the Boolcarrol wool or stock? I could not say. If it was equi-distant they would scarcely come here.

1250. *Mr. Ewing.*] When do you usually get your rains? In February and March we get our heaviest rains, but generally in February.

1251. When does the wool come in? From August up to Christmas.

1252. Therefore your wool is usually coming in in dry weather? Yes.

1253. You have no doubt on that point? No.

1254. Have you any knowledge that the Government intend to put down artesian bores? I did hear that an artesian bore was likely to be put down somewhere.

1255. Have you any knowledge of the formation of this country;—can you express any opinion as to whether the artesian bores will be a success? No.

1256. Have you been at Angledool? No.

1257. At Collarendabri? No.

1258. At Mungindi? I have been within 20 miles of that place.

1259. Have you been above the Darling? From top to bottom—from Beemery right down below Menindie.

1260. Have you been from Collarendabri down to Brewarrina? No.

1261. Therefore all the evidence you have given about that portion of the country is from hearsay? It is gathered from correspondence which has taken place since this question cropped up.

1262. Do you know that at times the mails have to be carried by horseback round by coach to Narrabri? I know that when there are heavy rains the black soil becomes so sticky that a vehicle cannot go through. But I do not think that since Mr. Chartres has had the contract the mail has been packed fifty times during the last three years.

1263. You believe it has been due to the incompetency of the mail contractor rather than to the roads? I do not say that. I would like to state that all the timber we use for our houses, from my place right down to Narrabri, comes out from Wee Waa and Pilliga. I have just received about 8,200 feet of pine from Wee Waa direct.

Mr. Alfred Hill, grazier, near Millie, sworn, and examined:—

1264. *Chairman.*] You are a grazier? Yes. I manage Mungyer Station for Mr. Vickery.

1265. *Mr. Ewing.*] Where is the station situated? It is 30 miles west-north-west of Millie.

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1266. Do you know the direct route from Moree to Narrabri? Well.

1267. Can any timber suitable for railway sleepers be found on that route? There may be a few trees, but not sufficient, I think, of the proper timber.

1268. Your opinion is, that sufficient timber of a suitable quality will not be found along that route? I am certain there will not. The ironbark is broad-leaved. It is good for fencing, but not for sleepers, as it is hollow. All the sleepers for the line will have to come from the other side of Narrabri.

1269. Up to the present the trend of traffic from the north-west portion of the district has been to Narrabri? Yes.

1270. You recognise that if the railway terminates at Moree, and not at Narrabri, it will have a great effect on that traffic? It will have a great effect on the traffic north of Moree.

1271. At present a man starting from Mungindi for the terminus of the railway is making for Narrabri? Yes.

1272. If the terminus is extended to Moree would Mungindi stuff go to Moree? Undoubtedly.

1273. Would Boggabilla stuff go to Moree? Undoubtedly.

1274. Would Kunopia stuff go to Moree? Undoubtedly.

1275. Everything to the north and north-west of Moree would go to the terminus at Moree? Yes.

1276. Therefore, in the interests of that section of the country, the more direct the route is the better? I presume it would be.

1277. A person coming from Angledool or Collarendabri is making for Narrabri West? Yes.

1278. All the traffic from Mogil Mogil would come by Collarendabri? The produce from Mogil Mogil might come through Millie.

1279. As a rule, it does not? Last season it came through Millie, simply because there had been heavy rains on the usual roads. It has been drier by the Millie road, but, as a rule, it does not come by this way.

1280. From Mungindi down to Mogil Mogil where would that stuff make for? All for Narrabri.

1281. You think Mogil Mogil stuff would come to Narrabri? I am certain it will.

1282. How far is it from Mogil Mogil to Narrabri? It is about 25 miles from Mogil Mogil to Collarendabri, and I think it is about 90 miles from Narrabri to Collarendabri.

1283. It is 115 miles from Mogil Mogil to Narrabri;—how far is it from Mogil Mogil to Millie? From 90 to 100 miles.

1284. Therefore a man from Mogil Mogil to the west making to Moree would pay 90 miles road carriage and 63 miles rail carriage down to Narrabri? They could not very well go to Moree, because there is a river without a bridge.

- Mr. A. Hill. 1285. The Angledool, Collarendabri, and Mogil Mogil traffic would unite at Collarendabri, and go direct to Narrabri West? Exactly, it would go within 30 miles of Millie.
- 22 Nov., 1893. 1286. That would come through your station? No; it would come within 8 miles of our station.
1287. Would that traffic make for Millie? No; for Narrabri West.
1288. It does not come down the travelling stock route? No; not by Millie as a rule. Last season when the country out that way was flooded a bit and was rather wet the major portion of the traffic came by Millie into Narrabri that way.
1289. Supposing the river were locked, and made navigable as far as Mungindi, where would the traffic go then? Probably to Adelaide.
1290. Always supposing that no tax is imposed on the produce;—geographically it would go to Adelaide? Certainly.
1291. If the river were locked do you believe that all the traffic of the country within 50 miles of the river would trend to the river and go to Adelaide? It would go to Bourke, but the railway and water carriage, together with extra handling, would make the freight tremendous. It would be cheaper to go into Narrabri than to take it down the river to Bourke, and thence by rail to Sydney.
1292. Eventually, if the river is made navigable from Mungindi it will go down the river unless there is something to prevent it from going that way? Yes.
1293. What effect will the extension of the railway to Moree have on the Queensland wool? I do not think it will make a great difference to the Queensland wool. It is bound to make some difference, but not a great difference, because the major portion of the Queensland wool comes in by Collarendabri now. Mind a duty of £2 10s. a ton is levied on wool coming over from Queensland into New South Wales, and I am told that it is likely to be doubled.
1294. Queensland wool which comes through Boggabilla or Kunopia at present to Narrabri would take the train at Moree—the effect of the railway would be simply the effect of the difference between the freight by carrier and the freight by train? Exactly.
1295. Do you believe that the direct route is the right route from Narrabri? Certainly not. It is radically wrong.
1296. Perhaps you will tell us why you think it is? Our station is 30 miles from Millie. This year I sold 30,000 sheep, sent away 1,500 bales of wool, and sold 3,000 cattle. If the railway comes to Millie all that produce would come to Millie, but I would never think of sending it to a station on the "red" line, because I would have to send it 50 miles by road to the station, and then have to pay the extra carriage by rail (40 miles) to Narrabri, making a total distance of 90 miles, whereas the distance from our station to Narrabri direct is 60 miles.
1297. How did you send it this year? Into Narrabri West.
1298. By which road? By Boolcarrol.
1299. All? A portion of it went by Boolcarrol to Gurleigh Point and up the river that way, and a portion went through Millie, but it is an unusual thing to send it by Millie. It is only in an exceptional case that it comes this way. In all other years it has all gone by Boolcarrol and Gurleigh Point.
1300. From Mungyer to Narrabri it is 60 miles; from Mungyer to Millie it is 30 miles; and from Millie to the railway it is—how far? I suppose it is 15 miles. I would have to send my stuff 45 miles from the station to the railway, and 40 miles by train to Narrabri, as against 60 miles by the road from the station to Narrabri West. It would not pay me to do that. It would not be feasible for me to send my stock or produce on to the straight line at all. I would prefer to send it to Narrabri West.
1301. In your opinion, does that also apply to the Angledool, Collarendabri, and Mogil Mogil traffic? Undoubtedly so. I am satisfied that they would not take advantage of the straight line, but would rather send their stock and wool into Narrabri West. But if a railway were constructed from Narrabri as far west as it could be taken, they would all take advantage of it. Within a radius of 50 miles of my place there are at the very least 10,000 bales of wool coming in.
1302. You realise, however, that it would mean a longer carriage for the stuff to the north of Moree? I think they could well afford to pay the larger freight, because the greatest number in this district would reap the benefit of the railway by this route.
1303. You believe the western traffic is more important than the other? Yes; the richest and best-populated portion of the district is the country to the west of Millie.
1304. Of course, the locking of the Darling would alter all that? It would do us no good. It would injure the country to do it.
1305. Have you any knowledge of the formation of this country—is it a cretaceous formation? I think it is doubtful.
1306. Are there any artesian bores in the district? None nearer than between Collarendabri and Angledool.
1307. Is that a success? Yes; but it was a doubtful bore when the Government put it down.
1308. It has been a success though? Yes.
1309. You regard any statement with respect to artesian water as being problematical? Undoubtedly so.
1310. *Mr. O'Sullivan.*] You appear to think that the arguments for the travelling stock route or Gurleigh Point route are very much stronger than the arguments for the direct route? Undoubtedly so, because so large a number of stock and so many more persons would be able to take advantage of the railway.
1311. Do you think a larger trade will be done by that route than by the direct route? Far larger.
1312. As a set-off against that route you would load the cost of taking wool and stores, say to the Queensland border, to which point the line may eventually go, by about 6 miles more carriage on the one side and 13 miles on the other;—do you think the advantages which are offered by the superior district to be served by this route would be counterbalanced by that disadvantage? Yes: from a national point of view I think that the greatest number ought to be served. In my opinion the policy of the Government should be to construct a railway for the convenience of the public and for revenue purposes. I think a railway brought westward in the direction you indicate would serve both these purposes.
1313. It must be palpable that a line by the Gurleigh Point route would very materially affect the welfare of the town of Narrabri? I think that is problematical. I think it is fairly arguable whether it would or not.
1314. Does it not stand to reason that if it starts from Narrabri West, and misses Narrabri, Narrabri will be left out in the cold, and become isolated? I do not think so. The railway must come past Narrabri at some time or other. I think that in constructing the railway the convenience of the public should be studied.

1315. At the same time do you think it is right and proper to take the line in such a way that it may utterly destroy a thriving town, simply to serve a few more people out in the west? But I do not think it will utterly destroy a thriving town. I think it is a very arguable point whether it will affect Narrabri in any form. Mr. A. Hill.
22 Nov., 1893.

1316. Would it not inevitably affect its trade? It might for a time, but it would get back to its proper position. It affected Singleton, Quirindi, and all those towns for a year or two, but they afterwards got back to their proper position. There is good country out to the east of Narrabri, and the Narrabri district would become self-supporting.

1317. Is there not a marked difference between the cases of Singleton and Quirindi, which are both on the railway line, and the case of Narrabri, which will be left 2 miles distant from the line? It would go through Narrabri West.

1318. It might create a town at Narrabri West, but if it did it would be to the detriment of Narrabri proper? I do not know. Two Farmers Unions' sales are held weekly in Narrabri, and the produce comes principally from the east of Narrabri.

1319. I ask you, as an old colonist, whether the general interest of the people would not be better served by the direct route, with a branch in the future, from Woolabrar to Collarendabri, to serve all the district in which you say greater progress is being made, than by this "boomerang" line *via* Gurleigh Point? No: I think that in the interests of the public, and from a national point of view, the proper line to construct is a line *via* Gurleigh Point. After a residence of thirty years in the district, and with a thorough acquaintance with its interests in every respect, that is my honest and firm opinion.

1320. *Chairman.*] Are you familiar with the country on the east of the "red" line? I know it well.

1321. Right up to the ranges? Yes.

1322. What is the nature of that country? It is not very good. It is scrub country generally.

1323. It is higher than the country on the west of the line, and consequently is likely to be drier? There is a greater rush of water at the heads of these creeks than there is down here. It comes down with a great rush, but spreads gradually over the land here. I may say that a larger number of sheep were lost in the vicinity of Gurley in the 1890 flood than about here.

1324. That implies that it would be more easy to bridge the streams where they are confined within the banks than to construct viaducts over a number of miles of flooded country? We cannot call this country, from here to Narrabri, flooded country.

1325. Your remarks seem to imply that there is a great rush of water at the heads of the creeks, but that to the west of the line the water spreads out and loses its velocity? There is such a large area for the water to spread over.

1326. I suppose you believe that the "red" line would be less expensive to construct than a line by the travelling stock route? If the Commissioners for Railways say that it will I will bow to their opinion at once.

1327. Do you think that if the "red" line is constructed, the land to the east will be brought into occupation for agricultural purposes? A portion of it might, but I do not think that any great area will be brought into use.

1328. You think that at the present time, and for all time to come, the land to the west will yield a greater quantity of produce than the land to the east? I am certain it will. It is different country altogether up that way. The richest country we have in the district is to the west of the "red" line.

1329. Do you know from how far north the present trade comes to Narrabri station? It comes from Bulamon station *via* Mungindi.

1330. How far is that into Queensland? About 25 miles.

1331. Taking a line more due north from Moree, how far into Queensland do you draw trade now? I think you only draw trade from one station further north—from Weiltown.

1332. How far is that inside the border? It is about 12 miles. I do not know of any other station further north from which you get a bale of wool.

1333. Suppose we extend the terminus to Moree, which takes the railway system 60 odd miles further north, do you think that we shall push our trade a corresponding distance further into Queensland? The country is all bad, and there is no stock there to push out for.

1334. You think we are drawing to our extreme limit—the Queensland trade? I do; there are only two stations between Mungindi and St. George now. The country on the Queensland side of Goondiwindi is all scrub, useless for sheep and all that sort of thing, and they get within 150 miles from Goondiwindi with their own railway.

1335. The great volume of Queensland trade would come in, *via* Collarendabri? You get a tremendous quantity of Queensland wool by that way, whereas you get a comparatively small quantity by Mungindi and Goondiwindi.

1336. You think that if the railway system is extended it should go in a westerly direction rather than in a northerly direction, towards Collarendabri rather than towards Goondiwindi? I consider that from the nature of the country, and the considerably severe floods that have occurred in that portion of the border country between Moree, and Mungindi, and Goondiwindi, it would be impossible or nearly impossible to put a railway out there. I may say that in 1890 two or three stations adjoining Mungindi lost 200,000 or 300,000 sheep by floods alone.

1337. Do you think that the extension of the railway to Moree is likely to greatly increase the products of our own territory between Moree and the border, or is that country fully developed now? It is fairly fully developed.

1338. Is it capable of very much expansion? If the leases are thrown open I think it is fairly capable of expansion.

1339. To the extent of 100 per cent. more than it is developed? I should say about 50 per cent. would be the greatest expansion which could be expected.

1340. If we are to look to future development in the direction of Collarendabri, and the trade to Queensland is not likely to be increased, and within the border trade is likely to be increased by only 50 per cent., does not that point to the desirability of only extending the line as far as Gurley station or Kerramngly, and branching off with a line towards Collarendabri? No; to my mind it points to quite the opposite thing, because the branch line would be constructed at a right angle to the main line.

1341. If you construct a line to Gurleigh Point, and from Gurleigh Point come within a mile or two of where we stand, you would get all the Waigett traffic, all the Pian Creek traffic, all the Thalaba Creek traffic, and

- Mr. A. Hill. and all the Moomin traffic? I may say that on our stations within the last two years 80,000 acres of land have been alienated, and not one of these selectors would derive a particle of benefit from the "red" line, while they would derive an immense advantage from a line *via* Gurleigh Point.
- 22 Nov., 1893. 1342. If your present contention is correct, then a line should be constructed from Narrabri West, *via* Gurleigh Point, to a point not further north than Millie, and then branch off towards Collarendabri? No; it should branch off from Gurleigh Point.
1343. That would leave Millie out? No; it would go on to Millie and Moree.
1344. Does not Collarendabri lie almost due west from Millie? Yes; about 80 miles west.
1345. Therefore, if you are going to Gurleigh Point, Collarendabri from that point would lie in a north-westerly direction? I think it would. What I propose is a line to go from Narrabri West, *via* Gurleigh Point, and the travelling stock route to Moree, with a future extension from Gurleigh Point to Collarendabri. I think it would be better to take the Collarendabri branch further north to escape the floods on the Barwon. In my opinion, the line from Gurleigh Point ought to come within a few miles of the west of where we are.
1346. Would not that be doing what you said just now was objectionable—would it not be taking the line at a right angle from Kerramingly to Narrabri? No; it would not. It would go from Gurleigh Point to Collarendabri, and not from Millie.
1347. You have been pointing out that the volume of trade now is all west of Millie? Yes.
1348. And that it is towards Collarendabri we ought to look for an increase in the volume of our trade from the Queensland border? Exactly.
1349. If that is so, why should we go any further than Gurleigh Point in this direction—why should we not aim for Collarendabri, *via* Gurleigh Point, from Narrabri West, instead of going up north? I believe there is a difficulty on account of the floods in getting to the Barwon about Collarendabri.
1350. Therefore you propose to go further north with the view of escaping the flooded country? Yes; and by going further north bringing it nearer to Moree and certainly nearer to Millie.
1351. The Moree people would be better served, would they not, if the line were only extended, whether by the travelling stock route or this route, as far as Kerramingly? No; I think it ought to go to Moree.
1352. But if the volume of trade is not from the north, why should we run out that extra 20 or 30 miles of line? This country is unsuitable for making roads, and the cheapest possible road you can provide between here and Moree is a railway. This is one of the largest and best pastoral districts in New South Wales. It has contributed an immense amount to the revenue, and it is really impossible for us to make a road except in the form of a railway.
1353. You do not anticipate that if a railway is made there would be any saving to the State in the way of a decreased subsidy? We have had nothing spent on the roads. If we had had our just due, like some districts have had, it would be a very great saving, but we have had very little money spent on the roads. The mud along the travelling stock route after an inch of rain is so tenacious that it is hardly possible to get along on wheels, while by going up into the mountains there is a large quantity of sand and gravelly country where they can travel.
1354. Are you aware that this district has consumed from £5,000 to £6,000 per annum in connection with its roads? The Liverpool Plains district or the Gwydir district, but not the district of which Millie is the centre. That is a very small sum, however, to spend in comparison with the large area of the district.

THURSDAY, 23 NOVEMBER, 1893.

[The Sectional Committee met at the "Royal Mail Hotel," Millie, at 9 a.m.]

Present:—

JACOB GARRARD, Esq. (CHAIRMAN).

The Hon. WILLIAM HENRY SUTTON.
The Hon. JOHN DAVIES, C.M.G.
THOMAS THOMSON EWING, Esq.

WILLIAM McCOURT, Esq.
EDWARD WILLIAM O'SULLIVAN, Esq.
HENRY DAWSON, Esq.

The Sectional Committee further considered the proposed Railway from Narrabri to Moree.

Mr. Alfred Hill, grazier, near Millie, sworn, and further examined:—

- Mr. A. Hill. 1355. *Chairman.*] I understand that you desire to amend your evidence? The line I advocate starts from Narrabri West, *via* Gurleigh Point; goes to the westward of Millie $1\frac{1}{2}$ miles, and then goes on to Moree, with possibly, in the future, a branch from Gurleigh Point to Collarendabri. I believe I stated last night that it was 35 miles from Mogil Mogil to Collarendabri. I find that the distance is from 15 to 18 miles.

Mr. Richard Cribb, drover, Millie, sworn, and examined:—

- Mr. R. Cribb. 1356. *Chairman.*] What is your occupation? I am a drover.
- 23 Nov., 1893. 1357. Have you been in the district long? I have been travelling on this side of the country since 1853.
1358. *Mr. Suttor.*] You desire to give some information with regard to the different roads that run from Moree to Narrabri? I never knew any dry-weather road. We have never had a dry-weather road.
1359. It was stated by a witness at Narrabri that there is a road known as the dry-weather road? I have not heard of it.
1360. It was also stated by this same witness that there is a road known as the wet weather road? I have been travelling this road off and on since 1853, and I was never stopped with sheep, except, of course, when the water was up in the creeks. You can always get sheep along from here to Narrabri.
1361. You are not prepared to admit that there is a dry weather road or a wet weather road? No. There is no main road under that range that you can travel. They can stop you at any point until you get past Edgeroi on to a piece of road they cut to go over to Rocky Creek. They can stop you on Gurley and Edgeroi.
1362. Have you ever travelled the travelling stock route from here to Narrabri in wet weather? Yes.
- 1363-4 And you have always been able to get along, except when the creeks were flooded? Yes. The water does not stop long.
- 1365.

1365. How long? According to what rain has fallen in the ranges. Sometimes you may have to wait two or three days—perhaps not more than twenty-four hours. Mr. R. Cribb.
1366. The delay is never very great at any time? No. 23 Nov., 1893.
1367. The travelling stock route, except in very wet weather, is virtually an open road for stock travelling from here to Narrabri? Yes.
1368. Do you know anything about the floods which have occurred in other parts of the district? Yes; I remember the floods in 1870 and in 1864.
1369. Did those floods do a great amount of damage? Yes; in places.
1370. In what places? There was some great damage done over here in the ranges. A man and his team were washed away.
1371. *Chairman.*] What do you call "in the ranges"—Terry-Hie-Hie? Between here and Gurley. Lots of sheep have been drowned on Edgeroi and Gurley by the great rush, and I believe a lot of sheep were drowned on Tycannah.
1372. In what floods were those sheep drowned? In the 1890 floods.
1373. That was the flood which was all over the Bourke country? Yes.
1374. That is the last big flood you have had? Yes. There is a great rush of water down from the mountains. The closer you get to the mountains the greater the force of the water. When it gets down here it spreads—it has no force.
1375. *Mr. Davies.*] What is the largest number of sheep you have ever taken to Narrabri? Two thousand seven hundred.
1376. How long did it take you? It is according to whether I have to push along or not. I could go from here to Narrabri in about five days very nicely, but as a rule I take about seven days.
1377. Would that be in fine weather? In any weather it can be done in seven days.
1378. You have never been absolutely blocked in taking your sheep through? The last time I was blocked it was on the plains on this side of Narrabri. I could not get over to the boiling-down works. You could not get near Narrabri.
1379. Is there very much difference between the character of the country along the travelling stock route and the character of the country in the mountains? Yes. Up there, if the creeks were up, the water would wash things away very quickly; but down here it spreads over the flat, and becomes shallow and quite still.
1380. Do you know anything about the proposed line? Yes; I know a good deal of the ground.
1381. Which route, in your judgment, would be the best one to serve the district? The travelling stock route.
1382. You are aware that the travelling stock route is a great deal longer than the "red" route? It is not a great deal longer.
1383. Supposing it is $5\frac{1}{2}$ or 6 miles longer, which route do you think would be most likely to afford the greatest convenience to the holders and settlers in the district? The travelling stock route.
1384. As regards the cost of construction, is there any great difference between the character of the country on the travelling stock route, and the character of the country on the "red" route? Yes.
1385. It is represented that the travelling stock route passes through rotten country, which is lower, and is therefore more subject to flood than the country along the "red" route;—is it not rotten country? You bog for a certain distance, but still you can get along. On the sandy country when it gets thoroughly wet stock will bog. You could not drive a railway over the rotten sandy country in wet weather.
1386. You know the country through which the proposed line goes thoroughly? Yes.
1387. It is much higher than the travelling stock route? It is higher in places, but not a great lot.
1388. But it is higher? In some places it is a little bit higher, but in other places it is level.
1389. You favour the travelling stock route? Yes; because it is better than the other.
1390. Because you think it would serve a larger number of free selectors and settlers? Yes.
1391. *Mr. O'Sullivan.*] I understand you to say that, although you have been here since 1853, as a drover, you have never heard any one talk of a dry weather road or a wet weather road from Narrabri to Moree? Not until I heard it mentioned last night.
1392. You, as a drover, have travelled principally the present road to Moree? I have travelled from Moree to Narrabri down the Thalaba.
1393. Has wet weather prevented you from travelling the present road from Narrabri to Moree? No.
1394. You are still able to travel the road in wet weather? Yes.
1395. If any one has sworn at Narrabri that a distinction is made between the two roads, and that the roads are known as the dry weather road, and the wet weather road, he has simply given his own opinion? Yes; I never heard of any such distinction being made.
1396. Do you know much of the country to the west of Millie, going towards Collarendabri? A good deal.
1397. Have you travelled that road very much? Yes; from here down to the Barwon, and up all those creeks.
1398. Does the country improve as you go out further? Yes.
1399. Are there more settlers out that way? There are a good few settlers and squatters.
1400. Are there many of them, whether they be squatters or selectors? There are a good few squatters and selectors all down Burran Creek.
1401. Is it the kind of country in which settlement is likely to go in the future? Yes.
1402. Is it more likely to go to that side than to the east side—towards the mountains? Yes.
1403. Do you know the mountain country pretty well? A good deal of it.
1404. Have you travelled through the scrub? Yes.
1405. Is the country near the scrub, or anywhere adjacent, fit for agricultural settlement? I do not think it is much good for agriculture. I never knew any one to cultivate at any of the stations.
1406. Is the country towards the mountains as fit for settlement as the country towards the west? Bless you, no.
1407. *Mr. Dawson.*] Do you know Terry-Hie-Hie? Yes.
1408. This "red" route goes through that station, does it not? There is the road, you know, which was marked and cleared to go to Rocky Creek. You can get on to Bowman's Creek, and get down to Terry-Hie-Hie.
1409. You know the country on the range? Yes.
1410. Have you ever known that country to be very wet or flooded? It gets very wet at times.

- Mr. R. Cribb. 1411. You say that when it gets wet it is even worse than the plains? Yes; it is boggy.
 1412. It is what they call "spewy" land? Yes.
 23 Nov., 1893. 1413. It is like mountain country generally in New South Wales? Yes.
 1414. *Mr. Ewing.*] Do you know the direct line which has been surveyed from Moree to Narrabri? I have never followed the line right through, but I know all the country.
 1415. Can you tell us definitely whether any timber suitable for railway sleepers can be got adjacent to the "red" line? No; you could not get a tree.
 1416. Within how far could it be got? You might get some at Bowman's Creek.
 1417. How far is that? I suppose it would be over 20 miles.
 1418. Bowman's Creek is a tributary of Wee Waa or Tycannah Creek? Yes.
 1419. Having an intimate knowledge of the locality, you are perfectly sure that there is no timber to be got within 20 miles of this line? No; you can get belar which is no good, and the coolabah is hollow.
 1420. Were you ever in Goondiwindi? Yes.
 1421. And Kunopia? Once.
 1422. Do you know the Queensland country beyond that? No; I do not know much of the country except going straight along towards St. George.
 1423. Is that good country? No; it is barren scrub with little ridges.
 1424. Taking a line from Mungindi on the west, and a line from Goondiwindi on the north-east, do you know that part of the country in Queensland lying between those two points? I do not know much about it.
 1425. You cannot say whether much traffic would come from that country? A good deal of stock comes from that way.
 1426. You do not know it intimately? No.
 1427. Supposing you were at Mungindi, and the terminus of the railway was at Moree, and you were bringing sheep down, where would you make for if the sheep were going to Sydney? Narrabri.
 1428. Even although the terminus was at Moree? Yes.
 1429. Why? Because there would be a better road to travel.
 1430. How far is it from Mungindi to Moree? I could not say exactly.
 1431. Supposing it were twice as far to Narrabri as it was to Moree? It would all depend on whether the owner of the stock was in a hurry to truck them or not. It pays the owners sometimes to delay stock on a good run.
 1432. But as a rule you make to the nearest place? If you want to hit a market quickly.
 1433. And if it is half the distance from Mungindi to Moree that it is from Mungindi to Narrabri, you would go to Moree, I presume? Yes, if it were only half the distance. If it were anything near the distance I would sooner go to Narrabri.
 1434. Do you know Mogil Mogil? No.
 1435. Angledool? Yes. A great lot of sheep come from Angledool.
 1436. More than come from the north? I think so.

Mr. James Fingleton, publican and grazier, near Millic, sworn, and examined:—

- Mr. J. Fingleton. 1437. *Chairman.*] What is your occupation? I am a publican and grazier, at Little Bumble, 5 miles off.
 23 Nov., 1893. 1438. *Mr. Davies.*] Are you an old resident? I have resided here forty-two years.
 1439. Then you know every part of the district? I believe so.
 1440. Are you familiar with the the "red" line? Fairly well.
 1441. You know the country through which it passes? Yes.
 1442. You know the travelling stock route well? Yes.
 1443. Is there much difference between the character of the country on the two routes for railway making? There is a little. There is a lot of timber on the "red" route, but there is no timber on the travelling stock route.
 1444. But the country is much the same? It is not quite so good on the "red" route as it is on the travelling stock route. There is not so much of the country—there is more barren land on the "red" route.
 1445. Do you think a line by the travelling stock route would cost very much more than a line by the "red" route? I do not think so. I cannot see why it should.
 1446. Is the land much lower and subject to flood on the travelling stock route? Not very much.
 1447. Would you be surprised to learn that the Engineer-in-Chief for Railways estimates that a railway by the travelling stock route would cost at least £500 a mile more than a railway by the "red" route? I am not aware of his estimate, but I know that there is any amount of timber fit for sleepers opposite Gurlough Point, whereas there is no timber on this line.
 1448. What is the nature of the timber you spoke of? It is no good for sleepers.
 1449. Is there no ironbark on the "red" line? Not fit for sleepers. You cannot get a pile for a bridge.
 1450. Your roads through the district are very indifferent? In wet weather they are.
 1451. Would it not be very costly to make roads through a district of this character? It would.
 1452. Would it not be much more practical and cheaper in the end to make a light railway through the district? I believe it would.
 1453. As a main road rather than a macadamised road? Yes.
 1454. Are you aware that the "red" line is estimated to cost £2,400 a mile? I read a statement to that effect in the newspapers.
 1455. Do you think a good macadamised road could be made for that money? I have had no experience in making roads or railways. I know there is nothing to make roads with hardly.
 1456. There is no ballast to be got? There is any amount at Galathra and Bald Hill.
 1457. What is the greatest flood you have had during your time? The 1864 flood was the greatest general flood we have had. It was all over the country.
 1458. To what extent was the travelling stock route affected by that great flood? In no way; I travelled it in 1864.
 1459. You got through? Easily.
 1460. Were you travelling with sheep, or were you travelling on horseback? I was on horseback. I have resided on this creek for fourteen years, and in 1890 in the height of the flood I could ride across the creek
 1461.

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1461. Where does it empty itself? Into Waterloo Creek.
1462. Where does Waterloo Creek empty itself? Into the Moomin or Thalaba; some goes into one and some into the other.
1463. The water distributes itself pretty well over the whole surface? Yes.
1464. It is no great depth? No.
1465. On the higher lands there would not be the same volume of water? There would be a greater rush of water and more danger.
1466. But the water would be more confined within the creeks? I believe it would. I know that in 1890. Terry-He-Hio station was nearly washed away, and a man was drowned. I live 20 miles below that station, and I had sheep on the creek, but I lost no sheep because the water spread out.
1467. Where were you located on the creek? Between here and Big Bumble.
1468. You suffered no inconvenience from the floods? No; I was on the travelling stock route.
1469. You think that there will be no great practical difficulty in constructing a railway along that route? I am sure there will not.
1470. You think that a line by that route will give more satisfaction and be a greater convenience to the people who are settled in the district? I think so; according to this map, it is all conditionally purchased land.
1471. You think it is by the map? All that blue tinted portion of the map is occupied land; every occupier is a *bona-fide* selector. I saw a statement to the effect that the selections had reverted to the original holders, but I assert that not 1 in 50 has.
1472. Can you tell us anything else which would be of service to the Committee? The travelling stock route between Moree and Narrabri is a good road with water? I think that stock will always travel that way, although the railway may go the other way.
1473. You think that notwithstanding that the railway may be taken direct from Narrabri to Moree the drovers and owners will prefer to go along the travelling stock route? I do. Messrs. Richards and Williams, of Tyree station, travelled their cattle from Moree to Homebush. A drover above my place, after delivering a lot at Homebush, started yesterday with another lot.
1474. What is the distance? Four hundred miles.
1475. What sort of stock? Fat cattle.
1476. Would it improve the stock to travel that distance? I do not know.
1477. How often in a year can they travel that distance with stock? They will always be able to go to Narrabri, because there will be no carriers on the road to eat the grass.
1478. *Mr. O'Sullivan.*] Do I understand you to say that all this alienated land, according to the map, is still in the hands of the selectors? I believe that not one out of every fifty has sold out. I could mention a great many of the selectors. I know that they are substantial and good holders.
1479. Have you ever heard of any of them selling out? No.
1480. As far as you can judge they are *bona-fide* selectors, and likely to be permanent? I am sure that a good many of them are. I could mention a great many of them if you like.
1481. Are they all doing well? As far as I know they are.
1482. They have nearly all the maximum area of 2,560 acres? Three times that area most of them have.
1483. But each man can have only 2,560 acres? Some have 10,000 acres.
1484. You refer to a family group? Yes.
1485. Everyone is anxious to get the full limit? Not a single one has a single selection.
1486. They find it more advantageous to work that way? Two thousand five hundred and sixty acres is hardly sufficient for a man to get a living on.
1487. Have they a ring fence? Yes.
1488. Are there dividing fences? Where they have to put them, and they are fully improved.
1489. In reality these large family selections are moderate sized runs? Yes.
1490. That is the kind of selection which appears to thrive best in the district? I believe so.
1491. Do you know the country to the west of Millie towards Collarendabri? Yes.
1492. Is it good country for grazing settlement? It could not be beaten.
1493. Is there likely to be rapid settlement out that way as soon as the leases are thrown open? I am sure there will.
1494. Is there any land left there which is open to selection? I suppose there is; but I have not noticed the maps.
1495. Why has that land not been settled upon? People are not going out there. It is too dry.
1496. Will not that cause operate in the future, as it does now, to prevent settlement? Yes, it may. Still they are settling every day on it.
1497. Why is it that we have all this uncoloured portion on this map? It is a long way back.
1498. Are they picking out the best pieces now? Certainly.
1499. I suppose that as soon as the leaseholds are thrown open they will make a rush for the best pieces there? I am sure they will.
1500. Therefore you anticipate some rush of settlement? Yes.
1501. You are quite certain in your own mind that this is *bona-fide* settlement, and that not more than two out of every 100 are dummies? Yes.
1502. Did you ever hear of any dummies up this way? Certainly.
1503. In which direction? Out on Liverpool Plains, and all along the Namoi, where they have all sold out.
1504. I mean away to the westward? I have heard of it there, but I have never seen it proved yet.
1505. Did any one else ever see it proved? I have heard of it, but I do not know that it has been proved.
1506. You do not think that this settlement is settlement by dummies, and that more than two out of every 100 are selling out? That is my opinion.
1507. *Mr. Ewing.*] When does the wool usually come down by the teams? It commences to come down about August.
1508. It comes down between August and Christmas? I have seen it come down in March and April.
1509. As a rule it does? Every year I have seen wool come down in March.
1510. When is the wet season here? That is very hard to say. We do not get rain regularly.

- Mr. J. Fingleton. 1511. Would it be wet from March to August, or from August to March? We never have too much rain here unless it is in the winter.
1512. Your winter months are your wet months? I suppose so.
- 23 Nov., 1893. 1513. Does the wool come down in the spring and summer, and is the winter, as a rule, the time you get your rain? I suppose we do get more rain in the winter. The wool, of course, comes in the wool season—from July to March.
1514. *Chairman.*] Is there anything else you would like to state? No.

Mr. James Duff, hotelkeeper and grazier, Millie, sworn, and examined:—

- Mr. J. Duff. 1515. *Chairman.*] You are a hotelkeeper and a grazier residing at Millie? Yes.
1516. How long have you resided in the district? About twenty-seven years.
- 23 Nov., 1893. 1517. *Mr. O'Sullivan.*] During your long experience have you ever heard people distinguish between these roads by calling one the wet weather road and the other the dry weather road? Never; and I have been droving stock for so many years.
1518. In a wet season, is it possible for stock and travellers to get along the road at a fair rate of speed? Without the slightest trouble, unless you come to a creek which is in flood, and you have no bridge.
1519. There is a road at the back, along the foot hills of the mountain, that leads to Moree? Yes. I have heard of it, but I have never travelled it.
1520. Is it travelled at all? Very seldom, I think.
1521. Do people go to Moree by that way? No. They simply go round there when they are not sure of getting grass here.
1522. Do they go to Bingara by that way? Yes.
1523. That road appears to join another road coming out from Moree at the back of Gurley? Yes; it is merely a road for grass in flood time.
1524. In flood time, does the water collect on this plain country here, and offer any serious impediment to travelling? No.
1525. Does the water lie long on the low land? Not to my experience, which extends over twenty-seven years. It might lie there for a few hours; twelve hours, or thereabouts.
1526. Can you say anything about the timber in this neighbourhood? A good deal. There is no timber at all in this district.
1527. Not even in the mountains? I mean between here and Gurley. All the scrub between here and Gurley and Dobikin I have searched, and I have had to ride perhaps half a day to get a couple of dozen posts for a gate.
1528. Where is the nearest timber to the eastward? The only place I have heard of is over the Namoi.
1529. That would be to the south-east or south? Yes.
1530. You refer to the Pilliga Forest? Yes.
1531. Is there any ironbark at all up here? Nothing worth mentioning; not as much as you can get a round post out of. I have ridden every inch of the country between Gurley and Dobikin and here. I have not ridden over the country between Gurley and Terry-Hie-Hie to a great extent, but there is no such thing as getting a couple of posts in this country.
1532. How far is the furthest point of Gurley from this line? I presume it is about 28 miles.
- 1532½. How far is Terry-Hie-Hie? We call it 35 miles from here.
1533. I understand you to say that from your long experience, having travelled on the other side of the line and knowing the country well, you are of opinion that there is no timber which could be utilised in the construction of a railway? Not one stick, I believe.
1534. You have never seen any ironbark here? Not a stick that would be of any use.
1535. I understand you to say that that applies to the country at least 13 miles from the other side of the line—would 13 or 15 miles from the other side of the "red" line take you to the foot of the mountains? I think it would take you very near the mountains.
1536. Have you been to the mountains? Right up to them.
1537. Is there any timber there? No; very little. I have ridden over the mountains before there was ever a fence between here and there.
1538. *Mr. McCourt.*] Have you had any experience in splitting railway sleepers? No; not a deal.
1539. Are you aware that the railway construction branch propose to use split sleepers instead of dressed sleepers on this line? No.
1540. Do you think that they can get undressed split sleepers delivered at 2s. 6d. on the line as they estimate? No; not in this part of the country.
1541. Not anywhere along the line? No; I am quite confident they could not.
1542. At what price do you think they could get split sleepers supplied? The timber is not there for them to get the sleepers.
1543. At what price do you think unadzed ironbark sleepers of the usual size may be supplied? That is out of my latitude. I am positive they could get no timber there.
1544. If you think that they cannot get the sleepers supplied at 2s. 6d., at what price do you think they can be got? I am not well enough up in the subject to say.
1545. You are well enough up in the subject to say that the sleepers cannot be supplied at 2s. 6d.—surely you can form an estimate of the price at which they can be supplied? I do not think they can get the sleepers for twice that sum.
1546. If two sleeper-cutters at Narrabri have sworn that sleepers can be supplied at 3s. in the rough, that statement is not correct, in your opinion? I do not believe it is.
1547. *Mr. Dawson.*] Could sleepers be got at 3s. for that line anywhere about Narrabri? I think there is plenty of timber to be got about Narrabri. There is a beautiful belt of timber in that district.
1548. You mean to say that they might get sleepers at 3s. from there, but that it is not possible to get them anywhere between Narrabri and Moree? Yes.
1549. The sleepers may be got elsewhere, and delivered on the line at 3s.? Yes, at Narrabri end only.
1550. *Chairman.*] You constructed a dam lately near your place? Yes.
1551. And the mail coaches run over it? Yes.
1552. Is that bank so consolidated that it is perfectly safe in wet or dry weather to run vehicles over it? Yes.

1553. Does any embankment of this black soil soon dry and make a hard road in wet or dry weather? *Mr. J. Duff.*
Yes; it is perfectly safe in wet or dry weather.
1554. If the railway is constructed along the travelling stock route, and a small embankment is thrown up, and 3 inches of ballast are put under the rails, do you think that will be sufficient to make a good, solid road for the train to run over? Yes. *23 Nov., 1893.*
1555. You do not think that in wet weather 3 inches of ballast would disappear into the embankment? No.
1556. What other traffic goes over the dam? A lot of loaded wool teams.
1557. In wet weather does it cut up very much? No.
1558. Your experience is that if the railway is taken by the travelling stock route with an ordinary embankment, and with 3 inches of ballast, it will be sufficient to secure the safe running of the trains? Yes.
1559. You have had a large experience in dealing with black soil? I have.
1560. Although your water supply depends largely on the dam, you have no hesitation in allowing vehicular traffic to pass over the dam in any weather? None whatever.
1561. If the "red" route is adopted, and you desire to use the railway, which station would be the most convenient for you—Woolabrar, Gurley, or Tycannah? I would certainly tap the line at Narrabri.
1562. Why? Because I consider that if the line runs straight through from Narrabri to Moree it will be ruination to the whole district.
1563. Would you prefer to go 40 odd miles by road to Narrabri rather than go 15 miles to the "red" line? I would; because the difference in carriage by team would more than compensate for difference in distance to railway station, and a distance of 20 miles more or less is of little account by team though expensive by rail.
1564. Is not that rather like cutting off your nose to spite your face? No. I consider it would be ruination if the line went under those mountains, as the country is of no use to anybody.
1565. But you must be utterly ruined now, when you are 40 miles away from the terminus, if you call 15 miles away from a line ruination? I would tap the line at Narrabri.
1566. Is there not a good deal of sentiment in that statement;—is it reasonable to suppose that you would not avail yourself of a railway within 15 miles of your door? No.
1567. *Mr. Dawson.*] Why would you go to Narrabri? I often send 8,000 or 10,000 sheep from here in a year, and if I had stock to go I would prefer to send them straight to Narrabri.
1568. Surely you can give an intelligent reason for that preference;—is not this the reason—that if you went to Narrabri you would have water all the way, and that if you went the other way there would be no water? That has something to do with it. On one route I would have water and a travelling stock route, but on the other I would have neither, unless it were provided.
1569. Where was the timber got for the different culverts and bridges between Narrabri and Moree? I think it was got out of the district—at Boheena, on the other side of Narrabri.

Mr. John Hannan Murphy, grazier, near Millie, sworn, and examined:—

1570. *Chairman.*] What is your occupation? I am a grazier, residing at the Jews Lagoon, 9 miles to the south-west of Millie. *Mr. J. H. Murphy.*
1571. How long have you resided in the district? About twenty years. *23 Nov., 1893.*
1572. *Mr. McCourt.*] What is the size of your holding? Between my family and myself we hold a little over 30,000 acres.
1573. Is it all selected land? Ten thousand acres were purchased, and 20,000 acres were selected.
1574. How many are there in your family? I have only three children living with me, and three children are married.
1575. Do you know the proposed routes for this railway? Yes.
1576. Which route do you think is the best to serve the whole district? If agreeable to you, gentlemen, I would make a remark before I give an opinion. About four weeks ago, I wrote an official letter to the Chief Commissioner of Railways, advocating the Gurleigh Point line in preference to this "red" line.
1577. For what reasons? Because I consider that it would be more suitable to this large district, and more beneficial to the Colony at large.
1578. Would it get more traffic or serve more people? It would get more traffic, and it would serve more people. On the eastern side of the "red" line you have Gurley station. There is very little land of any use to a person on that run, it is all useless country. All the valuable land on that station has been secured. Twenty years ago I made a large dam for the station, and then, to my own knowledge, all the valuable land had been taken up by purchase and selection—nine-tenths of the station. I consider that if the "red" line is adopted, the purchase of the land through Gurley, Killarney, and Tycannah, would cost much more than the construction of the line is estimated to cost.
1579. Do you know what the resumption of the land is estimated to cost? I consider that the estimate is exaggerated. I do not consider that one-sixth of it would be of any use to the public, because all the good land lies on this side.
1580. Would not a considerable portion of this land go through reserves and Crown lands? Yes; but it is worthless.
1581. You say the resumption of the land will cost as much as the construction of the railway? I believe it will.
1582. Do you notice that for the most part this line goes through Crown land? That Crown land is worthless.
1583. Therefore no land will be required to be resumed;—are you aware that it is estimated that the land along the line will cost only £7,000? I do not know. I know that their estimates are not always correct.
1584. Would not the Gurleigh Point line be more expensive than the "red" line? It would be much less expensive, because the facilities it offers for railway construction would reduce the expense. It has a supply of suitable timber for sleepers and the railway fence between Gurleigh Point and Baradine.
1585. The "red" line is not to be fenced, therefore, it would be so much cheaper? But it will require sleepers.
1586. Have you any other reason for supporting the Gurleigh Point line? Yes. For the last fourteen years I have been calling for improvements to be made on the road. We have never got a shilling spent

Mr. J. H. Murphy. on the road between here and Narrabri, but we always got the promise of a railway. This projected line it appears, however, is to be placed in the scrub 20 miles out of the district where there is no valuable land worth speaking of.

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1587. If the "red" line is constructed, will you use it? Never.

1588. You would still continue to go to Narrabri? I would go on the main road such as it is.

1589. Even if it costs you more to drive your stock? I know that is the most expensive line.

1590. Supposing that it would cost you more to send your stock to Narrabri than to take them to a point on this line, you would still continue to go to Narrabri? If I were to send the stock to Narrabri, I should reduce the distance by the railway. If I were to take them to Gurley scrub I should have to pay for their carriage to Narrabri. I would prefer to take them direct to Narrabri.

1591. Have you any other statement to make? I consider that, owing to the great settlement of the people in this part, and the support which one and all would give to the Gurleigh Point line, it will pay 50 per cent. better than the "red" line. The "red" line would receive only what support will come from Gurley station and a few miles from Terry-Hie-Hie, whereas here during last August and September, when I was at the shed getting my sheep shorn, I counted as many as 40, 70, 80, and 100 loads of wool coming by this road every day in succession, which would support the line if there was a station at Boggy Creek. You could have another station at Big Bumble, and another at Tycannah. I know the whole district. I worked at Moree for three years. I worked on Gurley station for six months, making a tank. At that time they put down a large well to a depth of 120 feet, but the water was quite worthless. The water with which the tanks would be filled at night would be salty in the morning.

1592. What experience have you had of railway construction? I have ballasted miles of line.

1592½. You know the country through which the "red" line will pass? Yes.

1593. It is proposed to put only 3 inches of ballast under the rails,—will that be sufficient? There is a portion of the line which would take 9 inches.

1594. How long is that portion? It runs for a considerable distance through the scrub. It is sandy loose country; 10 miles would have to be consolidated according to the way I saw the line on the south and west constructed.

1595. But this is only a pioneer line? I know what it is. It will depend upon the burden which is placed upon it. In five years they may say that it will carry more and more until they make a smash of it.

1596. If it is proposed to run light engines at a speed of 15 miles an hour, will 3 inches of ballast do for the rest of the line? No. There is a portion between Gurley and Tycannah which is much more swampy and boggy than any other part of the line.

1597. That length of line will require how much ballast? It is a length of 9 miles. That part and the sandy reach through the scrub are the worse pieces on the line. No portions of the line will be so difficult to construct as those portions.

1597½. How much ballast would it require in your opinion? It might take 11 inches—5½ inches of 4 inch ballast and 5½ inches of 2 inch ballast—the ordinary quantity that is used on the permanent way.

1598. Do you know anything of the supply of sleepers in this district? I never did any of that work myself, but I have a good idea. I know that sleepers can be procured quite close to Gurleigh Point sufficient to construct the whole line, and perhaps a line from the border to the Colony.

1599. Supposing the "red" line is adopted, at how much do you think the Commissioners will be able to get sleepers supplied, that is, sleepers not sawn or adzed, but half round? It will depend upon the state of the labour market.

1600. When you speak of swampy country on this line, do you refer to Gurley homestead station or to Gurley railway station? The rotten country I speak of lies between Gurley head station and Tycannah, going in towards Moree. I could not drive a cart through this country with a light load.

1601. Are you aware that the "red" line is 6 miles west of Gurley head station? No.

1602. If it is, it would be on better country? It may, but the difference will be very little.

1603. Do you think the Commissioners can get half-round sleepers at 2s. 6d. each? I do not think they can get sleepers in any part of the Colony at that price unless they can get people to work at 3s. a day.

1604. At what price do you think the Commissioners can get sleepers? It depends on the size of the sleepers.

1605. The sleepers are to be split, half-rounded sleepers of the usual size? They should get sleepers of that kind at about 3s. It will depend principally on the inspector.

1606. If the line you want were constructed, how far would it be from your holding? I consider that the nearest part of the line would be between 8 and 9 miles distant.

1607. Are you aware that if the "red" line or the other line is constructed, it will be constructed subject to what is known as the betterment principle, and that you will be required to pay towards its construction, say, half the amount? If they construct the "red" line, I shall claim and insist that the people of this district shall be exempt from the application of the betterment principle.

1608. You will object to be included in the betterment area? Yes. But if they strike Gurleigh Point, I shall be quite agreeable to pay whatever may be required to the betterment fund.

1609. *Chairman.*] What about the other fellows to the east? That line is not useful to the public or beneficial to the Colony at large.

1610. *Mr. McCourt.*] The people to the east would be left out in the cold? Where are they; they are not alive yet.

1611. There is no settlement to the east at all, then? The land is not adapted to settlement. It is occupied principally by wallabies and kangaroos about Terry-Hie-Hie.

1612. In your opinion there will never be settlement about there? Not in my time, unless you put a tunnel through the mountains.

1613. You favour the Gurleigh Point route and condemn the "red" route? Unquestionably, because it will be a dead loss to the Colony at large. It will receive nothing to maintain it, but merely what it will get at Moree and from the country out towards Goodiwindi. But this line will be the best paying line in the Colony owing to the amount of settlement and land taken up.

1614. If the Commissioners estimate that by the construction of the "red" line, they will get traffic and goods to the extent of £12,000 a year, do you think that their estimate is a correct one? No. I consider they have been misinformed. If they had come here and made themselves practically acquainted with the requirements of the district, they would never have dreamt of putting a line direct from Narrabri to Moree.

1615.

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1615. If the Commissioners have reckoned upon getting the traffic of the people round your neighbourhood by the "red" line, they are mistaken? Not immediately around my neighbourhood but for 100 miles out north-west. If the "red" line is constructed, they will never go through the Gurley scrub; they will prefer to go straight into Narrabri.
1616. *Mr. Davies.*] You have a very large holding? A very small one, I consider, when it is divided into six or eight parts.
1617. Between yourself and your family you hold 30,000 acres? About that area.
1618. You have good reason then to venerate and respect the memory of Sir John Robertson? Sir John Robertson was a very good man, but I have very good reason to thank myself for attending to my business and leading a hard life for 40 years.
1619. How many sheep do you shear? It all depends on the season, and how many I dispose of—from 15,000 to 20,000.
1620. Where do you send your wool? To Sydney.
1621. Direct from Narrabri? To Newcastle by rail, and thence by steamer to Sydney.
1622. If the railway is extended as it is proposed, would you still continue to send to Narrabri? Unquestionably.
1623. What would be the difference to you as between the nearest station to you on this line and Narrabri west? There would be no difference to me, because the line does not come near my place. It would not be worth my while to unload the wool.
1624. How far would your holding be from the nearest station on this line and from Narrabri West? A station on this projected line would be about 10 miles nearer, but it would be much more expensive.
1625. The haulage is a question of no difference? Very little. If it were constructed to-morrow it would never have a load of wool belonging to me.
1626. Because it does not go through your property? No; in the interests of the Colony at large.
1627. Is it not the fact that because it does not go near your property you prefer to send your wool by team to Narrabri? I have been living for fourteen years in the expectation of getting a railway.
1628. I ask you is it or is it not a fact that because it is not constructed nearer to your property, you prefer to send your wool by team to Narrabri? I could not answer that question without perjuring myself, because the line would be a dead loss to the country.
1629. Where would you send your fat sheep to market? To Narrabri.
1630. Though it might be only 15 or 20 miles to the nearest station on this line, you would prefer to go right away to Narrabri? Yes; because I would save the extra carriage by the train.
1631. Does your stock improve by travelling? That all depends on the grass. If there is good feed you will improve them.
1632. Do I understand you to say that there is no advantage in getting your stock to market as early as possible—two or three days sooner than you otherwise would? If there is good feed I would prefer to send them by road to Sydney.
1633. Is it not an advantage to get your sales effected two or three days sooner and the money in your pocket? Of course it is an advantage if I require the money badly, but a delay of two or three days would make very little difference to any man.
1634. *Mr. Dawson.*] As a matter of fact, you may start your sheep, but not truck them until you get to Breeza or Gunnedah, on account of the market being down? Yes; and also on account of not being supplied with trucks. Lately I have had to keep them back for a week for that reason.
1635. *Mr. O'Sullivan.*] Do the people in this district run store sheep or fat-sheep? Both.
1636. They would not be likely to truck many store sheep? No. They are getting them boiled down.
1637. If they wanted to take them to another part of the country, they would drove them to Narrabri? Yes; perhaps the whole distance.
1638. Are there more fat sheep than store sheep here? Probably more fat sheep if they could only get them to market at a reasonable rate.
1639. You stated that you have seen from forty to seventy waggons a day come down this road from various parts of the country? They came up from Thalaba, and in to Narrabri station.
1640. From what districts? Principally from Collarendabri, Mungyer, and all those stations out at the back.
1641. Would not these teams, if there was a railway station within a distance of 15 miles, be likely to make to that station instead of going to Narrabri? That would depend on circumstances. If there were good feed on the road, possibly they would prefer to go to Narrabri. At the same time if a station holder sent his wool to a railway station the carrier would be compelled to take it there.
- 1641½. What rate do the carriers charge? There are various charges, according to the season. Their charges are very low this season.
1642. Do they charge at per day, or per week, or per mile? At so much a ton.
1643. They would not be likely to charge the same to convey wool from Collarendabri to Woolabrar, as from Collarendabri to Narrabri? I do not know.
1644. Would the teamsters charge as much to one place as to the other? They might not, because Woolabrar would be 15 miles nearer.
1645. Would they not receive an instruction from the grazier to take the wool to the nearest railway station owing to the smaller charge? They mostly do. It would depend on the railway charge.
1646. Would not that induce the traffic to make for Woolabrar, instead of for Narrabri? If they could get the railway to take it in at a smaller rate they would take it in to the nearest station.
1647. Would that traffic be likely to come to the proposed station at Woolabrar? It would all depend on the season.
1648. Is not the road by way of Gurleigh Point a very uncertain one for teams—the road which comes down from Collarendabri past Wee Wee and Gurleigh Point? I have never travelled that road.
1649. Is it not a fact that the carriers have, after arriving at Collarendabri, to go north to Mogil Mogil, and then come round through Millie to Narrabri? That I do not know.
1650. Do they not often do that? Not to my knowledge.

Mr.

Mr. John Vaughan Wilson, grazier, near Millie, sworn, and examined:—

- Mr. J. V. Wilson.
23 Nov., 1893.
1651. *Chairman.*] What is your occupation? I am a grazier, living about 12 miles to the west.
1652. How long have you been in the district? About fifteen years.
1653. *Mr. Ewing.*] Which, in your opinion, is the better line? The travelling stock route.
1654. You are not an engineer? No.
1655. Therefore you can give us no opinion worth having, as to the cost of construction? No.
1656. You do not pretend to offer advice in regard to the cost of construction? Certainly not.
1657. You deal, therefore, with the trend of traffic which will best suit the public? Yes.
1658. Do you know anything about the direct line; is there any timber on that route? I have been across the direct line in several places, but never along it.
1659. You cannot give us any definite information as to that route;—why do you think that the travelling stock route is the better route for the public, and for the better development of the country? I think the travelling stock route is the better route for all the western community, because it is a nearer point for all the traffic coming up, and as far as I know there is no accessible road to the other line, or water. I may say that I was managing at Bunna Bunna for Dangar Brothers for about ten years, and for the last four or five years very little traffic has come up this way. All the traffic from Collarendabri and thereabouts has come by Bulleroi, and gone in via Gurlough Point. If the line were constructed by the travelling stock route, I think it would draw nearly all that traffic to this point.
1660. You recognise that at present Narrabri, as the terminus of the railway, is the point to which they make? Yes.
1661. Presuming that the terminus was shifted to Moree, would there not be a tendency to make to that point if the distance were shorter? Certainly not. All the traffic from Angledool and Collarendabri, I think, would come by Thalaba Creek to this point.
1662. You think that even if the line were extended to Moree, the Mungindi men would still make for Narrabri? I daresay the Mungindi traffic would go into Moree to a very great extent; but the traffic from the west and south of Mungindi would come in here.
1663. Do you know the railway freights? No.
1664. What would it cost to take wool by team from Moree to Narrabri? I cannot say.
1665. In point of fact, you believe that a person who had got as far as Bulleroi would go into Narrabri rather than make to Gurley railway station? Certainly.
1666. You believe that consideration affects the whole of the western traffic? I do.
1667. You believe that the whole of the traffic south of Mungindi, if the direct line be constructed, would still make to Narrabri? Yes.
1668. Does it not strike you as a remarkable thing that a distance of 15 miles would make all this difference—that they would rather go to Narrabri than go to Gurley? Well, as I explained, if the railway were constructed by the travelling stock route it would be 15 miles nearer, but if it is constructed on the proposed route they would sooner turn off at Bulleroi, and go in by road than go the extra 15 miles from here.
1669. You believe they would rather come to Millie by Bulleroi, and so into Narrabri, than make for the nearest railway station, Gurley? Yes.
1670. You believe that if the “red” line is constructed the whole of the western traffic south-west of Mungindi would still go to Narrabri? I think it would.
1671. Do you know the Warialda district? I have been through Warialda several times. I do not know a great deal about it.
1672. What sort of a district is it between Warialda and Moree? It is not particularly good country, I should think. I have been through it.
1673. You realise that in bringing the line 12 miles in this direction you would saddle the whole of the northern and eastern portion of this area with the extra carriage over that length? No; not all the north.
1674. You advocate a longer line from Moree to Narrabri? Yes.
1675. All the trade which comes to Moree you would saddle with extra carriage? Most decidedly.
1676. You think, in the interests of the great volume of trade from the west, it is a fair thing to do that? Yes.
1677. Although you think it will not suit them quite so well? Yes; I think it is only fair.
1678. *Mr. Sutor.*] Where do you send your stuff now? To Narrabri.
1679. By which way? Sometimes it comes here, and sometimes we get permission to go through Boolcarrol, which is shorter.
1680. How many sheep do you shear? On an average, about 7,000.
1681. How many bales of wool do you send away? I think we sent away eighty-six bales.
1682. *Mr. Davies.*] Which station on the “red” line would be nearest to your holding? I suppose Woolabrar would be. I would be 22 or 23 miles from the station.
1683. If the line were to come by the travelling stock route you would be about 10 or 12 miles distant? A little over 12 miles.
1684. It would serve your holding very much better if the line were taken by the travelling stock route? Most decidedly.
1685. The settlement along the travelling stock route is much larger than the settlement along the “red” line? As far as I know, it is.
1686. In your own neighbourhood, and all round there? Yes.
1687. Do you know any good reason why it should be much more costly to construct a line along the travelling stock route than along the “red” line? I cannot see any reason, but I do not pretend to be an engineer-in-chief.
1688. But you know the country well? Yes.
1689. Is there much difference in the character of the country on each line? I do not think so.
1690. But it is lower land on the travelling stock route? I suppose it is.
1691. It must be lower? But very little.
1692. It is more subject to flood than is the higher land? I do not think so.
1693. You do not know of any great difficulty, as far as your judgment goes, in the construction of the line? I have been at Bunna Bunna for the last fifteen years. I have been sending stock in—I suppose as much as a good many round about here—and we certainly have never been blocked or had any stock lost on the travelling stock route.
1694. You have never suffered any inconvenience? No.
1695. How far would it be from your station to Narrabri by the travelling stock route and through Millie? About 40 miles.
- 1696.

1696. If the line is constructed by the "red" route it would be 22 miles from your station? Yes. Mr.
1697. So that there would be a considerable distance in your favour if you use the straight line? Yes; J. V. Wilson.
- as far as distance goes.
1698. Also as far as haulage and expenses are concerned? I do not think the expense would be as much to take our goods direct to Narrabri as it would be to take them by team to the "red" line, and then pay the railway freight to Narrabri. 23 Nov., 1893.
1699. There would be a difference of 10 miles? It may be 10 miles.
1700. On the round trip it is equal to 20 miles;—would not that be some advantage to you? I do not think it is 10 miles.
1701. But if it is, do you not think that it is some advantage to you? No; decidedly not. I would certainly send all our goods by team to Narrabri in preference to going on that line.
1702. You would scarcely use the line at all? I do not know that I would use it in any shape or form.
1703. Have you any other reasons to adduce in favour of a line by the travelling stock route? Yes; you can get on to the travelling stock route. It is a very good road for grass and water, whereas if you had to go across to the "red" line, I do not know that there is either grass or water on the way.
1704. Have you any other reason to assign why it should be constructed along the travelling stock route? I think it would serve the western community a great deal better, and it must be borne in mind that they represent a very large proportion of the population of this district.
1705. Would it serve the people of Moree as well as the shorter and more direct line? I do not know that it would serve them exactly as well, but taking into consideration the proposed deviation of $6\frac{1}{2}$ miles, I think they should suffer that deviation, and give the people of this western part a show.
1706. I gather from your evidence that, although a line by the travelling stock route may be $6\frac{1}{2}$ miles longer than a line by the "red" route, and may cost £500 per mile for its construction, you favour its construction? Yes.
1707. Mr. O'Sullivan.] You have a knowledge of the traffic from Collarendabri? Yes; a very fair knowledge.
1708. Is it a fact, as has been stated in evidence, that sometimes, when the lower road—the road by Wee Waa—is uncertain, teams and traffic go through Collarendabri to Mogil Mogil, and then make their way to Millie, and down by the travelling stock route? I have never heard that they do.
1709. Did you ever hear of any stock coming that way? Never.
1710. Is it a fact that Mr. Richards, of Rivorstone, sends his stock by that way? He may, but I never heard of any stock coming by that way.
1711. Mr. Ewing.] Supposing that the Barwon were snagged, and steamers could use the river, from how far east would stuff gravitate to the river? I know very little about that part of the Colony.
1712. Then you can express no opinion on that point? No.
1713. Chairman.] Is there anything else that you desire to add? No.

Mr. Frederick Charles Staveley, storekeeper, Collarendabri, sworn, and examined:—

1714. Chairman.] What is your occupation? I am a retired land surveyor, at present keeping a store in Collarendabri. Mr. F. C. Staveley. 23 Nov., 1893.
1715. How long have you been at Collarendabri? I have not been permanently residing in Collarendabri more than four or five years. I have been in the district about thirteen years. I know the district thoroughly from one end to the other.
1716. To what point does the trade from in and about Collarendabri now gravitate;—does it go down the river or does it go to the nearest railway station? To Narrabri West.
1717. Does the wool and live stock come through Millie? Not generally; by Bulleroi, and as direct as possible to Narrabri. We have what we call a direct line of road, and the coaches are travelling on that line now. I think the traffic generally comes in that direction.
1718. The ordinary road round from Collarendabri to Narrabri West is very little used, but the travelling stock route between the two points—which is more direct—is now used by the travelling stock and by the mail coaches? I think so.
1719. The ordinary road between Collarendabri and Wee Waa makes a considerable detour to the south-west? Yes.
1720. And the road now used—the travelling stock route—is the more direct? Decidedly.
1721. Does the whole of the trade of the Collarendabri district go to Narrabri West *via* Wee Waa? Not *via* Wee Waa, but *via* Nowley.
1722. Nearly all your trade comes from Collarendabri to Narrabri West *via* Gurleigh Point? I think so.
1723. Is there any trade or stock coming from Collarendabri *via* Millie to Narrabri? No.
1724. What proportion of the trade, alive and dead, do you think, comes *via* Millie as against *via* Gurleigh Point? I should think very little.
1725. Would it be an eighth? I should not think 5 per cent.
1726. Ninety-five per cent. of the trade of the Collarendabri district comes to Narrabri *via* Gurleigh Point, and 5 per cent. comes *via* Millie? Possibly; but that is an approximation.
1727. How do you account for that 5 per cent. coming *via* Millie? I do not know. I said 5 per cent., but that is only mere guess on my part.
1728. Practically the whole of the trade comes *via* Gurleigh Point? That is so.
1729. If this railway were constructed, bringing Millie within 15 miles of a railway station, do you think the Collarendabri traffic would go *via* Millie then? I do not think so.
1730. You think they would continue to use the old road *via* Gurleigh Point? I think so. I have some memoranda which I desire to place before your Committee. I represent the Upper Barwon Progress Association, and in this matter, of course, I am representing the whole district.
1731. Will you be good enough to make any statement you desire to make? This proposal came upon us very suddenly. We had not time to make any preparation. As soon as we got seized of the matter, a meeting of our association was called, and a good many of us met and talked the thing over. I am informed by all the people living out there that if that particular line is constructed (the "red" marked line) our trade will still continue to go to Narrabri West without any exception. We have a number of sheep on nearly all the places in our neighbourhood, and from these sheep, of course, a great deal of wool comes.

- Mr. F. C. Stavcley.
23 Nov., 1893.
1732. Taking what place as a centre? I am taking in the country from Millie to Angledool. We wish to show that nearly all the traffic I have mentioned would not go to the parallel line, but would go on to Narrabri West.
1733. You have prepared a return showing the stock on the runs in what you consider is your district—the wool sent away annually and the inward goods? Yes.
1734. Will you indicate the boundaries of your district? The district embraced within this return is bounded approximately on the east by Millie, on the north by Mungindi, on the west by Angledool, and on the south by about Dunglear.
1735. Would Collarendabri be about the centre of that district? Fairly central.
1736. Will you give the total number of the sheep? We have 1,336,000 sheep within a moderate radius of Collarendabri, and 1,500,000 sheep at the Angledool end, including nearly all the Australian Pastoral Company's sheep, that will come this way. We have 2,836,000 sheep in and somewhat beyond that district in Queensland. Reckoning twelve bales of wool to 1,000 sheep, we get an output of 33,960 bales approximately in the year. This output weighs 6,443 tons, allowing $3\frac{1}{2}$ cwt. to the bale, and it represents 1,288 loads of 5 tons each. Approximately we load outwards from Narrabri West, reckoning 3 tons for every 10,000 sheep, 849 tons or 170 loads. Then there are all the towns to be supplied. One of the storekeepers told me that he pays railway freight to the amount of £900 a year. If he pays that amount, others will do about the same, so that a considerable freight is derived from this source. It includes Collarendabri, Mogil Mogil, Goondablue, Mungindi, Angledool, and Goodooga, because their supplies would all come in our direction if certain things were done. With regard to the settlement in our neighbourhood, we consider that there are about fifty homestead leasees on the north-west side of the Barwon. We reckon that the average cost of their improvement is £1,000. The leases are not all improved up to the necessary requirements, but this is in course of being done, and they are all, as far as I know, *bonâ fide*. Then all the holders on the south side of the Barwon have full areas. We do not know the number of the holders, but there are a large number of people settled near Merkeadooe, on Thalaba Creek. I may state that the Land Board puts through about sixty cases each sitting at Collarendabri, and it comes two or three times a year. I hand in a return, showing the number of sheep on each station in the district.
1737. You think that if the line were so constructed that Millie would be the nearest point to that district, all the sheep and traffic from the district would come this way rather than go down *via* Gurley? I think so, because we simply want to get the nearest point to Narrabri.
1738. Are you aware that by the adoption of the "red" route the railway would be brought within 12 miles of the point at which you say it would be convenient for you to ship? Yes.
1739. Would that distance of 12 miles from the travelling stock route make all the difference between your using the railway and your not using it? It would, because when a man gets a load of wool or anything else on his waggon he can go a dozen or 20 miles, and it saves him the trouble of unloading. Besides, there would be only a very small amount saved in connection with the railway.
1740. Thirty miles of road carriage? Yes, as against railway charge; but once a man gets his load on it is very little trouble to move on with it.
1741. If the line were constructed *via* Gurleigh Point and the travelling stock route, to what place would all this trade gravitate—to Millie, or to Gurleigh Point? I suppose it would go to the nearest point if there were a station. What we have been asking is that there should be a station provided at the nearest point to the Barwon, and then a large station would be required. We have been asking for a railway direct from Narrabri to Angledool, *via* Collarendabri.
1742. Going out by Gurleigh Point? By Gurleigh Point and Nowley.
1743. If it has been suggested by a witness that the line from Narrabri to Moree should go *via* Gurleigh Point and the travelling stock route, with a possible branch in the future from Gurleigh Point to Collarendabri, do you think that would be just what the people in your district would like? Yes; they would like that very much, with this difference—that our line would not be a branch, but a main line. It has an immense area of splendid land and water prospects which no one knows the value of.
1744. In the meantime until it is decided to take the line into Collarendabri from Gurleigh Point your district will be fairly served by a line going along the travelling stock reserve which you would intercept at Millie? Just so.
1745. Is very much of the trade going down towards Walgett? Nothing at all.
1746. Is it not a fact that the navigation of the river has been improved very considerably of late? When the river is up, of course, there is some traffic, but I am unaware of any improvements.
1747. When the river was up the railway would be idle? I do not think so. There is no danger of the river keeping up all the year round unless locks are put in. If the river were locked and weired then a traffic would spring up in consequence of the watering of the land.
1748. Do you know if any of the trade which you have included in your district would gravitate when the line is constructed? Not a very great deal of it.
1749. Where does the Mungindi traffic go to now? To Narrabri.
1750. The removal of the terminus to Moree would not intercept that traffic? It would, to a small extent, but not largely.
1751. Is settlement going on pretty largely out your way? All around it is, but the town itself is not much yet.
1752. Is your district very subject to floods? No. We had 2 feet of water over the township once within the last century, I believe. Our place is free from floods, as a rule, although we have heavy ones sometimes.
1753. Mr. O'Sullivan.] You say your district is not subject to floods? Not largely, but they are heavy sometimes.
1754. Is that not the region where the great "warrambool" exists? There is a warrambool between here and Collarendabri.
1755. We have a report by Mr. Jones, in which he says that 40 miles out of 60 miles of road were under water between Collarendabri and Angledool,—was that so? Beyond Collarendabri and Moongoola there is what you may call a swamp with watercourse which is flooded sometimes. It is situated between Angledool and Moongoola on the 60-mile track-swamp and watercourse, but I think it is only shallow at any time, and not more than (say) 10 miles across. Horses and even the mail coach managed it nearly all last winter.
1756. Where does the traffic from Angledool go? Through Collarendabri mostly.
1757. Down to Narrabri? There has been more wool going through Collarendabri this year than anyone would scarcely believe was possible. It has been a most remarkable year for traffic.

1758. If the railway is constructed *via* Gurleigh Point at some point on that line all this wool would be shipped and the stock trucked? Undoubtedly most of it would be. A good many remarks have been made that stock is not always trucked at the nearest station by a long way. I get dozens of notices of stock, and many go right away to Rylstone to truck instead of going to Narrabri.

Mr. F. C. Staveley.
23 Nov., 1893.

1759. *Mr. Ewing.*] The end in view is the development of the country? Decidedly.

1760. You, as a Collarendabri man, I gather, would bring the railway to Collarendabri, and put weirs or locks on the Darling? And the Barwon—yes; and extensive settlement would follow.

1761. Supposing that were done, where would the traffic go? We should not pray for a line, but should demand a direct one to Narrabri, and then a great deal would come this way.

1762. Supposing the Darling were locked, would the produce of the district go down the river? Not much of it. Why should it go right round to get back to Sydney or Newcastle?

1763. Are you aware that from Bourke, or rather further up the Darling, wool goes to Adelaide? No; it goes to Bourke, and is sent on to Sydney.

1764. You do not believe that any locking of the Darling would take the produce of that portion of the district right past Bourke; you believe it must develop by railway communication? It must be benefited by the locking of the river, and by railway communication. The district has a great future before it.

1765. You believe that if the river were locked the produce of the district would not go down the river? Not much; for the river would of course be worked continuously.

1766. What is the good of locking the river then—to get water to put on the land? Yes; I am a great irrigationist, and have been for many years.

1767. Not with the idea of using the river as one of the highways of traffic? No; I am not in favour of locking the river for navigation, because I think we have a better use for the water.

1768. You have stated that a tremendous quantity of Queensland wool has come through Collarendabri, *via* Angledool, this year;—what effect did the export duty on Queensland wool have on the traffic? I do not know. All I can say is that we have had an immense traffic—more wool than ever we thought would have gone down this way.

1769. Notwithstanding the imposition of a duty on wool by the Queensland Legislature? Perhaps it occurred before the duty was imposed. Personally I was not aware there was a duty.

1770. Has wool come very recently from Queensland? Not necessarily from Queensland. We get nearly all the company's station wool.

1771. *Mr. O'Sullivan.*] Is it a fact that steamers are going up to Collarendabri from Bourke and taking wool down to Bourke? Not from Collarendabri. The latest steamers have gone up to Walgett. They have not gone beyond Walgett for the last four months. The last wool taken down was from Dungaleer. Mr. Campbell told me that he sent all his wool down by that way. It has cost £7 10s. to get wool to Sydney.

1772. Your contention is that all the wool and all the stock go to Narrabri? Yes.

1773. *Mr. Ewing.*] Do you know the river rates per ton for carrying wool? I have heard of them.

1774. Can you get them for the Committee? I think I can. I think the rate is £2.

1775. *Chairman.*] Is there anything else you desire to say? No.

Mr. William Duff, grazier, Millie, sworn, and examined:—

1776. *Chairman.*] Are you a brother of the proprietor of this hotel? Yes.

1777. What is your occupation? I am a grazier.

1778. Have you lived in the district long? Eleven years.

1779. What evidence do you desire to give? I will answer as clearly as possible any questions that may be put to me.

1780. Did you hear the other witnesses give their evidence? I did.

1781. Is there any other point which you wish to touch upon? Yes.

1782. Will you state the point? I have not heard any witness point out that in order to reach Woolbar station on the "red" line there are about 8 miles of scrub to go through in a distance of 13 miles. It is utterly impossible to ride a horse through parts of that scrub.

1783. Mr. Halse gave the Committee that information? I was not aware that he did. With regard to getting timber between Narrabri and Moree I have a thorough knowledge of the country, and I am prepared to state that between Narrabri and Moree, no timber can be got more cheaply than it can be brought from the other side of Narrabri on to this line.

1784. Have you ever been engaged in timber-getting? I have had a good deal to do with it.

1785. Have you ever done any sleeper-cutting? I have done a bit of splitting.

1786. From an intimate acquaintance with the country to the east of this line, you are prepared to assert that timber can be got quite as cheaply from Narrabri West railway station as from any point along the line? Far cheaper.

1787. Is there any other point you desire to bring out? No; only those two points.

Mr. W. Duff.
23 Nov., 1893.

FRIDAY, 24 NOVEMBER, 1893.

[The Sectional Committee met at the Court-house, Moree, at 10 a.m.]

Present:—

JACOB GARRARD, Esq. (CHAIRMAN).

The Hon. WILLIAM HENRY SUTTOR.

The Hon. JOHN DAVIES, C.M.G.

THOMAS THOMSON EWING, Esq.

WILLIAM McCOURT, Esq.

EDWARD WILLIAM O'SULLIVAN, Esq.

HENRY DAWSON, Esq.

The Sectional Committee further considered the proposed Railway from Narrabri to Moree.

Mr. James Cornell, builder, and Mayor of Moree, sworn, and examined:—

1788. *Chairman.*] What is your occupation? I am a builder, and I am also Mayor of Moree.

1789. How long has Moree been incorporated? This is the third year. The municipality covers an area of 12½ square miles, contains 200 dwellings, and has 214 voters on its roll. The capital value of the property

Mr. J. Cornell.
24 Nov., 1893.

- Mr. J. Cornell.
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- property within the borough is estimated at £110,494. The population is estimated at 1,285 souls. The metalled roads measure 8 miles 20 chains and the cleared roads 25 miles 60 chains, making a total of 34 miles. The revenue this year is estimated at £501.
1790. Is that independent of the Government endowment? Yes.
1791. What is the expenditure? It is between £1,000 and £1,100 per annum.
1792. Have you any debt? £500.
1793. It has been expended on your roads? On the drainage of the town principally.
1794. It is secured, of course, on the rates? Yes. It is payable in 1895, and bears interest at the rate of 8 per cent.
1795. Is it payable to a bank? To Mr. Hill, of Mungyer.
1796. Is it contemplated by the borough to raise a further loan? Not at present. We do not require any additional loan.
1797. How long have you lived in the district? Eighteen years last September.
1798. You have seen a considerable growth take place? I have.
1799. Has the growth been more marked since the incorporation of the town? Decidedly.
1800. Do you know the route of the "red" line? I know the country generally.
1801. Do you know whether the "red" route is less liable to flood than the route called the travelling stock route? That I could not say.
1802. Do you know which route would serve the largest present population? I think the "red" line would.
1803. Is it not a fact that the "red" line only goes through about four large holdings? Yes.
1804. Is it not a fact that there is a considerable population a little to the west of the travelling stock route? Yes.
1805. Does it not follow, therefore, that the travelling stock route would serve a larger present population than the "red" route? It is very questionable whether the travelling stock route would, but I may say that I know very little about the land.
1806. Do you know anything about the land to the east under the hills? Nothing whatever of the land between the Namoi and the Gwydir.
1807. Do you know anything of the country to the north-east or north-west of Moree? Nothing whatever.
1808. Do you know if there is any marketable timber within a reasonable distance of Moree? Yes.
1809. In what direction is it? Towards Warialda and the Terry-Hie-Hie Ranges.
1810. How far would that timber be from Moree or the nearest point on this line? To Terry-Hie-Hie, perhaps 35 miles, and to Redbank, at the outside, 37 miles.
1811. What is the nature of the timber? It is ironbark.
1812. Is it of good quality and abundant? I have not seen any from the Redbank, but I am given to understand that it is high-class timber—the best that can be obtained.
1813. You have not seen the forest itself, but have seen the product? From Terry-Hie-Hie, I have.
1814. You have been in the forest at Terry-Hie-Hie? Yes; I have been in the mill.
1815. Which would be the nearest station to Terry-Hie-Hie? I think Tycannah would be. The mill is on Bowman's Creek.
1816. How far in a straight line would it be from that particular station—25 or 30 miles? I think between 20 and 30 miles. I understood the mail man to say it was 25 miles.
1817. There is an abundance of good ironbark there? Yes; in the ranges; hardwood is to be found there too.
1818. Moree is supplied from there now? Principally. It has been for a number of years.
1819. With all its ironbark? With all its ironbark and pine. Pine principally is the local material.
1820. Do pine and ironbark occur in the same ground? Yes.
1821. Are there any other forests within a reasonable distance of Moree? Not that I am aware of.
1822. I suppose you have no fear of Moree suddenly collapsing during the next few years? That is scarcely likely.
1823. It would be very awkward for the State if it spent £150,000 on a railway to Moree, and the bottom then dropped out of Moree? It would indeed. I may state that this last year private buildings alone have been erected in Moree to the value of £25,000. Considering that it has been "reconstruction" year, I think you will admit that it is not very likely that Moree will have its bottom knocked out.
1824. You think that it is likely to go on? I have every reason to believe it will continue. There does not seem to be any abatement.
1825. Moree is the nearest town of any importance to the Queensland border? Yes; it is the central point between Narrabri and the border.
1826. Have you given any consideration to the question of the betterment principle? Yes; I read the remarks which Mr. Lync made either in the House or outside.
1827. Do you think it is a correct and proper principle to adopt? It appears to me to be a very just one.
1828. Do you think that the people of this district who will be brought within the betterment area which is depicted on that map will be willing to accept the principle? I have every reason to believe that they will.
1829. Have you heard of anyone who objects to the application of the principle? No.
1830. Because, for instance, the other fellow got his line for nothing? No; none whatever.
1831. They are sufficiently patriotic, as well as anxious, for the construction of the railway, to be willing to be brought under the betterment principle? Yes.
1832. Are the people of the district generally prosperous? I think so.
1833. You have a number of banking institutions here? Yes—three.
1834. Have the people credit balances or overdrafts? I can only speak for myself; they did not reconstruct with any of my money.
1835. You would rather not express an opinion as to the possible trade to be drawn from the north-west, but will leave that question to be dealt with by other witnesses? Yes.
1836. Is there any timber to be got nearer than the places you refer to which would do for railway sleepers—not sleepers almost squared and polished, but split sleepers half-round and undressed? I have every reason to believe that you could obtain sleepers much nearer than the places I am speaking of. I think you could obtain sleepers at Dobikin scrub.
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1837. You have had no experience in providing sleepers? No.
1838. Your ordinary pine is considered the best timber for building? It is the best grown in the Colony.
1839. It is impervious to the white ant? Yes.
1840. Are all these buildings which you said are going up being built of pine? Yes.
1841. The framework and everything? Yes. It is a splendid timber. It only wants to be introduced to lead to a great trade.
1842. Is it true that the greater part of the timber for Moree is supplied from the south and south-west of Narrabri? Not the greater part of it, but a lot of timber has come here from Narrabri.
1843. As Narrabri is some 70 miles distant by road, and the forests are from some 10 to 20 miles south of Narrabri, how is it that you get your timber from Narrabri and south of that place, when you have forests within 30 or 35 miles of Moree? The proprietors of the mills regulate that.
1844. There is a ring even in this part of the world? Yes, something similar. We can put timber in Moree from Narrabri at about the same cost as we can get timber from the local mills. I do not mean timber in its rough state, but in its wrought state. Timber after it has passed through the planing machine at Narrabri, can be landed here at from 20s. to 20s. 6d. per 100 feet, and it costs a like amount to land timber from the local mill.
1845. I suppose that is because they have better appliances down Narrabri way? I suppose that is the reason.
1846. If the railway is constructed Narrabri will be able to supply you very much more cheaply, and that will put your local forest out in the cold still further? Yes; but the local forest will be available for different places.
1847. We shall not be able to reckon on getting the products of this forest for the railway? It is a certainty that if you construct the railway more timber will come from Narrabri than from the local mills.
1848. We cannot reckon on the timber you refer to as being likely to contribute to the railway revenue? Only the timber coming direct from Narrabri to Moree. I have had timber come from Narrabri to Goonall, which is only 32 miles from here. It paid better to get the timber from Narrabri than from Moree.
1849. Do you think the people of Moree would raise much objection to the line being diverted nearer to Millie, so as to catch the trade from the west? It would increase the length of the line.
1850. The Engineer-in-Chief estimates that it will cost £500 a mile more to take the line by the travelling stock route, besides 6½ miles extra haulage for all time;—do you think the people of Moree, and the district generally, which will be served, would object to that? I should think they would. It would be a terrible handicap for them to bear.
1851. But supposing that the greatest volume of trade will come from the west of Millie, and that it is absolutely necessary to get that trade in order to make the railway pay, what then? Is it a certainty?
1852. I am supposing that it will be the case? I have no reason to see why it should be the case.
1853. You believe the trade of Moree, and the district of which it is the centre, is by far more important than any other trade? I think so.
1854. *Mr. Dawson.*] Have you been much about Millie? Yes.
1855. How far would it be from Millie to Gurley or Woolabrar on the "red" line? I have not been to either station. I have only been to Millie, and right along the road to Narrabri. I have done very little travelling.
1856. Do you know the character of the country between Millie and Gurley, or Woolabrar? No. I think it is similar in character to the country between Millie and Dobikin.
1857. Is there any scrub between those places? No, only a few belar trees.
1858. If it has been stated that it is 13 miles between Gurley and Millie, and 13 miles between Woolabrar and Millie, and that there are 5 miles of scrub to go through in that distance, do you think the "red" line would get this traffic, or would it go on to Narrabri? The scrub is nothing to speak of. You can drive a team through it anywhere. But I hope you will bear in mind that it is some seventeen years since I was there.
1859. Would it be necessary to provide a travelling stock route to these different stations? Really I could not give you an opinion. I know nothing about stock.
1860. The travelling stock route, that is marked green on the map, is about 6 miles longer than the "red" line;—if it becomes necessary to provide travelling stock routes and tanks for stock coming from Korrangly to Gurley, or Tycannah, or Woolabrar, do you think the people here would object to having the line taken by the travelling stock route, and paying the extra 6 miles carriage? The handicap is placed not only on the people here, but on the people beyond Moree.
1861. If you handicap them with an extra 6 miles carriage for all time it would mean a handicap of 1s. a ton? That is a big handicap on the enormous amount of wool which comes from the Queensland border.
1862. On the other hand, if the people coming to Millie and coming along the travelling stock route, had to go through country with fat cattle without a travelling stock route, and they went on to Narrabri, you would lose all that traffic;—which would be the better of the two? They would be no worse off than they are now. They have creeks there.
1863. Might they not be a great deal better off with a line by the travelling stock route? The question is would it pay any better to bring it by the travelling stock route—I really could not give an opinion.
1864. *Mr. Davies.*] In the event of the line being constructed by the direct route, you think it would be the means of developing additional trade? I am sure it would.
1865. Do you anticipate a very large development of trade? I think you can make sure that there will be no loss of £900, as is estimated.
1866. Do you know the length of the road you would have to travel with stock and produce? I have always understood that it is 75 miles.
1867. Have you travelled the road yourself? I have travelled from Narrabri to Moree by the main road, and also round by Millie, which is not a main road.
1868. Do you know anything of the traffic which would be likely to be served by a line from Moree towards the Queensland border? No.
1869. Do you know anything about road-making? Only from the experience I have gained in the Council.

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1870. The estimated cost of this line is £2,400 a mile;—do you know the cost per mile of an ordinary macadamised road? I should take it to be more than that sum.
1871. You regard a railway at a cost of £2,400 a mile as a very great advantage? Indeed I do. It costs 12s. 6d. to take a load of gravel—2½ cubic yards—to Tycannah, which is 12 miles from Moree, and the contract has to be a large one in order to get the gravel delivered at that price. That fact will give you an idea of what it would cost to make a road. There is no shingle suitable for road-making between Narrabri and Moree, except at the Bald Knob.
1872. Is there an abundant supply of this gravel? Any quantity here.
1873. The cost of gravel ballast for the line would be very reasonable? The Council have the gravel put on the road for 1s. 2½d. a yard.
1874. You have no broken ballast? This gravel makes splendid concrete, as you can see if you wish.
1875. It would do well for ballasting an ordinary line of railway? I think so.
1876. And it could be laid on the line at about 1s. 6d. per cubic yard? For less, I should imagine. If we can get it laid on the streets at 1s. 2½d. per cubic yard, in small contracts, I should imagine it could be put on the railway line at a considerably lower price.
1877. You are aware that the ballast is a very large item in the construction of a railway? Yes; I think we are favoured in this district.
1878. Are you aware that it is not only to be a cheap railway, but a railway which will not be worked at the usual rate of speed? I am.
1879. At a speed not exceeding 15 or 20 miles an hour? I suppose that would do us.
1880. Will a speed of 15 miles an hour serve the district well? I think so. I think the people of Moree and the district will be satisfied for some years to come with a speed of 15 miles an hour when it has taken them over three days to go 30 miles. I have known the coach to take three days and three nights to go from Millie to Moree. That fact will give you an idea of what the roads must be at times.
1881. The cost of maintaining the roads between Moree and Narrabri must be very great? Yes; perhaps you noticed, as you came along the road, that it is very little that the Department has done.
1882. I suppose if they did it would pass away? It would be throwing money away to put gravel down on this black soil plain.
1883. After the first heavy rains it would pass out of sight? Some gravel on our main road has gone out of sight.
1884. You favour the direct route as being the shortest and cheapest? It is the most suitable for Moree and the district.
1885. *Mr. O'Sullivan.*] When you say you favour the direct route, are you expressing the opinions of the people of Moree, or your own? My own, and what I have heard, of course.
1886. Have you had any public meetings? Yes; one on Wednesday evening.
1887. Did it decide in favour of the direct route? It was held to arrange for the evidence to be brought before this Committee.
1888. Has any resolution ever been carried to show that the people generally prefer the direct route? No; nor has a resolution been carried to show that they do not.
1889. You have a Railway League here? Yes.
1890. Is the League in favour of the direct route? That I cannot say. The Secretary of the League would be able to say.
1891. Is there a feeling abroad that they would be glad to get a railway by any route? Any way at all; from expressions I have heard the people would be very glad to get a tramway.
1892. The people will be glad to get a railway by any way, but you and others prefer a line by the direct route? I think so. I am speaking for the people to the north of Moree and out towards Mungindi. An enormous lot of wool comes in from that neighbourhood. It would be a great handicap on these people, and would divert the wool traffic to Queensland, as it was diverted before from the want of roads. Amos Brothers sent their wool by another road instead of by Moree, because the roads were impassable, and they could not get their wool to market quickly enough. If the railway is carried from Narrabri to Moree, and the route is 10 miles longer than the "red" line, it is reasonable to suppose that they would not pay 10 miles extra carriage if that payment could be avoided by sending their wool to Queensland.
1893. Moree is the natural centre for all these outlying places? Yes.
1894. And it is on the direct road to the nearest point on the railway? Yes.
1895. Therefore, all the graziers and selectors send their produce down by this way and get their stores back by this way? Yes.
1896. Does the Australian Pastoral Company, which has stations near the border, send its produce down this way? That I could not say.
1897. *Mr. McCourt.*] You stated that some gravel which had been placed on the road between Moree and Narrabri, and also on your streets, had disappeared? Yes.
1898. What thickness of gravel did you put on your streets—6 inches? A foot at starting. If you put on only 6 inches you would not see it at all soon.
1899. That thickness would be useless? Yes.
1900. Nothing less than 1 foot of gravel would carry any weight? I can show you one road which would be a very good guide to the Committee. It is about the worst land that you would have to go through from Moree to Narrabri for road-making. We have put 2 feet 6 inches of gravel on Dover-street, and it is almost impossible to see any now.
1901. That is the general character of the country between here and Narrabri? Yes; it is rotten land.
1902. If the Railway Construction Branch propose to put only 3 inches of ballast on this line, you think it is too little? I suppose they have some other way of doing it.
1903. If 1 foot or 2 feet will not carry ordinary wool traffic, do you think 3 inches will carry a 30 or 40-ton engine? We have no sleepers.
1904. Do you think that 3 inches will be sufficient on the line? I cannot offer an opinion about the ballast for a railway.
1905. At any rate, it takes 1 foot to do an ordinary road? For that particular road, bear in mind.
1906. That is a sample of the ordinary roads on which you put 1 foot of gravel? Yes, generally when we are starting to make a road.

1907. Otherwise they would be of no use? It depends on the nature of the land. You would be surprised at the amount of gravel that this particular road has taken.

1908. *Mr. Ewing.*] You have said that a station belonging to Amos Brothers, which used to send to Narrabri, now sends to Queensland? I understood that they were. I know that they were sending their wool by this way. They had nine, ten, or twelve teams coming along at once, and they used to bring their fodder out at Narrabri, leaving a portion at Moree, and going out with the remainder, and feeding back to Moree. I have been told that, instead of sending their wool down here, it is being sent by the Queensland road.

1909. Are you aware that the Queensland Legislature has imposed a duty in order to prevent Queensland wool from coming this way? Yes.

1910. It is since that duty was imposed, I presume, that Amos Brothers have sent their wool by the other way? No; I think it is some years since they commenced.

1911. It is possible that the Queensland Legislature may so legislate that Queensland wool will not come to Moree? Yes.

1912. Do you know anything about the Inverell or Warialda traffic? I have been there.

1913. What effect will a railway to Inverell have on Moree as a depôt? I do not think it will affect Moree in the slightest.

1914. Have you been to Goondiwindi? No.

1915. To Mungindi? No.

1916. To Collarenebri? No.

1917. To Walgett? Yes.

1918. What effect will the snagging of the Barwon have on Moree as a depôt? It cannot have the slightest effect.

1919. Do you not think that stuff which comes through Moree may go down the Barwon if it is snagged;—would Angledool wool pass over the Barwon and come here if the river were snagged? It would not come this way.

1920. Would Mungindi wool come this way? Mungindi wool and all out that way would come.

1921. But supposing it could go down the river in barges? I still think it would come this way.

1922. I suppose your attitude is that Moree is a depôt for a very large portion of this country, and that you should have the most direct line that it is possible to have to Narrabri? Yes.

1923. *Chairman.*] Is there any other information which you desire to give? No.

Mr. William Henry O'Malley Wood, District Surveyor, Moree, sworn, and examined:—

1924. *Chairman.*] You are the district surveyor, stationed at Moree? Yes.

1925. How long have you been stationed here? A little over three years.

1926. How far does your district extend? It is bounded on the north by the border of the Colony, on the west by the Narran River, on the south by Little Bumble Creek, and on the east by the eastern boundary of the Warialda land district.

1927. Is that far east? Fifteen or 20 miles.

1928. *Mr. Dawson.*] Do you know the three railway routes which are marked on this map? I do not know the Gurleigh Point route; I know the travelling-stock route; I have never followed the "red" route, but I know pretty well how it runs through the land in my district.

1929. You know the general character of the country? Yes.

1930. Is there much settlement at present on the "red" line? No; not very much.

1931. Is the character of the country such that if the line were constructed, people would be likely to settle there? The soil is all good, and the country valuable, but a large portion of that country is purchased by the Edgeroi Company, and the owners of Gurley.

1932. That map, as it is tinted, shows that a great deal of this "red" line goes through reserves? Some of that is out of my district.

1933. As far as your district is concerned, very little land along the line is alienated? As soon as the leasehold areas are thrown open, they will be very valuable land open for selection. The white patches represent valuable land.

1934. Is it likely to be settled upon? Yes; it will be rushed.

1935. What is the character of the country under the ranges, say 10 or 15 or 20 miles east of the line? The bulk of the country to the east of the road through Terry-Hie-Hie to a point known as the "wineshop," about 18 miles from Narrabri, is of a very inferior quality. There are some hills of inferior quality to the west of it, but there is a great deal of land of very good quality also.

1936. Unalienated? Yes; it is not in large areas, I think; it is in small patches. You would have to take bad country with good.

1937. I wish you to answer generally. Will it be sufficiently valuable to induce people to settle, and settle profitably there? Between the road quoted, and the railway line, it could be profitably settled upon.

1938. If the railway were constructed? Yes.

1939. Would the land grow grain of any sort? I believe it would; but it has not been used much for that purpose. There has been very little market for corn. In some places corn has been grown there.

1940. The land is locked up and will be thrown open at the end of next year;—supposing the railway is not constructed, will the people be likely to go there if the land is good? They would select the land certainly.

1941. Whether the railway is there or not? Yes.

1942. I take it that the railway will not create any more settlement there than if it is not constructed? It will be settled in either case, but some of it might be sold as a special area if the railway were constructed. More land might be sold as a special area than could be done if it were not constructed.

1943. You have gone 18 miles;—what is it from this point, 18 miles, towards Narrabri? It is outside my district, and I know very little about it.

1944. Do you know anything of the timber on the land in your district? From Terry-Hie-Hie, about 12 miles up the creek, the bulk of the timber is box-forest. There is a little ironbark through it, and near the road it is fairly open ground.

1945.

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1945. Do you think you could get sleepers—not adzed sleepers, but half-round split or sawn sleepers for which you would not want so many large trees? I think you could get a certain number, but I cannot speak very positively on that point. I think you could get some timber at any rate suitable for the purpose.
1946. What would the sleepers cost, do you think, delivered on the line? I think they would cost from 9d. to 1s. a piece.
1947. From 9d. to 1s.? No, 9d. I was thinking of morticed posts when I said 1s. There is some carting to be paid.
1948. But a sleeper is a good deal bigger than a post? It is, but then it is not morticed. We pay 1s. for morticed posts. But my opinion on this subject is not worth as much as that of some other persons.
1949. Do you know the country about Millie and to the west of Millie? Not immediately to the west of Millie.
1950. Do you know the character of the country between Millie and the railway line? Not very well.
1951. Or between Millie and Gurley, or Woolabrar? I think I know it pretty well. I have not been carefully over it with a view of inspecting it. I know it is chiefly black soil.
1952. It is 12 or 13 miles from Millie to the line at either place? I have not been across that country. I could not give you any reliable evidence.
1953. For all the stock coming from the west you have a tank every few miles on the travelling-stock route from Moree to Narrabri? Yes.
1954. Would you have to put tanks between the travelling stock route and the "red" line? I think you would.
1955. That is for the stock to get on the line, say, at Gurley or Woolabrar? Yes; I think a water supply would have to be provided for travelling stock.
1956. Would the stock routes to the line have to be of the same width—a quarter or half a mile—as the travelling-stock route? On the main road the width varies very considerably;—in some places it is nearly a mile wide.
1957. Would it be necessary to have a travelling-stock route to each station? Undoubtedly. I may explain that the road leading west from Woolabrar station is outside my district. It would be necessary to have a travelling-stock route leading to Woolabrar. The accommodation already exists to Tycannah, but I am doubtful whether there is sufficient accommodation up to Gurley.
1958. Is there not a travelling stock route on Courallie Creek? The travelling-stock route is the nearest to the creek.
1959. I suppose there will be no difficulty in putting travelling areas there if you adopt the route? I think not.
1960. Which do you think, from a national point of view, would carry most stock, and, of course, make most money, independent, of course, of the people of Moree or to the north? I am inclined to think that the travelling-stock route would be the most advantageous route—it gets further away from the mountain ranges, and admits of reaching settlement so much further to the westward.
1961. You think the extra 6 miles which the Moree people and those north of Moree would have to travel would be amply compensated by the railway getting a great deal more traffic? In view of the short distance from Moree to the border I think it would, but if the border were many hundred miles further north I should not think so.
1962. The more stock you carry the lower the fares and the freights would be? Yes. The chief advantage I can see in going to Millie is that the line will run more through the centre of settlement; the "red" line will hug the hills a little closely for settlement.
1963. Do you think the people about Millie will go to Woolabrar or Gurley, a distance of 13 miles, and truck their stock, or go to Narrabri? I think they will go to Narrabri, a distance of 35 miles, and save the railway freight from Woolabrar to Narrabri.
1964. *Mr. Davies.*] How many acres of unalienated land in your district will be served by this railway? I cannot say without referring to the maps and records.
1965. Can you not give a rough estimate from the map on the wall? It would be merely a guess.
1966. Can you not state approximately the number of acres that will be available for sale or selection, taking into account the leases which will fall in in 1895? I can supply the exact information to-morrow morning.
1967. What will be the increased value given to the land in your district which will be available for sale by the construction of this railway? I think the Crown lands, within, say, 12 miles of the railway on each side, will be increased by about one third.
1968. What value do you place on the land, supposing it were available? The land within that distance of the line as we sell it in special areas, and so on, is, I think, worth 30s. an acre. Some has brought as high as £2.
1969. You say, that if the railway is constructed, the land within a radius of 12 miles from the line would be worth £4 or £5 an acre? No; I think that land worth 30s. an acre would be worth about 40s. an acre.
1970. It would only increase the value of the land to the extent of 10s. an acre? Except in special places. In favoured places it would bring more. It would bring £2 10s., or £3 an acre.
1971. The increased value would extend to all those holdings which will be served by the railway? It spreads outwards from large figures to such small figures, that it will be most difficult to estimate.
1972. Coming back to the "red" line, do you think it will serve the settled population along the route? I do not think it would serve the settlement as well as the travelling-stock route.
1973. What do you think would be a fair service to the selectors and pastoral tenants on either side of the railway—15 or 20 miles? Those engaged in the pastoral industry would, I think, be well served up to 25 miles, and fairly served up to 50 miles.
1974. And in regard to selectors? With agricultural selectors it would be different, for every mile makes a difference in the cartage of their cereals.
1975. Is it not a fact, that most of the selectors along the proposed line are small pastoralists? Yes.
1976. Practically, these selectors are the same as squatters, but in a smaller degree? Yes.
1977. A railway within 20 miles would serve any pastoralist, or practically, any settler? Yes.
1978. Very little agriculture is carried on here? Very little.
1979. Not much wheat is grown? No; it has only been grown in a few places as an experiment.
1980. They prefer sheep-farming, because it pays best? Yes; there is no market, except the local market for hay or grain.

1981. During your residence you have had an opportunity of forming an opinion as to the prosperity of the settlers? Yes. Mr. W. H. O'M. Wood.
1982. They have had fairly good seasons in your time? Except in 1890, when they suffered more or less from floods. 24 Nov., 1893.
1983. It is a fairly prosperous live district? It is a very prosperous district.
1984. And a very great impetus would be given to the prosperity of the district by the railway? Yes; more particularly with reference to the settlement of the leasehold areas throughout the whole of the country to the east of the Barwon.
1985. You stated that it would be better to adopt the travelling-stock route, so as to serve a larger number of settlers;—but supposing that the direct line is in many cases only 12 or 14 miles distant from the settlers, and that it is the shortest and cheapest route, and that, in your opinion, 25 miles from a station is a fair service for ordinary settlers, do you think it would be any great inconvenience to the settlers if they had to go from Millie to Woolabrar—a distance of from 12 to 15 miles? Well, supposing the band through which the railway passes is 50 miles wide, I think we would take in within that 25 miles of the line a large piece of mountain country.
1986. Do you know the country well through which the "red" line passes? I have never followed the route along. I have crossed the route in various parts, but have not made a special inspection of it.
1987. Is it the highest and driest land through the district? I am inclined to think it would be higher and drier than any land to the west.
1988. The land all along the travelling-stock route is very much lower? As you near the hills you get the slopes from the hills.
1989. The land on the travelling-stock route is lower, and is more likely to be subject to floods? It is lower, and it is more likely to be wet and sloppy.
1990. Any fall must go in that direction? Yes.
1991. It would be more expensive to construct a line through such country than on the higher and drier land? Of course you would have more water to accommodate.
1992. Your primary objection to the "red" line is that it hugs the hills too much? Yes.
1993. But still it has the advantage of being dry and solid for railway construction? It is drier. One could not tell, without making a careful examination of the country, whether it would be very much less expensive. I think the probabilities are that it would be more expensive.
1994. It is estimated that a line by the travelling-stock route will cost £500 a mile more than a line by the "red" route;—are you aware that that estimate has been made by the Engineer-in-Chief? I was not aware of it.
1995. In your opinion, is that a high or a reasonable estimate? I do not think that my opinion would be worth anything. I really could not express an opinion without seeing the figures or some data.
1996. Do you think it would be wise to lengthen a cheap line to the extent of 6½ miles, by adopting the travelling-stock route at an additional cost of £500 a mile for the total length? If it be a question of serving the country and settlement I should think it would be wise. But if it were a through line I should express a very different opinion.
1997. Would you handicap the people of Moree, and the people in the district of Moree, with the additional expenditure on the line, and with the increased freight and fare? I am inclined to think it would be warranted, owing to the fact that we should get more traffic from the west.
1998. You are of opinion that it would be wise to adopt the travelling-stock route, notwithstanding the increased cost and increased length of the railway? Yes; owing to the increased trade which might be brought to the railway.
1999. You know the district of Moree thoroughly, I presume? My occupation takes me about in all parts.
2000. Supposing the railway is extended by either the direct route or the travelling-stock route to what extent would it develop traffic and trade in this district? It would be very difficult to estimate what increase would take place in the traffic and trade. This is not a matter that I should ordinarily bother about, but I did make some inquiries during the last few days at Boggabilla, and I found that from our side the McIntyre some 3,000 bales of wool have gone up during the last three years by Warwick to Brisbane for transshipment to Sydney.
2001. How far is it from the McIntyre to Warwick, and thence by train to Sydney? I was told that it is 145 miles from Warwick to Goondiwindi.
2002. Would it not be more direct to send the wool *via* Moree to Newcastle or Sydney? I was told that the Railway Commissioners in Queensland have given the station people some special advantages. But even with these advantages that they have got some of the lessees I spoke to, and a big scourer told me, that they would send their wool this way if the railway were extended to Moree.
2003. You think that a large additional traffic would be created by the railway? Yes; but that increase does not represent all the increase which would take place. A good deal of trade would come in from the other side of the border. The country to the north of the McIntyre is very much flooded. Until a Queensland railway is constructed to Goondiwindi, the chances are, I think, that we would get a considerable portion of the Queensland goods traffic.
2004. *Chairman.*] Provided that no official barriers are placed in the way? Yes.
2005. *Mr. Davies.*] You think that a large additional traffic would come from the Queensland side if our railway system were extended to Moree? I think so. It would also lead to a great increase to the railway revenue in this sense; that a great deal of the fat stock and wool which now go to Tamworth, and to stations much further down the Northern line, would come here, and the railway would get the benefit of the additional trainage.
2006. *Mr. O'Sullivan.*] You have to travel to Goondiwindi as well as towards Collarenebri? To both.
2007. What is your opinion of the character of the settlement—is it permanent? Where it is *bona fide* it is permanent. Where the selectors select in their own interest, there is no doubt that they can live on the land, and do well.
2008. Do you think there is much settlement which is not *bona fide*? I think that occurs all over the Colony.
2009. Do you think it is particularly strong up this way? I do not think it is particularly strong, but it exists here as well as everywhere else.
2010. Is it stronger here than it is in other districts? I think not.

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2011. Is there much room for settlement out towards Collareendabri? There is a great deal of room, but the country is not nearly as good. The rainfall is lower, the country is more flooded in high floods, and there is less prospect of agriculture in that district than in the Boggabilla District.*

2012. How far does settlement extend from Millie out that way? There are selections taken up right to the Barwon—right over to Collareendabri.

2013. Would the selectors out there be likely to come into this line, or would they go to Narrabri? If the railway were extended by the direct route, I think the bulk of them would go to Narrabri.

2014. You stated just now that the land towards Collareendabri is inferior;—did you compare that land with the land round Moree, or with the land out towards Goondiwindi? It is inferior to both. It has a rainfall of only 18 or 19 inches, as compared with a rainfall of 24 inches at Moree and 26 inches at Goondiwindi. But in addition to all that, it is nearer to the Barwon, and is flooded by the waters from the Barwon. If the Barwon is in flood, large tracts of country on the frontage to the river, and extending miles back, are submerged for some days.

2015. Consequently, the land to the north is less liable to be flooded than the land about Collareendabri? Not nearly so. Some of the country west of a line produced north of Moree is very much flooded.

2016. About what point? A good deal of the Gil Gil country is flooded. The Whalan country is flooded.

2017. Is the Gil Gil country as badly flooded as the country about Collareendabri? I think it is, or very nearly so. I am referring to the lower Gil Gil; the higher Gil Gil is not.

2018. In referring to the Gil Gil country, you do not mean the upper Gil Gil country, but the country towards the Barwon? The country in a north-westerly direction from here.

2019. Do you think the selectors and graziers you speak of between Millie and Collareendabri would be induced to come into a railway station at Millie in the belief that 13 miles would make all the difference? If a station were placed at Millie, on the travelling stock route, they would have to go there. They go in by that way in going from Collareendabri.

2020. They have another road to Narrabri? They have; but a great deal of the traffic goes past Millie, and I think they would all go to Narrabri if the railway station were placed at Woolabrar.

2021. Having come so far to Millie, do you not think that they would be inclined to go another 12 or 13 miles to tap the railway at Woolabrar instead of going on to Narrabri, a distance of 35 miles? They have 20 miles more, you see, to go with the teams; they have a travelling stock route all the way; they would save the carriage on the railway up to Narrabri, and I think the probabilities are that they would go to Narrabri.

2022. Would not the graziers have to pay more for the carriage of their wool by road to Narrabri than *via* Woolabrar to Narrabri? They might have to pay a little more. I could not tell unless I knew what the figures were.

2023. I presume that if the carriers got instructions from the graziers to strike the line at the nearest station they would be compelled to go there? Of course they would.

2024. And they would be likely to get those instructions if the carriage by team was less than the freight by rail to Narrabri? I think it is purely a matter of cost.

2025. Which do you think would serve that district best—a line by the travelling stock route from Narrabri to Moree, or a line by the direct route with a branch from Woolabrar out towards Collareendabri before it reaches the flooded country? I think the latter would answer better than any other arrangement. I think it would be the most suitable arrangement possible; because the very country I would wish to spread the line westward for would be served by such a line, and the traffic from Moree would be saved the carriage over the extra length of $6\frac{1}{2}$ miles, and the cost of constructing the extra length would be saved.

2026. Such a line would not only give better accommodation to the people west of Millie, but it might also attract trade down by way of Angledool? Yes; more particularly in dry seasons.

2027. Reverting back to Goondiwindi,—there is ample room there for settlement? There is not very much on the resumed areas, but there is on the leasehold areas.

2028. According to the indications on this map there is a good deal of leasehold land there? Yes; but a lot of the land which is shown as white is scrub country with very rich soil. A great deal of it is red and chocolate soil suitable for wheat-growing. It would ultimately be very valuable land.

2029. If the railway should be extended from Moree to Goondiwindi, it would possibly open up a good wheat-growing country? I think it is very probable. Cultivation has been practised more in the neighbourhood of Boggabilla than anywhere about here.

2030. Do you know the stations of the Australian Pastoral Company—Darc-Dareel? It is across from Mungindi.

2031. The company have some very large holdings representing some millions of acres? Yes.

2032. Do they send their wool by way of Moree, or Brisbane? I could not say. I think the line you suggested towards Collareendabri would reach that traffic. I think it would probably go without that line past Mungindi to Moree.

2033. Have you ever heard the expressions "dry-weather road" and "wet-weather road" used to indicate two different roads to Moree—one to be travelled in dry weather, and the other to be travelled in wet weather? I never heard that expression used.

2034. In dry weather it is better to travel the travelling stock route, but in wet weather it is advisable to take the mountain road? In the winter of 1890 nearly all the heavy traffic which came to Moree came by the mountain road.

2035. That winter, when there were such severe floods, would be a very good test of the character of the two roads in wet weather? Yes.

2036. If the people were compelled to travel by that road owing to the floods, is it not possible that a flood may come and wash away a railway line on the travelling stock route? It was not so much the floods which prevented the traffic from going along the travelling stock route, but the nature of the soil. The black soil was wet and sodden during that winter. Rain had followed rain.

2037. The water does not flow very rapidly, but lies a long while on the ground? Yes. The rains followed so soon after each other that it could not dry.

2038. The travelling stock route is almost in the very basin of that country? I could not say that. The water flows westerly to the Barwon. You are crossing the watershed going all the way from Narrabri to Moree.

2039

* Note (on revision):—I intended to compare land at Collareendabri with that at Boggabilla, which is on the eastern side of the district.

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2039. Between the red line and the mountains, are there any thick scrubs? There are some, but chiefly on the east side of Terry-Hie-Hie road.
2040. How far would that be from the proposed railway? About 16 or 17 miles at the widest point.
2041. Do the scrubs extend very far? It is scrub right up into the hills.
2042. Some of these scrubs are on the leasehold areas? Some of the leasehold and the resumed area still left is scrub.
2043. Do you think these scrubs would impede settlement at any time? For a time, certainly. While there is good open land people will not take up scrub country, but ultimately I believe all that land will be selected, with the exception of the poor, rocky country.
2044. What would it cost per acre to clear it? If cleared as a scrub lease, it ought to be cleared, I think, for 5s. or 6s.—perhaps 5s.; but to root up the trees and destroy them straight away it would run into pounds. To clear for cultivation straight away it would cost not less than £4 or £5 an acre, I think, probably a good deal more.
2045. Suppose these scrub lands were offered on scrub leases, do you think they would be availed of? They are open now to scrub lease. An application was lodged a short time ago for a lot of this country on a scrub lease, but it was withdrawn, as the applicant had suited himself by buying another property.
2046. I suppose we shall have to wait until all the good land is selected before we are likely to see the scrub lands settled on? They can be taken up on scrub leases. They are not likely to be taken by conditional purchasers or conditional lessees until the other land is selected.
2047. If the scrub were cleared it would prove pretty good agricultural country? The land is very rich. There are some sandstone spurs of poor quality. Some of the knobs are of basaltic formation, but too rocky to cultivate.
2048. What colour is the soil? It is black chiefly; there is some chocolate.
2049. *Mr. McCourt.*] What is about the average size of the selections in your district? The selections nearly all run in family groups. I think the average size of a family holding would not be less than 5,000 acres—probably between 5,000 and 7,000 acres.
2050. The individual selections are nearly all of the maximum area wherever it is possible? There are some families holding as much as 10,000 and 20,000 acres.
2051. Taking a radius of 10 miles around Moree, how many of these holdings would there be likely to be? It would be very hard to answer the question, even approximately.
2052. Is Warialda in your district? Yes.
2053. Would much of the Warialda traffic come into Moree? If there were no railway to Inverell it would.
2054. But if a railway were constructed to Inverell, would the whole of the Warialda district traffic go to Inverell? I think the whole of the traffic of the township of Warialda would go to Inverell, but not the whole of the traffic of the district.
2055. From about how far on the other side of Warialda would traffic be attracted to Moree? I do not think more than about 20 miles beyond Warialda, assuming that there is no line to Inverell. That would be about halfway between here and Glen Innes. I think the traffic halfway would come here, because we can provide them with better accommodation for travelling stock than they can in the settled districts. Otherwise, I think they would gain a little in distance by going to Glen Innes.
2056. Presuming that this line were not constructed to Moree, and that a line were constructed to Inverell, how far would that line attract traffic from this way? As far as Yetman—perhaps a little further down the McIntyre; and it might go, perhaps, from 24 miles on this side of Warialda.
2057. If the Inverell line, as well as the Moree line, were constructed, those lines would be essentially competing lines for the traffic over that 40 miles of country? I scarcely know whether they would compete very much. Wherever you are in the country you go to the nearest line.
2058. If both lines were constructed, would they not compete for the traffic of this 40 miles of country? I do not fancy that there would be any competition. It is not as if the lines were constructed by private enterprise.
2059. But you have stated that if the Inverell line were not constructed, and the Moree line were constructed, the latter would draw traffic from 20 miles east of Warialda, because Moree would be nearer than Glen Innes? Yes.
2060. Supposing that a railway were constructed to Inverell, would you not lose the traffic of 20 miles of country? Yes.
2061. So that they would be competing lines? We would be competing to that extent that we should lose something.
2062. *Mr. Ewing.*] I presume you would favour a railway to Moree, because it is a depôt for a certain portion of country? Yes.
2063. The country for which it is the depôt at present would be bounded on the east by a line halfway between here and Glen Innes, on the north by the McIntyre, on the west by the Barwon, and perhaps west of the Barwon? Yes.
2064. You would get as much Queensland traffic as Queensland legislation would permit you to get? Yes.
2065. Moree being a depôt for such a large area of country, do you think it is fair to ask all that produce to go 6 miles further round to reach Narrabri? Of course it is a loss, but you have to look at the other gain. In view of all the gain, I think it would be advisable to make it by that route.
2066. If you have one territory to the west, and another territory to the north, does it not appear to be reasonable to deal with those territories by two lines rather than by one? Yes; if you do that it will save the necessity for a curved line.
2067. Is the territory which you have described, and for which Moree is now the depôt, sufficient to justify the adoption of the nearest route to market? If the branch line referred to were made, I think it would be.
2068. Railways are not built for to-day only, but with regard to the development of the country for all time? Yes.
2069. If the country towards Collareendabri is sufficient to ever justify the construction of a railway, it is best to put this railway in the position which will always be the best position? Yes.
2070. Therefore it appears that the direct line would be the better one? I think that a branch line would be the best service for the whole district.*

2071.

* NOTE (on revision).—I meant here that a direct line to Moree, and branch to Collareendabri, would be the best service.

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2071. In the immediate future it is probable that a railway will be constructed to Inverell, and it is also probable that the Barwon may be snagged. Do you expect to see boats go permanently to Mungindi? If the river were snagged and locked, undoubtedly they could go with safety.
2072. Do you believe the Barwon is of sufficient importance there to lock it? Yes.
2073. You regard that in the immediate future we shall have a different state of things with a railway to Inverell and the Barwon snagged? Yes.
2074. How will the area for which Moree is the depôt stand then? Moree then will be bounded by a line halfway between Moree and Inverell on the east. The river would only take goods traffic. It would never take stock. It would be hard to say how far the trade line would come up towards Moree, but I think you may say a line about halfway between the Barwon and Moree, because water traffic is much less than railway traffic as a rule. It would come fully halfway for the goods traffic, but I think the stock traffic would still remain as it is.
2075. Therefore, Moree becomes a depôt for trade 40 miles to the east and about 50 miles to the west and north? Yes.
2076. That appears to you to be the reasonable development of the country? Yes.
2077. The Moree district, in your opinion, is still large enough to be entitled to a direct way to market? Yes. When that time arrives, I think the amount of fat stock traffic along the Moree line will be very greatly increased. Again, in the times of drought, stock going through this centre to New England will be very considerable.
2078. I presume, that you can give no opinion with regard to the effect of Queensland legislation? No.
2079. Do you know anything about artesian water in the district? There have been no experiments tried on this side of the Barwon.
2080. It is problematical? It is. Close to the Barwon they have struck artesian water at a great depth.
2081. You do not know the formation? No; the formation to the east of Moree—some 14 or 15 miles—is, I think, sandstone. The sandstone formation is deep, but it has been struck in wells.
2082. You arrived at your opinion with regard to railway-sleepers from a comparison with posts? Yes.
2083. That may be altogether misleading? Yes.
2084. You know nothing, in point of fact, about this timber, to give an opinion as to railway-sleepers? No, not in that locality.

Mr. John Thomas Crane, Council Clerk, Moree, sworn, and examined:—

- Mr. J. T. Crane.
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2085. *Chairman.*] You are the Council Clerk of Moree? Yes.
2086. You are also the Secretary of the Stock Board? Acting Secretary.
2087. *Mr. Suttor.*] Have you considered the question of this line from Narrabri to Moree? I have considered the question chiefly in connection with the trade which will come from across the border and the Boggabilla portion of our district, but which now goes to Cambooya or Warwick, on the Queensland railways.
2088. Where is Boggabilla? It is a New South Wales township, 5 miles from Goondiwindi.
2089. What trade do you expect to get from there by this line? Within our own Colony, about 3,000 bales of wool.
2090. Any sheep or cattle? Yes; but the stock trade we get now pretty well. It is wool chiefly which goes out of the Colony.
2091. Have you any other trade besides? I think the wool from such stations as Callandoon and Welltown, which graze about 200,000 sheep, will also come this way, unless the border-tax is raised.
2092. Where are those stations? On the Queensland side of the McIntyre, below Goondiwindi. Last month I saw some wool going through which had paid the border duty in order to come this way. It came from Dareel—not the company's Dareel, but the leasehold of Dareel.
2093. Do you think a great deal more wool would come to Moree if this line were constructed? Yes.
2094. How much more? I think that about 3,000 bales of New South Wales wool which now goes across the border to Cambooya would come this way. I also think that about 2,000 bales of Queensland wool, which goes chiefly to Cambooya and Warwick, would come this way.
2095. What is Cambooya? It is a trucking-place on the Charleville line. Warwick is the trucking-place on the other line. I have visited most of the properties on this side of the border during shearing time, and I know from the owners themselves that they would send to Moree.
2096. Have you any idea of the number of bales which would be likely to come here to be shipped to Sydney, other than those you spoke of on this side of the border? I think on this side of the border about 3,000 bales.
2097. Are many sheep and cattle likely to be trucked here? A number of sheep and cattle which come from that part, and which now truck at Narrabri, would truck here, but it would not be new business altogether, such as the wool, which all goes out of the Colony. The sheep and cattle chiefly go to Narrabri now, on account of the better stock route.
2098. *Mr. Davies.*] Have any of the pastoral tenants who you say are likely to send their wool by this railway been summoned to give evidence before this Committee? We have not had an opportunity to communicate with any of them since we were apprised of the exact date on which the Committee would sit here, but there is a gentleman here from that locality who will give evidence.
2099. Your statements, of course, are only hearsay? What I have been told by the people themselves.
2100. Would it not be better that some of these gentlemen should give evidence themselves? There is a gentleman here who lives amongst them and sees their wool coming over this way.
2101. Can you give the names of the owners, and the area of their holdings? On this side of the border Carrigan Brothers—the firm of J. P. Carrigan, and O. E. Carrigan and the firm of J. F. Carrigan and A. N. Carrigan—shear 17,000 sheep.
2102. Have you personally seen the persons whose names you are about to quote, and been informed by them that in the event of this line being constructed to Moree they will send by this way the wool which they now send to Queensland? Yes.
2103. Will you now give the other names? Robert Cook, 4,000 sheep; R. Y. Holmes, 5,000 sheep; R. D. Gordon, 4,000 sheep; Hooper and Barnett, 25,000 sheep—whether that wool would come this way would

would depend a good deal on the McIntyros being fordable; they can get to Warwick station. C. W. Bailey, 2,500 sheep; A. Knauf, 1,000 sheep; Brown Brothers, 60,000 sheep; estate of the late Mr. Walker (Borong), 30,000 sheep; Allan Brothers, 6,000 sheep; Holmes Brothers, 2,000 sheep; McMillan and Ryan, 5,000 sheep; Wilson Brothers, 7,000 sheep; the estate of the late Mr. Woods, 2,000 sheep; Phillips, 2,000 sheep; John Walsh, 5,000 sheep; Robertson and Brady, 4,000 sheep; and Boobera station, about 30,000 sheep.

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2104. Any others? Those are all selectors and squatters on this side of the border.
2105. Who at present send their wool to Queensland? Yes.
2106. Have you made up the total number of bales of wool? I include in my estimate Welltown station, which has about 150,000 sheep, and Callandoon station, which has about 30,000 sheep—on the other side of the border—as they are only 70 miles from Moree as against 140 miles from the nearest station on the Queensland railway. These persons hold about 395,000 sheep in all.
2107. How much wool do you think goes to Queensland from those sheep? About 5,200 bales.
2108. In the event of this railway being constructed, it would come to Moree and be shipped to either Newcastle or Sydney? Yes.
2109. From your position as acting Secretary of the Stock Board, you are sure of the accuracy of these figures? Yes. Some of the figures are only approximate, because the holdings are in the Warialda district; but they are within 1,000 or 2,000 of the proper number.
2110. Do you know the country through which the "red" line runs? I have never followed the line, but I have a general knowledge of the country.
2111. You also know the travelling stock route? Well.
2112. Are you aware how much the latter route is longer than the former? About 6 miles.
2113. Do you think the squatters and selectors to whom you have just referred would be willing to pay the additional freight for those 6 miles, or do you think they would prefer to have a direct line which would shorten the distance and reduce the freight? They would certainly prefer the shortest and cheapest line.
2114. Do you think a line by the travelling stock route would have any influence in preventing some of the wool and stock you have mentioned from coming to Moree? I cannot say that it would with regard to those properties I have mentioned, but certainly the shorter and cheaper the route the more trade you will draw from that quarter.
2115. You believe the shorter and cheaper route is most likely to influence the squatters and selectors to send their produce direct from Moree to Sydney? Yes.
2116. You favour the direct line in preference to the line by the travelling stock route? From a national standpoint the direct line is the best—for this reason, that I do not think that the increased traffic at Millie would pay the interest on the cost of the deviation.
2117. Do you think that the trade which might be got at Millie, supposing the railway were taken in that direction, would be equal to the trade which might be induced from our own border by a direct line? Yes.
2118. Do you think the influence in favour of the shorter line, and the trade that would be drawn from beyond Moree to the Queensland border, would be greater than that which might be obtained if it went round by Millie? Yes. I think that what you will drop at Millie you will pick up at Narrabri.
2119. Would the one compensate for the other, or would the trade of Moree be much larger than what you might lose at Millie by taking the direct route? I think you would gain as much at this end as you would lose at Millie. You might possibly lose some clips altogether by making an expensive line to Narrabri.
2120. You would only lose the difference in the freight from Millie to Narrabri? Yes; the freight for 45 miles.
2121. From a national standpoint you think that the direct route is more likely to develop a larger trade and secure the whole of the trade proper to the district of Moree than would a loop line? Yes.
2122. Are you aware that the Engineer-in-Chief estimates that a line by the travelling stock route will cost not less than £500 a mile more than a line by the direct route, which is estimated to cost £2,400 a mile? I have heard a statement to that effect.
2123. Do you think that in order to serve the people of Millie that expenditure would be justifiable? No; I do not think the increased trade got at Millie would pay the interest on the increased cost of constructing the line by that route.
2124. How long have you been council clerk? Two years.
2125. What has been the increase in the value of the properties in the borough during this year as compared with the previous year? I have not the figures at hand; but as regards the rates I may say that as against a revenue of £459 from this source last year we have received £501 this year. In a good many cases the assessment has been reduced, owing to the depression. The land is not so valuable as it was twelve months ago, in my opinion. I valued the properties. The increase in the revenue is due to the increase in the number of the buildings within the township.
2126. How many buildings, shops, and dwellings have been erected this year? I could not tell you without reference to the books, but there has been a large increase.
2127. Is it likely to continue? I think there will be an increase from time to time, but not so large an increase as we have had during the last year, and which, I think, has been largely in anticipation of the railway coming here.
2128. What rate do you strike? One shilling in the £.
2129. Has it been reduced? No; we are in debt.
2130. Has there been any marked depreciation in the value of property during the last twelve months? No.
2131. Although only three years in existence, the borough has a debt of £500? As against a loan of £500 we have a credit balance at the bank of £300, so that we really owe only £200.
2132. You receive the Government subsidy of £ for £? Yes.
2133. You are getting no interest on your credit balance? Not at present.
2134. That is rather bad financing? At the end of the year we propose to reduce the debt of £50 by £150. There are works in operation which will absorb the balance of the credit balance.
2135. Is there a great abundance of river gravel here? Yes.

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2136. How much per cubic yard does it cost to lay and spread gravel on your streets? It costs from 1s. 3d., for streets adjacent to the river, up to 1s. 9d. or 1s. 10d.—even 2s. for streets in the far end in the municipality.
2137. Would 2s. 6d. be regarded as a fair and reasonable price at which to get gravel ballast for the railway within a reasonable distance? It would depend on the means of carriage. If carried by carts for 8 or 10 miles it would cost a great deal more, but up to a distance of about 3 miles it could be done at 2s. 6d. It is considerably lower than it has been done of late years, as there are numerous carters wanting work.
2138. Do you know of any timber fit for railway sleepers in the district, or on the route of the railway? I do not know anything of the timber exactly on the line.
2139. Have you any further reason to advance in favour of the railway? I have only to point out that a number of stations which now send their wool to Tamworth or Glen Innes would send their wool here, and the difference in the freight between Narrabri and Sydney would go to the railway.
2140. Have you any idea of the quantity? I think it would be about 500 tons.
2141. It would come to Moree from these stations? Yes.
- 2141½. *Mr. O'Sullivan.*] Are they fat or store sheep that are brought down from the Queensland side through Moree to Narrabri? I have never seen store sheep trucked.
2142. They are not likely to travel on to Narrabri, even if the line goes to Moree? I do not think so.
2143. Is the country between Moree and Narrabri very expensive country to travel stock over? Yes; on account of the numerous public watering-places.
2144. The country between Moree and the border is pretty well supplied with natural water? Yes.
2145. But the country between Moree and Narrabri is supplied with water from Government tanks, for which water the drovers have to pay? There has been plenty of natural water during the last four or five years, but they have had to pay just the same.
- 2145½. That will be an argument to go to show that the stock will be shipped at Moree if the terminus is shifted to that town. Do you know anything about the Australian Pastoral Company? I know the locality of their stations.
2146. Where do they send their wool now? I have seen some of their clips going through Moree. I have met some of it crossing the "Watercourse," about 60 miles from Moree, and going to Narrabri. But I believe the greater quantity of their wool goes to Brisbane.
2147. You think the construction of this railway will bring that trade here? It will bring a good deal. It will bring all the wool grown on the land about Mungindi. I think the wool which is grown lower down the river will not come here unless the "Watercourse" is dry.
2148. Are they not talking of erecting large sheds and appliances at Dareel? I am not aware that they are.
2149. This district is very free from diseases in sheep? Very free.
2150. The sheep have had no very serious attacks, at all events? No. I have not heard of any serious disease in sheep during the last seven years, since I have been in the district.
2151. It may therefore be regarded as a very reliable pastoral district? Yes.
- 2151½. You stated that some 3,000 bales of New South Wales wool went across the border to Cambooya or Warwick. As it is much shorter to Brisbane by rail than it would be to Sydney, you think the shorter distance would not still attract that wool to Brisbane? From the stations I named to Cambooya—the distance is 140 miles, and all these stations are within a distance of from 65 to 90 miles of Moree. There is a new road being opened to Boggabilla, which is 18 miles shorter than the present road.
2152. Moree is 400 miles from Sydney, Cambooya is about 146 miles from Brisbane, and I suppose Warwick is about 160 miles from Brisbane? I am not sure of the distance.
2153. Will not the shorter distance to be travelled on the Queensland railways always give Queensland an advantage in the competition for the carriage of this wool? Certainly, it will give them an advantage, but I do not think that it will give them sufficient advantage to attract wool over the border. The owners of 200,000 sheep I named are on this side of the border.
2154. Moree will become their trucking place without a doubt? Yes.
2155. *Mr. McCourt.*] You stated that 500 tons of loading which now goes to Tamworth would go by this railway if it were constructed. Where would that loading come from? Tullooona runs 110,000 sheep; Yallaroi, 80,000 sheep; Gunyerwarildi, 30,000 sheep; and selectors on Gunyerwarildi, 50,000 sheep. These 270,000 sheep produce about 3,510 bales, equal to 526 tons, on which, in my opinion, a gain of about 30s. per ton in freight would be made on the difference between Moree and Tamworth; that is, allowing 18s. as the carriage from Moree to Narrabri. From Narrabri to Sydney the freight is £4 7s. 1d. per ton; from Tamworth to Sydney it is £3 15s. 10d. per ton, and if we allow another 18s. per ton from Moree to Narrabri that would be equal to a revenue of £789 per annum for the carriage of this wool.
- 2155½. You think that they would pay the extra freight and come this way? Certainly; Gunyerwarildi would travel 45 miles to Moree as against 130 miles to Tamworth, and Tullooona 58 miles as against 170 miles to Tamworth.
2156. *Chairman.*] Do you desire to make any further statement? Yes; with reference to the evidence of Mr. Wood on one point. As stock agents for the last seven years our firm has consigned a vast number of sheep to Sydney for sale. In my opinion the sheep at Millie would not go on to Narrabri but would truck at Woolabrar. The district surveyor stated that the sheep would rather go to Narrabri, but I think I am stating the opinion of every stockowner in saying that they would not go to Narrabri.
2157. If the stock owners to the west of the line, coming in *via* Millie, assert that they would still go on to Narrabri, and would not avail themselves of this line at Woolabrar, what do you say to that? I would say that if the sheep were mine, they would go to Woolabrar, knowing how fat sheep are knocked about, and how difficult it is to truck owing to the crowded state of the Narrabri station. I am sure that the owners of all the sheep would rather drive them 13 miles to a station on this line and pay the extra freight than submit them to the knocking about which they must suffer at Narrabri.
2158. That is always provided that there are conveniences at Woolabrar for trucking sheep? Yes; I know that a number of sheep were sent from here to Breeza, because that is a quieter place for trucking. There are no dogs, towns, or lanes to go through near the trucking place. These sheep were sent up the river by Barraba, Manilla, and Carrol, across to Breeza.
2159. That is a long distance? It is a long road, but in the ordinary state of things there is no grass from Boggy Creek to Narrabri. A day or two before market, when you want your sheep to get a little, there is no grass and they are trucked hollow and empty, and they are a couple of days in the trucks.

2160. Owing to the dearth of feed on the stock route between Millie and Narrabri, you think that all the stock coming from the west through Millie would tap the nearest station on the proposed line? Mr.
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Undoubtedly.
2161. Can you give an idea of the volume of traffic on the north, as compared with the traffic on the west,—is it a half or a third? More than a half from the north.
2162. So that the western traffic is of considerable importance to this railway? Certainly.
- 2162½. If the statement I mentioned is correct, and there will be no traffic coming to the line from the west, it will have a very detrimental effect on its paying prospects? If the traffic does not touch the line at Millie or Woolabrar, it must touch the line at Narrabri.
2163. But that has nothing to do with the paying qualities of this section of the line? No.
- 2163½. Are there no other stock or station agents here besides your firm? Two other firms.
2164. Do you do the largest business? I cannot say.
2165. Is the business fairly distributed? I believe it is.
2166. Can you state the quantity of stock passing through your hands which would be carried by this railway? I can on reference to my books.
2167. Can you state the quantity approximately? I would not attempt to do so, without referring to my books.
2168. Yesterday, between Kerramingly and Moree, the Committee passed twenty-three waggon-loads of wool—would that all come through Moree? Yes.
2169. From what direction—north-east and west? From the north chiefly. That would be wool from stations towards the border, to which places carriers would not get until they had cleared all the wool out here.
2170. Is any stock shipped at Narrabri coming from as far north-west as Mungindi? Yes.
2171. By what route do they travel? They travel through Moree generally. There is another road used by Messrs. Bucknell Brothers of Yarrawa and Burrandoon, and then they travel in by Moree and Millie. They strike a line at Millie generally. Yarrawa sheep come here. Other persons could not use that road, because it passes through private lands.
2172. With the exception of that station, which can travel its stock through its own holding, the great bulk of the stock coming from Mungindi for shipment at Narrabri, comes through Moree? The whole, with that one exception.
2173. Does stock to the south and west of Mungindi, aiming for Narrabri, go through Moree? They would go by Collarendabri.
2174. Anything south of Mungindi would probably go to Narrabri *via* Collarendabri? South of Mungindi I fancy they would not go to Collarendabri. They would go across the watercourse to Moree. They would not get so far west as Collarendabri.
2175. Do you know Mogil Mogil? Yes.
2176. There is a line of road from Mogil Mogil to Moree, and about half-way along there is a branch road to Millie? Yes.
2177. Is that the road you refer to? Mogil Mogil stock, instead of going by that road, would go by Thalaba Creek, and would strike for Millie or Narrabri; I believe they would go to Narrabri.
2178. Down towards Wee Waa? They do not get so far south as Wee Waa.
2179. They make as straight as they can for Narrabri. Yes. Their nearest point on this railway would be Woolabrar.
2180. Would any of the stock which now goes through Moree tap the line at any point nearer Narrabri than Moree? The Mungindi stock would still tap at Moree.
2181. Does any Queensland stock come across there now and go on to Narrabri? Yes.
2182. Would the extension of our railway system to Moree enable us to extend our trade operations the same distance further into Queensland than we do now at Mungindi, bar the interposition of artificial barriers? Bar the border tax I believe it would.
2183. But even now, independent of the border tax, you are getting Queensland stock? Yes, and Queensland wool.
2184. So that it is reasonable to suppose that if we extend our railway to Moree we shall extend our line of trade the same distance further into Queensland? Yes, if the tax is kept as it is. I believe you will extend your trade just 60 miles.
2185. On the other hand if the tax is increased it will mean a diminution of our trade? They could impose a prohibitive tax.
2186. There would be less trade over this line to carry? Less Queensland trade.
2187. That holds good with reference to all Queensland trade from Mungindi right round to Goondiwindi? Yes.
2188. Can you give any idea of the trade that we are getting from Queensland—say between Mungindi and Goondiwindi, and which goes down through Moree to Narrabri? Your trade to Narrabri extends on the Goondiwindi route a distance of about 48 miles in this direction.
2189. Are we not now, with the exception of those stations you quoted this morning, and whose produce goes to Warwick, at different points attracting Queensland traffic to Narrabri, *via* Moree? That is on the Mungindi route, not on the Goondiwindi route.
2190. Where do we leave getting Queensland trade going up the McIntyre from Mungindi? From Mungindi you get the wool from Messrs. Livingstone and Paltridge leasehold, and the Australian Pastoral Company send their wool which is shorn anywhere adjacent to Mungindi.
2191. Do we go up the McIntyre as far as Kunopia? Yes.
2192. Opposite Kunopia, how far do we extend into Queensland? That is just about as far as we do extend. Opposite Kunopia there is a holding called Newinga which has sent its wool this way. But when you get higher than that point it pays to send wool to Cambooya or Warwick.
2193. Is the Queensland trade that we now get at Narrabri *via* Moree between Mungindi and Kunopia? Any Queensland trade more to the north-east goes to Cambooya.
2194. And anything to the south-west of Mungindi would go down *via* Mogil Mogil or Collarendabri? Yes, and into Millie.
2195. It would have no effect upon the railway, except that it would not come *via* Millie? Yes.

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2196. From your evidence, the western trade which it may be presumed will come through Millie is of considerable importance as regards the paying capabilities of this line? The stock trade—yes.
2197. The wool, of course, too? Wool might possibly be hauled to Narrabri by team, but I do not think there is any doubt that all the stock would truck at Woolabrar.
2198. Have you travelled the road between Moree and Narrabri frequently during bad seasons? I have seen it in a bad state.
2199. Have you ever been compelled to go by the Foot Hill Road or the wet weather road on the east of the "red" line? I have travelled that road—not on account of the muddy state of the travelling stock reserve, but because it suited my business to go by that way on those occasions.
2200. As regards the travelling, is there very much difference between the travelling stock reserve and the "red" route? That line is about half-way between the mountain or wet weather road and the travelling stock route.
2201. That line runs virtually about 10 miles from the travelling stock route? In my opinion, the black soil along the "red" route is not so loose as it is along the travelling stock route.
2202. And the watercourses are more confined? The watercourses are more defined. They shallow and open out over the country as you get lower down. As you get to the mountain the creeks are more defined, as you get to the plain the watercourses become shallow and water overflows.
2203. From that point of view, irrespective of having a direct line, you think it desirable to construct the railway on that better country? In my opinion, it could be constructed at less expense there.
2204. And made and worked at less expense? Certainly.
2205. You see the black dots on the map showing the proposed stations along the "red" line;—from your knowledge of the runs, do you think the stations are placed at convenient distances or points to tap whatever traffic may come from the east or west? They appear to be.
2206. Do you think Edgeroi, Woolabrar, Gurley, and Tycannah Stations are pretty well situated? Yes. I do not know the exact locality of Gurley Station or the distance from Bumble. There would be a good deal of traffic to Bumble which is on Courrallic Creek.
2207. In a direct course, it is about 8 miles from the travelling stock reserve? I think it is well situated.
2208. If it is thought by the departmental officers that the traffic from the west *via* Millie would be best served by a junction at Woolabrar, do you endorse that view or do you think it would be served better at Gurley? Woolabrar would be the station for the Millie and western traffic. It is more suitable than Gurley.
2209. Will it be necessary to provide as ample a water supply at these various stations as there is on the stock route? I think the department has incurred a lot of unnecessary expense in providing water on the travelling stock route.
2210. The drovers do not think that? They do; they are going mad over the rates which they are charged. They are kicking up a great row.
2211. They are not complaining about the water being provided, but only that the cost of maintaining the water supply involves very high rates? Some of the tanks were never asked for or required.
2212. It would be very awkward for the travelling stock if the tanks were not there? I refer to the tank at Tycannah where there is natural water which will last as long as the grass on the road will last.
2213. As regards the others? The tank which was put down last and against which all the outcry was raised was never asked for.
2214. In the opinion of yourself and many other persons the water supply at Tycannah is useless inasmuch as there is always plenty of natural water there? In my opinion it was an unnecessary expenditure of money. The people cannot afford to pay the rates—they are paying so many on the route—particularly a small man who has his 1,000 sheep to send in.
2215. It is better to be taxed to preserve the sheep than to lose them? When there was not any natural water there was no grass to sustain stock. The public watering department has taken possession of the natural water holes.
2216. In view of the large number of stock which may go to Woolabrar station, would not the Government have to provide large watering accommodation? They would have to provide watering accommodation of some character, but I do not think there is any occasion to incur such expense as has been incurred on the other line.
2217. You think Woolabrar is the station, next to Moree, at which most trucking will take place? Most trucking of sheep which will strike the line at Millie.
2218. And whatever water accommodation is required at the other stations will be comparatively small and inexpensive? At present there are very few settlers at either station.
2219. You heard the evidence of Mr. Wood as to what he thought was the trade line as between this railway and the proposed railway to Inverroll—do you agree with his views on that point? Yes; that is a line about 20 miles this side of Warialda.
2220. Do you think the betterment principle is a fair principle to introduce? Yes.
2221. You think the people of the district would be content to come under the betterment principle so as to get a railway? I cannot say what their feeling is in the matter.
2222. Presuming that the principles applied to the construction of this railway, do you think the land boards and land courts would be the best tribunal to fix the various zones for the operation of the betterment principle? I do.
2223. Better than the ordinary law courts or arbitration? I think the land boards would be the proper tribunal to deal with the question primarily, of course with the right of appeal to the higher courts.
2224. The land boards give general satisfaction, don't they? Yes.
2225. Would you like to express an opinion as to the *bona fides* or otherwise of the land which has been taken up and which is tinted blue on this map? I do not know anything about that question, I am not a land agent. I confine myself entirely to stock.
2226. I think you stated that if the line is constructed a very large increase will take place in the trade in a very short time? I anticipate a very large increase.
2227. Presuming that in the future it is thought desirable to extend the railway system towards Collarendabri for the purpose of securing the trade more effectually, at what point do you think it would branch from the main line—at Narrabri or at Woolabrar *via* Millie? From my knowledge of the country I think from Woolabrar *via* Millie, because it would pass a great number of settlers.

2228. Is the country from Collarendabri *via* Millie to Woolabrar less liable to flood than the country from Collarendabri *via* Gurleigh Point to Narrabri West? My knowledge of the country about Gurleigh Point is not sufficient to warrant me to answer the question.

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2229. You have had no experience of road-making? Only what I have gained as council clerk during the last two years.

2230. Is it true that one particular street in the town has swallowed up 12 or 24 inches of river gravel? I cannot say that it has. If about 6 or 9 inches of gravel are put on black soil and a good heavy waggon passes along the wheels will go through the gravel and naturally bring up in the spokes black muck, and the result is that with waggons continually passing along the road you have all muck on top.

2231. That would be in some low portions of the town where there were no water channels? Where there was no drainage.

2232. With water channels a small amount of gravel on black soil will make a fair road? It will if it is not cut into before it sets.

2233. If it is proposed to put 3 inches of river gravel or ordinary ballast under this line with, of course, proper waterways on either side, will that quantity be sufficient? I am not a railway engineer. A railway is entirely different from a road, on a railway the weight of the train is distributed over sleepers but on the roads the weight of the waggon is concentrated on a 3 inch tyre.

2234. You think it is possible that the line might be worked with safety and economy with 3 inches of metal on the surface of the land? I could not express an opinion about what ballast the line may require.

2235. Is there any other point on which we have not touched? Owing to the establishment of all these water reserves on the travelling stock reserves from Moree to Narrabri the route is a very expensive one to travel. In ordinary seasons there is no doubt that all the sheep which are going to market would be trucked. I think that hardly any sheep would pass from Moree and travel by the route even in exceptionally good seasons we have water rates to pay and that makes travelling very expensive.

2236. Unless they have some reason to keep the sheep back and not to get to market? Yes.

Mr. Charles O'Hara, contractor, Moree, sworn, and examined:—

2237. *Chairman.*] What is your occupation? I am a contractor. I have resided in Moree eleven years.

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2238. *Mr. Davies.*] What contracts do you carry out? I contract for bush work—repairing Government bridges or sinking wells for water.

2239. Where do you generally get the timber for your bridges? It depends on the character of the bridge. If we require very long timber we have to go beyond Narrabri, but short timber such as 20 feet long we get at Terry-Hic-Hie.

2240. Can you get sufficient timber for this railway anywhere in the locality? There are any amount of sleepers at Terry-Hic-Hie and Bogamiddi, which is on the Warialda Road, about 30 miles distant.

2241. Is that the same place that the Mayor spoke of as "Redbank"? Almost.

2242. You think there will be no difficulty in getting sleepers? Not for an ordinary light line.

2243. Not squared sleepers but half-round split sleepers? To get half-round split sleepers there would be no trouble whatever.

2244. What would it cost to deliver sleepers of that character at certain points on the line? Half-round sleepers sawn in two will, I think, be delivered at 3s. per pair. Hewn sleepers would cost 9s. a pair.

2245. That estimate would include the carriage of the sleepers from the stump to the various points on the line? Yes.

2246. Ballast can be secured, I presume, readily for this line? I think the ballast would have to be brought from the Namoi.

2247. Gravel ballast? I believe you can get gravel ballast much more cheaply from the Namoi than metal ballast.

2248. What will it cost per cubic yard to deliver this ballast at different points? I am not prepared to answer that question.

2249. There will be no difficulty in getting a quantity of the ballast? None.

2250. Have you frequently travelled the travelling stock reserve? Yes.

2251. Do you know the country through which the "red" line goes? Yes.

2252. Do you know the difference in the length of the two routes? Only from the plan on the wall.

2253. From a national standpoint, which line do you think would be the best to serve this district and secure the trade of our own Colony as well as the portion of the trade of Queensland? Looking at the question in a broad sense, I think, the permanent survey would meet the requirements of the community better. I am acquainted with the district within a radius of 200 miles, and the only agitation against the permanent survey is on the part of the Thalaba people, and the people north-west of the Barwon. I am prepared to allow that the wool from the Lower Barwon and across the Barwon can be brought to Woolabrar at less expense than to Narrabri. It will be shorter for instance to bring the wool from Burdeoboreena and Dunambral stations to the stations on this line than to Narrabri.

2254. What is the difference in the distance? A distance of 44 miles as against a distance of 55 miles.

2255. Are you of opinion that the squatters and selectors would prefer to shorten their journey by 20 miles? I think they would be very foolish if they did not.

2256. You think it is a natural consequence that they would go to the nearest point to truck their sheep? That would depend on circumstances. It might be 18, 20, or 30 miles. It would pay them better to drive them 30 miles with plenty of water and feed than to drive them 20 miles without feed and water.

2257. The line would secure the carriage of the wool? Certainly.

2258. They can drive their sheep, but the carriage of the wool is a very different matter? Yes.

2259. You think that the distance would secure pretty well all the wool which comes from that direction? Yes.

2260. Do you expect a large increase in the trade if the railway is extended to Moree? Yes. On this point I have a few figures which I will state for the consideration of the Committee. Previously to the imposition of the prohibitive duty on Queensland wool, all the wool from the Australian Pastoral Co's. stations over the border came to Narrabri through Moree; but since that duty was imposed it has gone to Yuelba, the terminus of the southern line in Queensland. The five stations of the Australian Pastoral Company

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Company shear about 1,000,000 sheep—they might shear 1,250,000. All this wool is taken to Dareel station and scoured. Previous to the imposition of the Queensland duty it was sent *via* Moree to Narrabri, but since it has been imposed it has been sent to the nearest Queensland railway station, a distance of 200 miles. If the railway is extended to Moree from Narrabri that wool will be sent here, a distance of 85 miles—it is 75 miles to the border, and 5 miles across the border to Dareel station. There would be a saving of 100 odd miles in favour of coming this way. I instance Dareel as being the largest station on that side of the border. Of course there are many selectors.

2261. Who shear from 50,000 to 80,000 sheep? From 25,000 to 50,000 sheep.

2262. As regards the trade on this side of the border, how would it be affected by the construction of this railway? We will gain.

2263. To a considerable extent? All the north-western trade instead of going to Narrabri will come here, except down Pian Creek, from which some wool will go to Narrabri.

2264. *Chairman.*] What is your definition of the "north-western district"? North-west from the present point.

2265. From Mungindi south? Yes.

2266. *Mr. Davies.*] You regard Moree as the central dépôt for receiving the whole of the produce pretty well from the Queensland border and across that border? Yes; take Tullooona and Gunyerwarilda. It is 65 miles from Moree to Tullooona, and I suppose about 56 or 57 miles to Gunyerwarilda, but it suits these stations to send their wool to Tamworth. The road from Moree is a very expensive one to travel—you have to pay for water and feed; you do not get anything for nothing on this line. That wool would come to Moree instead of going to Tamworth if the terminus were extended to Moree. The Commissioners would get additional trainage on that wool.

2267. What does it cost per 1,000 to travel sheep from Moree to Narrabri? I do not know, I have never travelled sheep on this line, but I know that it is a very expensive line.

2268. *Mr. O'Sullivan.*] How long is it since the Australian Pastoral Company stopped sending their wool down here? This year is, I believe, the first since the duty was imposed. They have not stopped all the wool from their stations down this way. I could not say whether any wool has gone through this year—I believe none has gone through.

2269. Do they contemplate shifting their shed into New South Wales and shearing here? I could not say.

2270. Have you heard a report to that effect? No.

2271. Do you know anything of the Collarendabri country? Well.

2272. Do you think a branch line running out from Boggy Creek, at Woolabrar, up to the end of the flood-waters would serve that district well? Yes; it would serve the convenience of a few, I believe, but I could not say that it would pay.

2273. Would it be likely to attract traffic from Angledool and out that way? From my knowledge of the country I think a line to Walgett would be more likely to attract traffic from the Queensland border at Angledool and the other stations.

2274. Until a railway is constructed to Walgett I presume it will come towards Narrabri from Angledool? Decidedly.

2275. Then a short branch from this line which would serve Millie and go out westerly would be likely to receive a large portion of that traffic? That is a difficult part of the country to speak of with certainty. If the Barwon River is high the steamers take the principal portion of the wool. It all depends upon the state of the river as to which way it will go. If the river is a banker they avail themselves of the chance, but if it is a dry season they haul their wool.

2276. If the river were high the wool would go to Adelaide? Yes.

2277. But still a branch from this line would serve the country within 20 or 30 miles of Collarendabri? Decidedly.

2278. Between Collarendabri add say 20 miles out the country is subject to floods? No. Once you cross the Thalaba you are pretty free from floods. It is very rarely that the river is over the banks at Collarendabri.

2279. Have you travelled much by the mountain road to Narrabri? Yes; I have travelled along to Gurley by Myall Hollow Road.

2280. Did you ever hear that in wet weather the traffic comes by that way from Narrabri to Moree? In 1890 nearly all the goods came by that way.

2281. Because the travelling stock route was too flooded? Not altogether too flooded, but too heavy. It is impossible to drive a team in this country when it is thoroughly wet.

2282. I presume the floods would be likely to impede the railway traffic also? No; not with a fairly good service.

2283. Supposing the railway were extended by the travelling stock route and you had a flood like the 1890 flood, would the flood-waters be likely to damage the permanent-way and impede the traffic on the line? I do not think so. There is no rush of water on the travelling stock route as it is as level as this floor. It would be merely a matter of leaving sufficient openings for the water to drift west. It runs slowly west.

2284. You would require to have a large number of openings? I believe you would.

2285. More than on the "red" line? Yes; but I do not say that they would be as expensive as on the "red" line. You would require to build some substantial culverts on the "red" line, because there are numerous creeks to cross. The culverts would have to be 20 feet high at the very least—across Waterloo, Myall Hollow and these creeks.

2286. I understand that there will be no difficulty in getting the sleepers from Terry-Hic-Hie and adjacent places? No; we can get any amount from Terry-Hic-Hie and other places along the edge of the mountains.

2287. *Chairman.*] Is there any timber to the west of the "red" line? No suitable timber.

2288. Would any of the timber to the east go in straight to Narrabri by the railway, or has Narrabri plenty of its own? I think it has a fair supply of sleepers.

2289. Not for building purposes? It has plenty for building purposes. For railway construction I do not think this timber is much good, it is not long enough.

2290. I think you said the direct route is the best for the district? I believe it is the best to serve the interests of the whole community.

2291. Do you think that at least half the trade which is expected to be run over the line would come from the west of Millie? Yes.

2292. If that is so, will it not be desirable in the interests of that trade to take the line a little further west? I did not quite catch your previous question. I consider that three-fourths of the trade will come from Moree and only one-fourth from the west.

2293. Do you think that the trade from the north of Moree will grow more quickly than the trade from the west? I am certain it will.

2294. There is more room for expansion to the north than to the west? Yes.

2295. Is the country generally between Moree and the Queensland border less liable to flood than the country west of Millie out to Collarendabri? I think it is about equal. From here to within about 8 or 9 miles of Mungindi it is fairly high ground; from Narrabri to Burran it is flooded country, and from there to Collarendabri it is high ground.

2296. When you get down to Mungindi and all the way down to Collarendabri it is more or less liable to flood? Yes.

2297. Which route do the stock now take going from Mogil Mogil to Narrabri? Up the Thalaba.

2298. That is *via* Millie? Sometimes they go *via* Millie and sometimes *via* Nowley and Boolcarrol.

2299. Presuming you wish to tap the Collarendabri trade, would you go from Narrabri *via* Gurleigh Point or from Woolabra? I should certainly start from Millie.

3000. Is there any other evidence you desire to give? No.

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C. O'Hara.
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Mr. Augustus Bernshaw Lomax, grazier, near Moree, sworn, and examined:—

3001. *Chairman.*] What is your occupation? I am a grazier, residing about 20 miles west of Moree.

3002. On the Mogil Mogil Road? Off the Mungindi Road.

3003. *Mr. O'Sullivan.*] What is the size of your holding? With my family we hold 10,240 acres of selected land.

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A. B. Lomax.
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3004. Ring-fenced, I suppose? No; it is subdivided.

3005. Do you confine your operations solely to grazing? Yes.

3006. How many sheep do you carry to the acre? Over a sheep to the acre.

3007. You can rely on that in a fair season? Always.

3008. Do you cultivate anything at all? This year I have cultivated 25 acres. Eighteen acres of wheat, an acre of prairie grass, and 6 acres of oats.

3009. Is the wheat for milling or for hay? For hay for our own use, and any surplus we may sell.

3010. Does it produce wheat well? It has produced a magnificent crop this year.

3011. Free from any trouble? There is a little rust, but not much in the crop.

3012. How many tons to the acre? I reckon it is 2½ tons to the acre, but other persons think it is more.

3013. You have shown some samples of the wheat to the Committee? Yes.

3014. Is the soil of the country round about similar to your own? There is a great deal of it. We have, ourselves, about 2,000 acres of the same soil that would do for cultivation.

3015. What colour is it? The bulk of our soil is black soil.

3016. Any chocolate soil out there? Not really chocolate. We have hard sandy ridges.

3017. Is there much land out there for fit for cultivation? Plenty.

3018. You think that in the future, when population is more numerous and the markets are better, that land will be cultivated? Tens of thousands of acres in this district.

3019. The soil is fit for growing cereals, and the rainfall is sufficient to produce them? The soil is fit to grow anything.

3020. What is the rainfall? Last year it was about 27 inches.

3021. Do you send your sheep and wool through Moree into Narrabri? Yes.

3022. A railway to Moree would serve you admirably for trucking your sheep or despatching your wool? Yes.

3023. And what would suit you would suit all your neighbours? I think so.

3024. Are there any *bona fide* selectors out that way? A good many. All through the district there are plenty, many of them with large holdings.

3025. Is there likely to be any rush for land when the leases are thrown open? Certainly.

3026. Have you heard of any inquiry for land out there? Yes. I have heard it stated that when the leases are thrown open there will be a great rush for land.

3027. Are there many young men in the district ready to take up land? I think there are a certain number, but I believe that most of them will come from other districts.

3028. There have been men from Victoria up this way inquiring for land? Numbers.

3029. Do many of your neighbours cultivate? No; except in small areas. From 2 to 6 acres have been put in this year for the first time.

3030. I suppose it is more profitable at present to run sheep? Yes.

3031. Do you cultivate any fruits? I have a garden about 2½ acres in area.

3032. What fruits flourish there? Oranges, lemons, apricots, peaches, grapes, almonds, and nearly all fruits.

3033. I suppose what would grow about Inverell would grow up here? I fancy so. The crop may not be so reliable on account of the drier climate, but anything will grow.

3034. I suppose there is no doubt about the settlement out your way and round this region being of a permanent character? I think not.

3035. It is stated that if a block of country is open it is applied for by from fifteen to thirty persons, and that most of the selectors out this way have taken up the maximum area? Yes; where it can be got. I may say that I have property within the Queensland border. It is close to Dareel, and is about 15 or 16 miles from Mungindi.

3036. Would you bring the produce of that property down this way? Certainly.

3037. You are not doing so now? Last year I did, but this year I sold the sheep in the wool. This is our shipping-place if we can ship here.

3038. If the railway is extended to Moree will you ship the produce of that station here? Certainly.

3039. Always provided that our friends across the border do not erect a barrier? It would suit us better to pay a moderate duty in order to ship here. I brought my sheep over last year and shore on this side, and I can do the same again.

- Mr. A. B. Lomax.
24 Nov., 1893.
3010. If the railway is extended to Moree do you think that other persons at that particular point will send their produce over here? I think the Australian Pastoral Company will study their own interests and get to the nearest railway station.
3041. I suppose that in view of the trade coming from the north you think that the most direct line to Narrabri ought to be adopted? It seems to me that it is a matter of policy for the Government and not for us to consider.
3042. Does not the 6 extra miles of carriage touch your pocket too? The shortest route would suit us best.
3043. You know something of the people in and to the west of Millie? To the north of Millie.
3044. Knowing the country and the settlement is it desirable to bring the railway nearer to the Millie people, or would the direct route be best for all concerned? The direct route would not be best for them. It would be best for us.
3045. Is the trade going to Moree equal to the trade going to Millie? I think the trade going to Moree will be much larger.
3046. Very much? Yes; if ever a line goes to Walgett the Collarendabri traffic would go there.
3047. We should lose it from here? You would lose a good deal of it down this line, but I do not see much gain in deviating from the straight route.
3048. But presuming that no railway was constructed to Walgett, for some considerable time, do you think the Collarendabri traffic would go through Millie and tap this line at Woolabrar station? I do.
3049. You do not think that it would continue to go to Narrabri? No.
3050. Some people seem to like the mud? I do not.
3051. Is there any other point you desire to touch on? I think that when the railway is constructed to Moree the character of the stock grazed will be very different. I fancy it will pay better to go in more for fattening when we can get our stock taken away. Our trouble now is to get the stock taken away. It is expensive to travel them down, they lose flesh and the returns are uncertain; but if we had a railway and we could send two or three trucks of stock at a time it would pay us to go in for fattening.
3052. By what road do you bring your produce from your Queensland station to Moree? By Mungindi.
3053. Does not that road follow Gil Gil very closely? Yes.
3054. Is it a very wet road? In flood-time for about 20 miles from Mungindi it is wet. We have a number of creeks and rivers to cross.
3055. After that it is fairly good? Yes.
3056. As good as the road between Moree and Narrabri? About equal. The same class of country, but more timber and the same sort of mud.
3057. You think that any railway communication in the direction of Collarendabri should go from Walgett rather than from the Narrabri or Moree line? I do not say that. I think a branch off this line would serve them well.
3058. Do you think that that they would be better served by a branch off this line at Woolabrar or a line from Narrabri West, *via* Gurleigh Point? From Woolabrar. The bulk of the the country there is good high dry country.
3059. Higher than on the more southern route? Yes.
3060. Is there anything else you desire to say? No.

Mr. John Jurd, selector, near Moree, sworn, and examined:—

- Mr. J. Jurd.
24 Nov., 1893.
3061. *Chairman.*] What is your occupation? I am a selector living about 16 miles west from Moree.
3062. *Mr. McCourt.*] What is the size of your holding? About 7,000 acres.
3063. Are there many selectors around you? Yes; I have also a holding near this line on the mountain side.
3064. Do you know the country to the east of the line? I do.
3065. Of what nature is it? There are many different kinds of land. There is a good deal of good agricultural land and there are patches of grazing land. There is some fine timbered land, and there is some scrub.
3066. Would this "red" line lead to any increase of production in the country round about you? I think it would, because the distance from market is the principal reason why no soil is cultivated.
3067. The distance from market regulates the cultivation, but the land is suitable for cultivation? It is as good as any on this side of the range.
3068. Are all the holdings round you of about the same size? No; 6,000 or 7,000 acres to the west of Moree, and about 1,200 acres up there.
3069. What is the smallest area on which an ordinary family could live about here—say within 20 miles? It all depends on what they went in for. If they went in for cultivation in a favourable season it would not take a deal of land. I think that 80 or 100 acres for cultivation would be quite sufficient to keep any family in a favourable season.
3070. But taking one season with another? I think that is as much as any family can cultivate.
3071. For grazing purposes, how much would it require to keep a family? They would want to take up a couple of thousand-acres.
3072. You think that 2,000 acres would be enough? I think that they could make a living in a favourable season with that area.
3073. In the event of the large holdings being cut up would there be a demand for the land? Yes; it would soon be gone.
3074. If the large owners were to sub-divide their estates into 1,000-acre blocks and were to sell the blocks on terms they would find purchasers? I think so.
3075. Would the construction on this line bring that about in any way? I think it would.
3076. *Mr. Ewing.*] I presume you only want to speak in regard to the farming capabilities of the district? Yes; as to the quality of the land on the eastern side of the line.
3077. You do not know anything about railway construction? Nothing.
3078. You know nothing about the effect of floods on railway line—the height or the velocity of water? I could form a good idea.
3079. I suppose you would not express an opinion without definite information? I do not think there would be any danger of the water interfering with a railway from Moree to Narrabri.
3080. Any expression of opinion from you, not being a professional man, on that point would be idle? Yes.

Mr. J. Jurr.
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3081. Have you heard the land on the east of the "red" line described as being poor? No.
3082. From the foot hills to the "red" line, what is it as a rule? It is very rich land. The richest in the Colony, I think, is to be found on Gurley, Edgeroi, and Killarney, principally Edgeroi.
3083. Quite as good as the rest of the district? I think it is superior to most of the district.
3084. How far is it from the foot of the hills to the railway? It would vary from about 12 to 20 miles.
3085. In ascending the hills does the soil get poorer? Yes: the hills are composed of sand and rock, but there are valleys running between the hills where the soil is very rich. No richer land could be cultivated.
3086. What you wish us to understand is that there is a valuable tract of country to the east of the red line? Yes, for cultivation.
3087. Is it as extensive as that to the west? It is more adapted for grazing to the west.
3088. I presume you would like the most direct route to market? Yes.
3089. You regard the district as a good one? I do.
3090. It is capable of great development? Yes.
3091. This railway would help to develop the district, I presume? Yes.
3092. *Mr. Suttor.*] Which do you consider the best route to adopt? The direct route.
3093. You have not considered the other routes at all? Yes, often. I have always been in favour of the direct route.
3094. *Mr. Davies.*] How far off is your property on the east of the "red" line? The nearest point, I think, would be 16 miles. It is on Terry-Hie-Hie Station, at the head of Terry-Hie-Hie Creek. It is about 10 or 11 miles in a direct line from Edgeroi.
3095. Would you consider a railway station within a distance of 12 or 15 miles from your holding a good service? Yes. It would not make such a great difference to me or any one there. It is only 34 miles to Narrabri. It would not benefit my holding to any great degree compared with what it would benefit the holdings on this side where there are a good many selectors.
3096. You regard any settler within 12 or 20 miles of a railway station as being fairly served? Certainly.
3097. What are you doing with your land on the east of the "red" line? I have a son and a brother-in-law cultivating the land for me, I have cattle on it.
3098. It is being partly cultivated and partly run with cattle? Yes.
3099. Fat stock to send to market? Yes.
3100. Is the country on that side good for fattening stock? Yes; the country ringbarked is very good.
3101. Is your land cleared? Some of it is.
3102. On the west, how far is your holding from the Moree terminus? Sixteen miles due west.
3103. So that you would be served by the line at either end? Yes.
3104. Do you know that a line by the stock route would be much longer than a line by the "red" route? Yes.
3105. Would you regard the "red" line as a national or pioneer line? I believe it would be the better line to serve Moree and all the country to the north east and west of Moree.
3106. The bulk of the produce—stock and wool—must come from Moree? Yes.
3107. Would it be a fair thing to construct a line which would be 6 or 6½ miles longer than the "red" line at a considerably increased cost? I believe it would be very unjust to all the people to the north-east or west to construct a line 6½ miles longer than it need be.
3108. It would be unjust to the producers because they would have to pay a higher freight? Yes.
3109. Do you think a line to Moree would largely increase the traffic? I think that if ever there is inter-colonial freetrade you will get a deal of Queensland wool brought into this Colony.
3110. But if the railway system is extended to Moree by the "red" route, will it secure the produce of our own Colony? As you have done at Narrabri, so you must do at Moree.
3111. But a large portion of the traffic finds its way to Tamworth? I do not think that any great deal goes—only from up Yelman and Warialda way.
3112. That would not come here if the line were constructed? I believe a good deal of it would come.
3113. You think the "red" route is drier and better of the two? Yes; but the other route is dry enough. I think it would be a far more convenient line to construct. You would be likely to get water by sinking.
3114. Do you think the Millie people would be very much inconvenienced if they were 12 or 14 miles from the railway? As for the way which is proposed for the Millie people to strike this railway they might as well go on towards Narrabri.
3115. What is the distance between Millie and Narrabri? About 40 miles.
3116. The difference between 40 miles, and 12 or 15 miles from Millie to Woolabrar would be a considerable advantage to them? From Millie alone I do not think it would make much difference; but from anywhere below Millie it would pay them to go to the nearest point.
3117. Is it not a natural thing to go to the nearest point with wool or stock? Yes.
3118. How far are you from Millie? About the same distance as I am from Moree; about 30 miles.
3119. *Chairman.*] Where do you send the cattle you rear on your eastern selection? I trucked them to Narrabri the other day.
3120. Would you truck them at any station along this "red" line? Certainly, if there were a trucking yard at Edgeroi.
3121. There is a good deal of settlement on the creeks to the west of Millie? Yes.
3122. I suppose if you were located to the west, you would like to have the railway dragged over a bit towards you? Certainly.
3123. But being located to the east you do not want it to be taken any further away from your selection? No.
3124. Do you think the line will lead to a large development of the country to the north of Moree? I do, although it is all pretty well developed now. There is very little land but what has been secured.
3125. Do you think the development of the country is likely to be more rapid and extensive to the north of Moree or to the west of Moree? I could not say. The country is equally good. It is a matter of opinion.
3126. Is the country to the west of the river generally more liable to flood than the country to the north of Moree? I do not think we have anything to fear from the floods on the other side. A very severe

- Mr. J. Jurd. severe flood might cover some of the country, but there has never been any loss about the western district. About the border there were some floods in 1890.
- 24 Nov., 1893. 3127. If the departmental officers make a strong point of taking the line by the "red" route, rather than by the travelling-stock route, because the former would go through higher country and be less liable to flood, do you think they are correct in their opinion? I do not think there has ever been a flood on the travelling-stock route that would injure a railway. I am satisfied that there have been no floods on that route, nor would there be on the other.
3128. I suppose the travelling-stock route would be more liable to flood than the other route? Yes.
3129. The water-courses on the "red" route would be more defined and would not spread out so much? Yes. The line goes so very close to where they take their head from that you could negotiate them better.
3130. *Mr. O'Sullivan.*] You stated that the holdings on the east or the "red" line are small? Principally.
3131. Is it because a portion of that country is in the eastern division? It is not in the eastern division, but in the central division.
3132. Why are the holdings small? Most of them rely on cultivation, principally.
3133. Therefore they have not taken up the maximum area? No; up to 80, 100, or 200 acres.
3134. Does it arise, too, from the fact that much of the land is scrub? There is a good deal of scrub, but the scrub land is the very best land for cultivation.
3135. How much an acre would it cost to clear that land? It is not heavily timbered—it is not all scrub.
3136. Supposing the land is fairly well scrub land, what will it cost to clear the land for cultivation? I suppose about 50s. or 60s. an acre.
3137. Have you heard of any of this land being taken up in scrub leases? No. I do not know where it is open.
3138. Do you think it is likely that after all the good land is gone there will be some settlement on the scrub land in view of the fact that it will cost only 50s. an acre to be cleared? I believe it will all be taken up for cultivation before many years.
3139. You are a practical farmer as well as a grazier? I have done a good deal in both lines, at one time.
3140. What will it grow over there? I have seen as good corn as ever I saw up that creek. I have had over 100 bushels to the acre on 2 or 3 acres.
3141. Was that a fair specimen of the land? It was exceptionally good, and I happened to have a good season.
3142. I suppose a fairly good piece of land would give about 60 or 70 bushels to the acre? About 40 bushels very fair land will yield. With a good season the yield will be double.
3143. Is it good for growing wheat? I have seen wheat grown there, but it has always been turned into hay. It is too far to do anything else with it.
3144. It does not pay to grow wheat for milling? No.
3145. But with the aid of this railway you think it will pay? I do.
3146. *Chairman.*] Is there any other evidence that you desire to give? No.

Mr. Samuel Lewis Cohen, alderman and land agent, Moree, sworn, and examined:—

- Mr. S. L. Cohen. 3147. *Chairman.*] What is your occupation? I am a land agent.
- 24 Nov., 1893. 3148. Are you also a stock and station agent? No.
3149. You are an alderman of the town? Yes.
3150. *Mr. Ewing.*] How long have you lived here? Nearly eleven years. I was Crown lands agent for seven or eight years.
3151. You have been in private practice for four years and have a full knowledge of the district and its land transactions? I think so.
3152. You know the railway route under consideration? I know the route by the plan—it is within our district.
3153. Can you offer any opinion as to the best route to adopt? The travelling-stock route is longer and I do not think, unless embankments are constructed, a railway could go over certain parts of that route in flood-time. I think that if the line were laid at a low level in places the water would be high enough to get into the engine. I have seen the water up to a horse's belly on the other side of Tycannah Creek.
3154. I ask you whether you knew anything about the routes and you are describing the stock route—do you know the other route? No.
3155. You can express no opinion in regard to the body of water on that route? No.
3156. You speak of the water being very deep on the travelling-stock route, is it in some depression or approach to a creek or anything of that kind? No; away from the creek. Tycannah Creek overflows on to swampy ground. It runs up 3 or 4 miles to a place called Hold Fast.
3157. You are perfectly sure that the department is right in believing that with a huge body of water at times on the travelling-stock route a railway by that route would be expensive? I think so. The closer you get to the hills the higher is the ground.
3158. Would it be better for the people in Moree to have the "red" line? Better, most decidedly, as there will be less haulage.
3159. The "red" line is better than the other because the haulage is shorter? Yes.
3160. Do you approve of the Government constructing the line as a road? Yes.
3161. Is the settlement fairly general in the district? Yes.
3162. The people, as a rule, hold on to their land if they can? Yes.
3163. Is there much transfer of land going on? No; there never was a great deal in this district.
3164. Do you think, as a rule, the people are trying to hold on to their lands? I have been in thirteen or fourteen land districts and I have noticed here that the people when they get hold of a piece of land, if it is good, are more inclined to stick to it than are the people in other places.
3165. The settlement is as genuine here as in any other part you have been in? Yes.
3166. You believe the construction of this railway will develop the district considerably? No doubt it will.
3167. Is it possible that a good deal of agriculture will be carried on here? Yes; I think there is a good tract of land that can be cultivated; but of course the majority of good land—what I should call agricultural land—has been bought at auction years ago, and the land which might be fit for agriculture and the

which the selectors would take up unfortunately the Government are proclaiming as reserves from sale other than auction sale, and the selector has not a chance.

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3168. You believe there is good agricultural land in the district, but the selector does not get a chance to take it up? Yes.

3169. Is Moree the depôt for an area of country large enough to justify its connection with the main line? I think so.

3170. Do you think that by going to Millie it would enable Millie to pick up much of the western trade? If they do not go to Millie they would go to Woolabrar.

3171. *Chairman.*] Do you know where it is proposed to terminate the line in the town of Moree? Yes.

3172. In your opinion is it a suitable place? Eminently suitable.

3173. Would that position give the department the command of a fairly good crossing in the event of any future extension to the north? Yes.

3174. You have heard no objection on the part of the townspeople to the proposed position of the railway station? No.

3175. Are not many of these selections mortgaged? I think a good many of them are.

3176. You are of opinion from your extensive knowledge that in this district settlement is not only *bona fide*, but is profitable if not more profitable than in other places which you know of? The areas are larger. In Riverina the people were satisfied to confine themselves to small areas—to 1,200 and 1,000 acres. But here the majority go in for the maximum area.

3177. Does that infer that people have had to find accommodation somewhere? Yes, in many instances.

3178. Is there any other point you desire to bring out? I think that by the construction of this railway all the vacant lands, especially those lands within a radius of 5 or 6 miles of the town, would be a very valuable asset to the State. I think it would be increased in value threefold. I know that land out of the town that could be bought two years ago for £2 an acre is bringing £20 an acre. I think that if the lands were thrown open and the people were given an opportunity to take up a selection, the Crown would be able to get £4 or £5 an acre, because the people would be able to cultivate the land and get their produce away.

3179. In the event of the railway being constructed to Moree, and its further extension to the north being desirable, to which point should it aim—Mungindi or Goondiwindi? I think the land from Moree to Mungindi is all pretty high, and there are a lot of settlers out towards Goondiwindi at Boobera.

3180. Do you think the extension should go between the two places or towards Boggabilla? I have not a personal knowledge of the country, but I should think that with the leasehold areas thrown open it should go about midway between Boggabilla and Mungindi.

3181. About Kunopia? You would have to keep up above that country, because it is all flooded.

3182. Subject to necessary deviations from an engineering point of view to escape the floods? Yes.

3183. *Mr. Dawson.*] What sort of land is this which you say would bring £5 an acre? That would be agricultural land.

3184. What would it grow? If you got a good season it would grow anything in the world.

3185. Is it any better than the land at Breeza? Breeza is all black soil plain.

3186. Is it any better than the land about Murrurundi? No.

3187. Do you know Wombi near Singleton? No.

3188. What would a selector grow on land for which he gave £5 an acre? He can grow corn and hay, and on the river frontage, lucerne, fruit.

3189. On the river frontage? On the back ground too.

3190. You would sell the land to strangers coming into the district. You would not sell it to a resident of the district at that price? I think a resident would buy it too. I think that strangers coming with a bit of capital from Victoria have taken up large areas.

Mr. Henry Joseph, manager of a brewery, and secretary to the railway league, Moree, made an affirmation, and was examined:—

3191. *Chairman.*] You are the secretary to the Moree Railway League? Yes.

3192. Are you following any occupation? I am the manager of a brewery.

3193. You desire to make a statement? I desire to make a statement principally with reference to the revenue that has been computed by the Commissioners. I have every reason to believe that their estimate is far less than we will receive. The estimate I have been able to make with the assistance of the Commissioners is also based on the existing trade. In 1891 I sent out a circular to every person who is likely to use the railway line, and I got 110 returns. These returns, so far from being exaggerated, I can prove to be far less than what is sent from the district now. For instance, the returns show that 175,000 sheep would be trucked over the proposed line, whereas I have a statement from the Railway Commissioners' department that 685,000 sheep are already trucked at Narrabri, and that of that number 55 per cent. come from this district likely to be served by the extension.

3194. Are you making sufficient deduction for those sheep which would go to Narrabri independent of the proposed railway? There is a very large margin. The estimate of 55 per cent. was made by Mr. Harper the officer who was sent up to inquire into the trucking. My original estimate was less than what the Commissioners estimate now. Their estimate then was £8,738, but their estimate now is £9,915. I calculate that the revenue will be very much larger, because not only as regards the sheep, but the returns in other directions that I sent down to the Commissioners were much less than likely to be realised. For instance, I sent down as the traffic from Sydney to Moree 2,563 tons of general merchandise. My return shows that two storekeepers alone receive over 1,100 tons. So that you will easily perceive that so far from my returns being exaggerated they were very much under the mark. The Commissioners have been cautious in estimating the probable revenue, and so far from the line being likely to lose £900 a year there is every chance of the Commissioners making a very large profit.

3195. Always supposing that the cost of line is not materially increased? Basing it on the expenditure they compute.

3196. I suppose that when Mr. Harper was up here recently on behalf of the Commissioners you were in communication with him? Yes.

3197. What means did he take to check the statements that were made to him—did he go to the storekeepers

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keepers himself? No; he told me the figures I had sent in, as far as he could ascertain, were largely under the actual results. But as regards the tonnage, perhaps I had a better idea of computing it than he had himself. The passenger traffic they estimated at 2,300 persons. That is a very low estimate, I think. I believe the fares paid by coach total more than that number.

3198. Does not the coach run sometimes without a passenger at all? It does; but on the other hand it has five or six passengers a day. I think a fair average would be three passengers each way.

3199. We met the coach going back empty yesterday? That may be the case one day, but on another day there may be eight or nine passengers on board. Six passengers a day would be 1,800 passengers a year, which at 25s. each would give a larger revenue than the Commissioners estimated.

3200. The people of Moree would not pay 25s. each by rail would they? No; I know the Commissioners have computed the passenger traffic from the returns of Nevertire Station, but that is not an analogous case. We are surrounded by contiguous large towns whereas Nevertire is not. I think there is every likelihood of the Railway Commissioners' estimate being exceeded by 25 per cent.

3201. Of course, the Commissioners admit that they have not reckoned for any increase of trade in their estimate, although there is likely to be an increase, and you desire to point out, in your opinion, their estimate would be very much exceeded? There would be an enormous traffic without allowing for any increase.

3202. How long have you been in the district? Nearly four years.

3203. I suppose, you have not moved much about the outlying portions of the district? Yes; I have been to Mungindi, Goondiwindi, Warialda, Bingara, and between here and Narrabri, by different roads on several occasions.

3204. You heard Mr. Woods' evidence as to where the line of trade will be drawn as between Moree and Inverell—do you agree with his statement? No; I think he is entirely mistaken. I am under the impression that the proposed railway from Glen Innes to Inverell was recommended by the Public Works Committee conditionally on the introduction of local rates which would be much larger than the ordinary rates charged by Moree. I have every reason to believe that so far from the traffic from this side of Warialda going to Inverell it would come from the other side of Warialda to Moree.

3205. What Mr. Woods said was that, presuming that the Inverell line were constructed and the Moree line were not constructed, then the Inverell line would draw traffic from 20 miles on this side of Warialda, but that, presuming that the Moree railway were constructed and that the Inverell line were not constructed, the Moree line would draw trade from 20 miles on the other side of Warialda? I was not aware of that.

3206. You would put the trade line further towards Inverell, because the Inverell line, if constructed, would be worked under a special rate system? Yes; I believe the Commissioners would far sooner have the traffic over this line on account of the grades and curves.

3207. They would get more haulage on the other line? I was informed by an officer in the Railway Department that the Commissioners would sooner have the traffic on this line.

3208. You have heard the evidence which has been given to-day on various points; is there any other matter on which you differ from any witness or that you think wants elaborating? I think there can be no comparison between the two routes. In the first place a line by the travelling-stock route would cost, according to the estimate of the Commissioners or the Works Department, which I have no reason to doubt, £54,000 more for its construction than the "red" line. That capital expenditure at 4 per cent. would involve an annual interest of £2,160; there would be a tenth or eleventh on the cost of maintenance to be added, which would bring the amount up to about £2,500. I feel sure that although there may be a little traffic which may possibly not come on to the direct line, yet it would never compensate, if it did, for the extra interest and cost of maintenance.

3209. Do you agree with the witness in thinking that the trade north of Moree is about equal to the trade west of Millie? The trade north of Moree would exceed the trade west of Millie to a very great extent.

3210. By how much—by as much again? A great deal more, judging from my returns nearly treble.

3211. From Millie to Sydney, you estimate that you would get 7,065 bales of wool—is it not a fact that since you got those returns, a large amount of wool comes in from the west through Millie which may not have come in through Millie at that time? I cannot say.

3212. Your returns show the relative trade in 1891 as being 7,000 bales of wool *via* Millie to Sydney, and 19,997 bales from Moree to Sydney, but not inclusive of the Queensland wool;—does that exclude all Queensland wool? I do not think I had a single return from Queensland.

3213. Have you not heard any evidence to-day that up to last year or so a large quantity of wool came in from the Australian Pastoral Company's property in Queensland beyond Mungindi? I tried very hard to get their returns, but they would not give any information. I am sure no Queensland wool is included in this return,—if there is it would be a very small percentage indeed.

3214. Is any New South Wales wool excluded? There would be a lot excluded. Some people never sent in any returns, even stations close at hand.

3215. You did not draw upon your imagination for the balance of your facts? No. The papers are signed by the runholders and selectors. With regard to the border tax, it is within my knowledge, although I cannot give the names of the stations, that wool does come over here, for I was at Mungindi recently, and I saw wool coming over. And naturally if they are enabled to get their wool cheaper to the railway terminus they will be enabled to pay a larger tax than £2 10s.

3216. Have you any idea what difference the carriers will make between carrying wool from Mungindi to Moree as against carrying wool from Mungindi to Narrabri? Fully a third.

3217. Would the wool going from Mungindi to Narrabri all go *via* Moree by road? I do not know, but I know that several pastoralists contemplate shearing their wool on this side of the border in order to avoid the payment of the tax.

3218. And bring their wool to Moree if the line is constructed? They will send it by road in any case.

3219. You do not think that any wool coming from the north of Moree would, for the pleasure of travelling over the travelling-stock route, pass by the railway station at Moree? I think it is bound to ship here.

3220. Will the same hold good with reference to fat stock? I think so. I have several letters stating that people have to sell their fat stock locally, but that if the railway were extended to Moree they would truck it.

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3221. Do you think the people who tell you in all their returns that they would send their produce by the line would alter their opinion if they knew that they have to contribute towards the cost of the construction of the line under the betterment principle? I do not think it would make any difference, because if they were included under the system it would be a secondary consideration whether they would send their stock over. I do not know whether the betterment system would apply beyond a certain radius of the town.
3222. That has to be decided, but it may embrace a very large area? A station owner on the Queensland border told me that he expected to save £500 a year by the railway coming to Moree. On the other hand, people may be injured by the line—the carriers for instance. It is possible that a carrier who has a little homestead here may have to shift his homestead, and yet his land will be subject to the betterment principle.
3223. That applies to the carriers whose base of operations is at Narrabri—they would have to make Moree the hub of their efforts? It all depends on circumstances. It depends upon where they trade from.
3224. Is it not the natural tendency as we extend the railway to force the carriers further back? I believe to the terminus. But there are carriers with their homes here who may be compelled to go on further.
3225. Do you think the betterment principle is a right one to adopt? I think it would be very difficult of application.
3226. I mean as a principle? I think a more equitable means of confiscating the contraband increment than the betterment system can be found.
3227. Presuming that the betterment system is applied, do you think the Land Boards and the Land Courts will be the best tribunal which could be used to arrive at an equitable decision as to how and to what extent the various parts of the district are benefited by the line? I do not know of any better body.
3228. They have given general satisfaction in dealing with land matters? As far as I am able to ascertain
3229. Have you heard any very serious objections to the application of the betterment principle in the district? Only from one gentleman. But I think the majority of those who will be served by the railway will be content to pay under the betterment system sooner than not have the railway, though they may think it a little harsh on them.
3230. I suppose the people in the district generally are awake to the fact that if the line is to be constructed at all, it is to be constructed under the betterment system? A great number of the persons I have spoken to are aware of that fact, and they are quite reconciled to pay a very small amount. I have heard only one person make an objection, and I think he is likely to explain his views to the Committee.
3231. It is estimated, after making due allowance, that about 6,000,000 acres will probably come within the betterment area, and although it is not intended by the Act to saddle the whole cost of the line on the district which is so benefited, it may be necessary to charge up to 75 per cent. Is there any other point on which you desire to express your views? With regard to the post office returns, I would remark that as regards gross revenue Moree Post Office stands twenty-eighth on the list for the Colony, exclusive of the metropolitan offices, and that in point of excess of revenue over expenditure it stands thirteenth on the list. Its revenue is within £40 or £50 of the revenue of the Narrabri Post Office.
3232. If in the near future you erect a palatial post office at a large cost, you will not be able to show such economical results then, will you? That will not enter into the income. In considering the relative returns the cost of the post office is not considered.
3233. Only the business which is actually done? Yes.
3234. How is it that if there is such a large and growing business done in connection with mail matter, the mail contract for the next two or three years has been let at a fifth less than it was let before? That is a very good point in favour of the railway. It shows that there must be a largely increased passenger and parcel traffic, especially as they intend to carry larger parcels than they formerly did by post. We have exported beer regularly to Mungindi, where it pays a duty of 37½ per cent., showing that the natural way for goods is evidently through this district rather than through Brisbane.
3235. *Mr. O'Sullivan.*] The Committee have observed many indications of progress in this town in the shape of new buildings, new banks, and larger hotels. Are these buildings the result of a belief in the coming of the railway, or the result of a natural growth and expansion of trade? I certainly think the very large business which they have been doing has warranted them in putting up the buildings. I believe the townspeople had no idea that the railway would come here in the near future when they put up those buildings. There is no doubt that the trade warranted the erection of those additions.
3236. How long is it since you have taken this forward stride? I have only been here during four years, but during all that time it has been progressing at the same rate.
3237. The people appear to be in comfortable circumstances? They do—more so than in any other town I have been in.
3238. Notwithstanding the prostration which was caused by the failure of the banks and the reconstruction of those institutions, the people seem to be enjoying all the good things of life here? Yes; very well indeed.
3239. Are you quite certain, as the secretary of the railway league, that the returns you furnish are perfectly reliable? The returns furnished are perfectly reliable, and the figures are quite under the mark.
3240. Your estimate is not like the estimate of the Progress Committee at Crookwell, which on examination had to be reduced from £35,000 to £9,000 a year? No.
3241. As far as you are concerned the figures are *bona fide*? Yes.
3242. And as far as you know, the persons entrusted with the work did their work honestly and faithfully? It was done directly between those interested and myself. Each return is signed by the person really interested.
3243. I presume the people know that if they have to pay a betterment tax they will have the benefit of the increment? Certainly. Most of the men have bought for a rise.
3244. Therefore in paying the betterment tax they are throwing out a sprat to catch a mackerel? One gentleman does not think it should be applied here for the first time, although he certainly approves of the principle.
3245. Are you satisfied with the position of the railway station? Yes. A meeting was held and the townspeople were unanimous that the station should be erected on the site which has been selected.
3246. In point of fact, you would leave the whole of that matter to the Government? Yes.

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3247. *Mr. McCourt.*] Have the Railway League expressed any opinion about the advisability of continuing the line to the Queensland border? That question has never been considered.
3248. Do you think the League would be favourable to such an extension? It all depends upon circumstances. The members of the League who live at Mungindi and Goondiwindi, would, no doubt, be in favour of the line being extended in their direction, but those who live in the town would like to see the terminus remain there.
3249. What is your own opinion? As soon as it can be shown that it will pay, I think the line should be extended in the interests of the country.
3250. Has the Railway League recommended the construction of the railway by any other route in 1890 or 1891? No. The main object has always been to get the railway.
3251. No matter by which route? Of course they would prefer the route which would serve them most cheaply.
3252. Have you recommended any other route besides the "red" route? No. They always determined not to declare for any particular route. There were adverse interests represented in the Railway League.

THURSDAY, 25 NOVEMBER, 1893.

[The Sectional Committee met at the Court-house, Moree, at 10 a.m.]

Present:—

- | | |
|---------------------------------|---------------------------------|
| JACOB GARRARD, Esq. (CHAIRMAN). | |
| The Hon. W. H. SUTTOR. | WILLIAM McCOURT, Esq. |
| The Hon. JOHN DAVIES, C.M.G. | EDWARD WILLIAM O'SULLIVAN, Esq. |
| THOMAS THOMSON EWING, Esq. | HENRY DAWSON, Esq. |

The Sectional Committee further considered the proposed railway from Narrabri to Moree.

Mr. Richard Frederick Chambers, Crown Lands Agent, Moree, sworn, and examined:—

Mr. R. F.
Chambers.
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3253. *Chairman.*] You are Crown Lands Agent stationed at Moree? Yes; also chief clerk of the Land Board.
3254. *Mr. Suttor.*] Can you give any information in reference to the transactions of your office for the last two years? I can give the amount of revenue received at the Crown Land Agent's office from 1887 up to the present time. Before that year the figures are not very accurate. For 1887, it was £20,923; for 1888, £21,663; for 1889, £24,680; for 1890, £34,200; for 1891, £39,489; for 1892, £36,000; and for the first ten months of 1893, £32,000.
3255. That result is looked upon as satisfactory, and the revenue is rapidly increasing? It is increasing by leaps and bounds. I have also another statement which may be of interest to the Committee. This office was established separate and apart from the Wyallda office in 1880, and since that time in round numbers the revenue which has been received at the office has been about £470,000. None of the figures I am about to give include the amounts paid direct to the Treasury, which might possibly reach, perhaps, a quarter of a million. Large sums are paid to the Treasury direct by the agents of the pastoralists instead of being sent up to Moree to be paid here. The moneys may be paid either at the Treasury or to the Crown Lands Agent.
3256. What are the boundaries of your district? The Land District of Moree. It would not be much short of the district which is shown on that map. It would not go quite so far to the east. To the south it would go as far as Millie; to the east a little east of Bogamildi; to the north right out to the border; and to the west over to Walgett.
3257. Are many of the selectors still keeping their original holdings? A great number. The revenue received at the office, still speaking of collections locally, for the quarter ending 30th September, 1893, was £10,754. At the instance of some residents who moved in the matter, the Under Secretary for Lands supplied a comparative statement of the revenue received from other districts (including some large and some small ones) during the same quarter. In each case the amount includes auction sales and other collections. The figures for the various districts which are comprised in this statement are as follows:—

	£	s.	d.		£	s.	d.
Armidale	8,322	1	11	Bega	2,226	3	4
Hay	7,886	5	7	Molong	2,038	0	0
Coonamble	6,262	0	0	Carcoar	2,024	11	5
Narrabri	4,932	13	9	Albury	1,964	0	0
Bathurst	4,657	11	8	Bombala	1,631	6	1
Cooma	4,593	18	2	Orange	1,419	15	6
Parkes	4,458	10	5	Coonabarabran	1,181	11	3
Inverell	3,604	17	6	Glen Innes	1,139	2	9
Wagga Wagga	3,356	1	8	Young	1,099	3	2
Casino	2,747	0	0	Goulburn	1,094	0	0
Walgett	2,672	17	6	Lismore	720	9	0
Forbes	2,532	0	8	Singleton	713	14	0
Grafton	2,412	0	0	Stroud	628	19	0

The figures have been furnished to the head office, and I have seen the letter, but I fancy the returns are incomplete. Under four heads I have the separate items of the bulk of the revenue of this district since this office was established;—auction sales, about £160,000; conditional purchase sales, £200,000; conditional leases and pre-emptive leases, £38,000; and selections after auction, about £68,000. In the Annual Report of the Department for 1892, the amount of money received from conditional purchases in the shape of deposit and survey fees with new applications was the highest of any land district in the Colony as regards the amount, but not as regards the numbers.

3258. Are the majority of the conditional purchasers still holding their selections? They have been obliged in a number of cases to mortgage to the banks.
3259. Have you been in any other district as a land agent? Not as a land agent. I have had fifteen years experience in the Lands Department. I have been in the Land Board Office at Liverpool plains and Monaro. I am controlling the land agents and the Land Board Office here.
3260. What is your opinion of the general character of the selectors through the district? Very prosperous, I should think; fully as prosperous as the selectors in any part of the Colony I have been in.

3261. Except as regards the mortgages, they seem to hold their own very well? I think so. A number of large estates have been formed, principally in regard to selections, prior to 1884. On large stations a number of selectors have been bought out, but still a very large number are holding the selections that they took up.

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3262. Can you state the number? Not very well, but from turning over the leaves of the books and glancing at the records in that way, it seems clear that a great number still have their holdings, and many of them have enlarged their holdings. They have taken up selections through the members of their family and so on.

3263. *Mr. Davies.*] Can you state how much land is available for selection within the district? Not very well. That information can be supplied better by the District Survey Office. The maps are not under my control, but are kept at the Survey Office.

3264. You think the revenue will increase in this district? It will depend a good deal on the character of the legislation which is passed. Of course if the whole of the leasehold areas are thrown open in 1895, it will result in an enormous increase in the revenue. It will result in the business being trebled at least.

3265. The selectors and settlers are in a fairly good condition? They are a very prosperous class indeed.

3266. Do you know anything about the routes for the railway? I could not express an opinion that would be of any value to the Committee.

3267. *Mr. O'Sullivan.*] Are the transfers of land registered in your office? Yes.

3268. Can you not tell by the transfers where the land has gone? Without drawing up a return, which would occupy some time, I could not very well say. Of course I speak more particularly in regard to what has occurred during my time—fifteen or eighteen months. There has been very few transfers comparatively where the ownership of the land has distinctly changed. There have been a few transfers for the purpose of securing an advance on mortgage, but very few transfers for the purpose of changing the ownership in my time.

3269. I suppose the mortgages are not more numerous than in other districts? I should say not as numerous as in some districts I have been in.

3270. The money is generally raised to get fresh lands to carry on their operations? Yes.

3271. It would not be an indication that because a selector mortgages his land, he is necessarily in an oppressed or pushed condition? No.

3272. There is nothing like an unusual number of mortgages here? Not at all.

3273. I notice that many of the selectors have very large areas—do you think they are overreaching themselves in taking up too much land? I would require to have some pastoral experience to be able to answer that question. We have had a succession of good seasons of late years and they would not be likely to come to grief while that state of things continues.

3274. Do men get involved here by taking up too much land? I have not noticed that they do.

3275. Why is it that people are unable to find out by application to an office like yours where land can be selected? The system under which the maps of the Colony are drawn up prevents that from being done. But I am in a different position from many Crown land agents. There is a Survey Office in the town, and when people come to take up land they go round to the Survey Office and look at the maps. The officers of the Survey Department point out to them what land is available if they indicate the locality to which they wish to go.

3276. But all over the Colony there seems to be a bar by which people are prevented from obtaining information, even at headquarters in Sydney information is not always forthcoming? I do not think they have any trouble here.

3277. In the event of other selectors coming over by going direct to the District Survey Office, could they obtain the necessary information to place them on the land? Undoubtedly, provided that they indicate at the Survey Office the locality to which they would like to go—for instance, the name of the parish or the run where they would like to select. The maps are kept charted up to date.

3278. *Mr. McCourt.*] What is the average rent fixed for a conditional lease in your district? I should imagine it would be from 2½d. up to 4d.

3279. Fourpence would be the highest? In some cases it would be as high as 6d. and possibly 7d. for pastoral purposes. In cases near important towns being required for annual leases and not open to selection the rent may probably go up as high as 3s., 4s., or 5s. an acre having regard to the relative position of the lands to the town.

3280. Possibly 2½d. would be the lowest then? There have been cases where it has been fixed at 1½d. and 1¾d.

3281. But what is the rent on the leasehold area? I could not say.

3282. *Mr. Ewing.*] Do you regard the conditional leasehold in most instances as ever likely to become Crown land again? I should say that in the majority of instances it would not. I should imagine the selector would take advantage of his preferent right to purchase.

3283. To all intents and purposes it is alienated now? In the bulk of cases I should imagine it is.

3284. But while a man can rent land at 4d. an acre he is not likely to buy the land at 1s. instalment? Sometimes they come in a batch of a dozen, and select their leases.

3285. If they pay 1s. instalment it goes in part payment of the purchase money? Yes.

3286. You believe they would all purchase? Yes, in the bulk of cases.

3287. *Chairman.*] Is there anything else you desire to say? No.

Mr. Thomas Fitzgerald Moore, grazier, near Moree, sworn, and examined:—

3288. *Chairman.*] What is your occupation? I am a grazier. My holding is situated about 50 miles north of Moree. I came from Victoria.

Mr. T. F. Moore.
25 Nov., 1893.

3289. *Mr. Davies.*] What is the extent of your holding? My brothers and I took up four full areas eight years ago.

3290. What is the total area? Twenty thousand acres.

3291. What would be the nearest point on this line to your holding? Moree.

3292. Would a station within 50 miles serve your holding? I have no other place to go except over the border.

3293. You are just on the border? No; from 40 to 50 miles to the south.

- Mr. 3294. Do you think that a railway to Moree will be the best means to give you a market? Yes.
- T. F. Moore. 3295. Where does your wool go? To Narrabri by road. It is a few shillings less by Narrabri than by
 25 Nov., 1893. Goondiwindi. The stock agents made arrangements to get the wool round by Goondiwindi, but we found that it was a few shillings a ton cheaper to get it by this way. From about 20 miles to the north of us all the wool goes to Queensland.
3296. Do all your neighbours send their wool across the border, or does it all come this way? It all comes this way.
3297. Would the extension of the railway to Moree bring more traffic to the railway? Most decidedly.
3298. Do you know the travelling stock reserve which is depicted on this map? I have travelled along the route several times by coach to Narrabri.
3299. Of the "red" line and the "boomerang" line which line do you think would serve the district and the people of the district best? I should say the "red" line for various reasons.
3300. It is shorter, and consequently it will be cheaper for haulage? Yes.
3301. If the direct line is constructed would it induce a large number of the people in your district to send their wool to Moree and thence to Sydney or Newcastle? Our neighbours all send their wool to Narrabri, but from about 20 miles further north it all goes to Cambooya or Warwick through Goondiwindi.
3302. Would that wool come by this way if the line were constructed? I am almost certain it would.
3303. We would get the wool not only from your neighbourhood, but also from 30 miles to the north? Yes; probably 50 miles.
3304. How many sheep do you shear in your joint names? About 21,000.
3305. The railway will make a considerable difference to everyone in your locality, instead of having your teams on the road for many weeks? Yes; it will be a great consideration.
3306. How long does it take to go by team from your station to Narrabri? It depends on the state of the weather. In ordinary weather it takes seventeen or eighteen days. Sometimes it may be done in ten days, but I think it is nearly four weeks before they get back again.
3307. Do you send fat sheep to Narrabri? Yes.
3308. How long does it take? It might take seventeen days.
3309. How long would it take you to drive your sheep from your station for Moree for trucking? About six or seven days.
3310. The railway would make a very great difference to you in regard to the stock? It would make a difference of about 1½d. per sheep, perhaps 1½d.
3311. And your sheep would be of better quality in the market? Yes.
3312. Have you anything further to say? Some questions were asked yesterday as to whether stock would travel from Millie by the travelling stock reserve in place of going to Woolabrar. It would take three or four days longer to go from Millie to Narrabri than from Millie to Narrabri *via* Woolabrar. From my knowledge of the two tanks on the route it would cost £1 a day; therefore I think they would make for Woolabrar station.
3313. You are strongly of opinion that the people of the Millie district would prefer to go to Woolabrar with their sheep? I have never been in the Millie district, but I think that if I were living there I should have no hesitation in saying that I would sooner send my sheep to Woolabrar than travel them down the road and risk the lanes of Narrabri west, and the chance of being caught in wet weather.
3314. Is there anything more you wish to say? Yes; with regard to the vacant land to the north. On Welton there are about 100,000 acres of magnificent land locked up; the leasehold of Tulloona is all fine country, and there is a great lot of belar country which may be ringbarked at from 1s. 6d. to 2s. an acre. The belar is easily killed. It is magnificent soil and the grass grows soon. When the open country is gone, that country will be taken up.
3315. The extension of the railway to Moree will open up that country? It will in time. It will not be taken up now, because it is too expensive. Making a rough guess, I should think, that there are from 300,000 to 400,000 acres within 50 miles of Moree which will be settled when the leases fall in.
3316. Mr. O'Sullivan.] You spoke of the graziers of the north who send their wool to Queensland *via* Cambooya;—are these large men who ship direct to London or who consign to wool buyers in Brisbane? There is only one large station on the border—I do not know where Willtown wool goes, I think it goes to London—which does not sell its wool in Sydney.
3317. Is it much more advantageous to sell in Sydney than in Brisbane, owing to the presence of foreign buyers and the provision of better accommodation in the latter place? Yes; there are no sales in Brisbane.
3318. Therefore, if any inducement were offered to bring this trade in from the north of your place, they would be likely to be swayed by the fact that they would get this greater accommodation in Sydney, and therefore come by this way? Yes; the people of Goondiwindi told me last week that a considerable traffic would come this way.
3319. Do you think that the attraction that I spoke of would be greater than the attraction of the shorter railway journey into Brisbane? But they have also to pay sea carriage to Sydney.
3320. Do they pay more in Brisbane than in Sydney for the carriage of their wool to London? I cannot say.
3321. If these lands were thrown open, do you think there would be a rush of settlers of the same stamp as yourself? If they knew that there was such rich country they would all be here.
3322. What part of Victoria do you come from? From West Wimmera.
3323. I suppose many of the selectors up about Horsham, Dimboola, Donald, and St. Arnaud who find their holdings too small would be likely to come over to this country where they can get larger holdings? Yes.
3324. They are generally men who have made money? Yes.
3325. I suppose you work your holding like a family holding? Yes.
3326. With a ring fence? It is all subdivided. The law will not allow a ring fence in the case of brothers, but only in the case of father and children.
3327. Mr. Ewing.] What do you think of the future of this country? I think it has enormous resources.
3328. Is it to be a sheep walk or will it grow wheat? My opinion is that in the course of time as population increases it will become an agricultural district.
3329. You see no reason why it should not be a great wheat-growing district eventually? No.
3330. Chairman.] How far is your holding from the Queensland border? In a direct line it is about 16 miles. It is over 40 miles from Goondiwindi.
- 3331.

3331. You say that the people 20 miles to the north of your holding send their wool to Cambooya, therefore I take it that in your opinion the line of trade between Goondiwindi and Narrabri is within 20 miles of you.
3332. If the terminus of the railway is brought some 70 miles further north, how much further north will that line of trade be driven? To the other side of Goondiwindi.
3333. That will go into Queensland territory. Do you think there is a reasonable probability that all the New South Wales settlers north of you who now send their produce *via* Queensland, and some of the southern Queensland people will send to Moree? Most decidedly.
3334. That applies to all kinds of produce—both wool and fat stock? Yes.
3335. Is your land due north or north-west? It is due north.
3336. Is it liable to flood? It is fairly dry. I am conserving water.
3337. Have you travelled much over the district east and west of your holding? I have been east and north, but not very far west.
3338. Is the country to the north and east of the same character as the country where you live? To the north it is a little bit inferior.
3339. As you go north? There is a bit more timber on the land.
3340. From the pastoralist's point of view it is a little more inferior? Yes, because it is heavily timbered.
3341. Is the country in South Queensland as good as your country? No; not from the pastoralist's point of view.
3342. Is the country to the east as good as your country? Yes, bar large patches of scrub.
3343. Is the country to the east less liable to flood than the country to the west of you? I do not know that you could call any of it liable to flood, except when the water comes down in the watercourse. It is all wet in winter time.
3344. It has been stated in evidence that the country to the east of this line which goes to the headwaters of the river is less liable to flood than the country to the west, and I was wondering whether the country to the east of you is less liable to flood, the waters being confined within reasonable bounds than it appears to be further to the west. Is not the country round about Gil Gil very much liable to floods? No, except where it approaches the Barwon or the McIntyre, perhaps 20 miles from Mungindi.
3345. Have you ever been to Mungindi? No; I have been a long way down the Gil Gil.
3346. Knowing this country somewhat well to the north, in the event of the railway being extended north from Moree, for what place, in your opinion, should it aim—Goondiwindi, Mungindi, or some point between those places, of course putting out of consideration your own holding? I should not like to offer an opinion because I do not know what the country is on this side of Mungindi.
3347. How far towards Mungindi have you been? About 20 miles.
3348. Taking the country you know of, 20 miles to the east of Mungindi, and through to Goondiwindi, in which direction do you think the extension should go with the view of conferring the greatest benefit, not only on the particular individuals who may be there now, but on the State? Perhaps Goondiwindi. The country to the north at Kunopia and across there is inferior.
3349. Going towards Goondiwindi, we should come more quickly in competition with the Queensland railway system? That depends upon how the country on the other side of Goondiwindi becomes settled.
3350. At present the nearest station to Goondiwindi is Warwick? Yes.
3351. If our railway goes in that direction it virtually goes to meet the present Queensland railway system, while if it goes more to the north or north-west, it goes away from their system and consequently is liable to tap more of their country? Yes; but I am afraid that it will be very inferior country.
3352. Do you think the country to the north of Kunopia is inferior? Yes.
3353. The good country in southern Queensland is towards Goondiwindi and Mungindi? I do not know anything about Mungindi.
3354. You think that if the railway is extended to Moree and the fact is communicated to so many of these poor struggling selectors in Victoria there will be a great rush for your country? I believe they will. They have no idea of what the country is like in New South Wales.
3355. We may reasonably expect that this railway will extend our line of trade, at least its own length further north? Yes.
3356. Which is the worst piece of country to travel—between your place and Moree or between Moree and Narrabri? There is not much difference.
3357. The only difference would be that perhaps the road is more travelled south of Moree? ¹Yes.
3358. If the same traffic were carried on both roads, the result would be much the same? Yes.
3359. Is it black soil all the way to your place? Yes; with occasional belts of scrub.
3360. What is the price paid for ringbarking this scrub? Some persons would tackle the work at from 1s. 6d. to 2s. 6d.—it depends on the deposit.
3361. Is there any marketable timber between Moree and your place or between here and the border? No.
3362. What do you use for your ordinary fencing? Pine. There are no pine forests, but clumps of pine.
3363. Do you find that timber useful? It is the best we have.
3364. *Mr. Dawson.*] Do you tar the bottoms? No.
3365. *Chairman.*] I suppose you have no intention of giving up your holding? Not the slightest.
3366. Is there anything else you desire to state? No.

Mr.
T. F. Moore.
25 Nov., 1893.

Mr. William Henry O'Malley Wood, District Surveyor, Moree, sworn, and further examined:—

3367. *Chairman.*] You desire to correct a portion of your evidence? I do. The relative merits of the travelling-stock route and the direct route had never come under my notice until yesterday when I was in the witness-box. Upon giving the two routes further consideration I feel satisfied that the direct route would be the best, for a branch line can be made from the direct line down to Millie for a less sum than the difference between the cost of the two lines. That branch line would serve the traffic from Collarenebri, just as well as the curved line.

Mr. W. H.
O'Malley
Wood.
25 Nov., 1893.

3368. Is there any other point you desire to submit? Mr. Davies asked me yesterday to ascertain as nearly as I could the area of Crown lands in my district which I think would be benefited by this railway.

3369. You gave us the boundaries of your district yesterday? Yes; but some lands within the boundaries of my district would, perhaps send their goods to Inverell and by that way to Glen Innes. My area does

Mr. W. H.
O'Malley
Wood.
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not agree exactly with the area which is given on the map on the wall. The total area would be 3,739,070 acres approximately. I hand in a return which shows the area in each leasehold and resumed area which will be benefited in a greater or lesser degree by this railway.

3370. It does not quite tally with the aggregate area given at the foot of the map on the wall? The boundaries I took do not exactly coincide with the boundaries on the map.

3371. The boundaries on the map on the wall embrace a larger area than the country in your district? Yes.

3372. But even in some of them you are not including the benefits, as you think the stuff will go to Glen Innes? In the north-eastern corner the stuff will probably go to Glen Innes. The roads leading towards Glen Innes are hilly and better drained, and I think the chances are that a certain amount of the traffic will go to Glen Innes.

3373. You gave an opinion yesterday as to the trade between the two districts;—you do not desire to alter that opinion? No.

3374. The only correction is, that on further consideration you think that, perhaps, the direct line will be the best, especially as the saving in the cost will provide, if necessary, a branch line to Millic, from some point on this line? Yes.

3375. Do you hand in a tracing showing the various runs within the influence of this railway? I do.

Mr. Alexander M'Intosh, storekeeper, Moree, sworn, and examined:—

Mr.
A. M'Intosh.
25 Nov., 1893.

3376. *Chairman.*] You are a storekeeper in Moree? Yes.

3377. *Mr. O'Sullivan.*] How long have you been established in business in Moree? Fifteen years.

3378. Is this large store and apparently flourishing business the outcome of fifteen years' operations? Yes, and 14 years previous hawking in the district.

3379. You appear to do business round the whole of this district? Yes; chiefly east, north, and north-west; very little towards Narrabri.

3380. How far out does your trade extend to the north? As far as Mungindi to the north-west; and as far as about 45 miles to the north.

3381. Have you customers out at Mungindi? A few—small men generally.

3382. Any towards Collarendabri? None.

3383. Or lower down that way from Mungindi? Down towards Moree a few.

3384. Any out towards Warialda? None to speak of.

3385. Any to the east of the town? Up the branch of the Big River, towards Bingara.

3386. How far south does your business connection extend? About 20 miles, to Bumble, and not much that way either.

3387. As you have been established fifteen years, and therefore have had a fair chance to get a business connection around the district, I suppose we may take the sphere of your business as representing the commercial sphere of Moree? Yes.

3388. It is probable that the people who are settled within that radius would all do their business in Moree? Yes, that will be about the radius.

3389. I presume from these monuments of your industry you have found your business to be of a satisfactory character? Yes.

3390. We may look upon this district as a sound one? Undoubtedly.

3391. Have you had many bad debts in your time? Not many. Of course that depends on persons.

3392. The business appears to be, generally speaking, of a sound character? Yes.

3393. Has your business been extending rapidly of late? I cannot say rapidly, but it has always been extending.

3394. It is a very sure and growing business? Yes.

3395. I suppose that what is your case may be regarded as the case of every business-man in the town, in a smaller degree? Yes.

3396. I notice you have a number of papers in your hand;—do you propose to make a statement to the Committee? I wish to assist you in arriving at a determination as to the paying capabilities of the proposed line—not in advocacy of or in opposition to the construction of the line.

3397. Will you please make your statement? I have a freight account with the Railway Commissioners. I have brought my returns for the twelve months from the 1st November to the 31st October, and the amount which was paid to the Railway Commissioners was £2,212 10s. Nearly all my goods come from Newcastle and Morpeth—chiefly from the latter place. I have also a freight account with the Hunter River Company. I have brought the returns for the same period, and my freight account with that company was £249 12s. 1d. That represents rather over 500 tons in measurement and dead-weight. That will give you a good idea of the amount of freight which comes from Morpeth. With the exception of a few hundred cases of spirits, very little comes from Darling Harbour.

3398. Do you find it cheaper to have your bulk goods brought by steamer to Morpeth and thence by rail? Yes.

3399. Do the large graziers in the district obtain their goods from Moree, or Newcastle? Chiefly direct from Sydney.

3400. As a rule, they do not do a large business with the local storekeepers? No.

3401. By which road do they obtain their goods after leaving Narrabri? To Mungindi on the north, 45 miles, by this route. But I think no Tullooona goods or wool comes this way. I think it all goes to Glen Innes. If the train were brought to Moree no doubt that wool would come here, but the Railway Commissioners would not benefit, because the freight would be about the same as it is from Glen Innes.

3402. Do many of these large graziers obtain their supplies by way of Tamworth, and thence by carriers to the station? I do not think so.

3403. None of those to the eastward? Only those who would not be served by a line to Moree.

3404. If this line is constructed to Moree, will they be likely to bring their goods by rail to Moree rather than by rail to Tamworth, and thence by team to their stations? I think the most of them would. On this side of Ginerol they are all supplied from this line. But anyone at Bingara or in that vicinity would still send to Tamworth, because he would have 133 extra miles by rail, and there is a good road from Tamworth.

3405.

Mr.
A. M'Intosh.
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3405. I suppose that of late you have not travelled over the country? Not of late, but in the early days I saw a good deal of the district.

3406. Is the country to the west well settled? No; very sparsely settled.

3407. I mean the country towards Collarendabri? I believe it is very sparsely settled out that way.

3408. In what direction, as it is indicated by your business, has settlement been trending since you have been here? It has been trending a good deal north and north-west towards Mungindi.

3409. Those are the two points which would be served by way of Moree? Yes, chiefly.

3410. If the Commissioners estimate that they will receive £10,000 per annum from the goods traffic on this line, do you think their estimate will be realised? I think it is a very moderate estimate. Take my returns alone. I paid £2,212 in a year, and I might safely put down my traffic on this proposed section at £500 a year.

3411. *Chairman.*] More than that? That is a moderate estimate. I usually send down for my summer supplies in September, but this year I did not go down until the latter end of October, and they are all coming up this month. If the committee had visited the town a month later of course my returns, including this month, would be £2,600, or over. I expect that my railway account this month will be over £400.

3412. *Mr. McCourt.*] You think your estimate is a very moderate one, and is likely to be exceeded? Yes. I cannot pretend to state exactly the amount of goods that come here. I do not think I get a third of the total; but assuming that I do, it will show that the general traffic of this town alone will be worth £1,500 a year to the Railway Department.

3413. If they estimate that they will receive in passengers and mails £2,300? I think that is a moderate estimate. I think the Commissioners stated that they do not calculate on the Warialda trade at all. But I think the whole of the passenger traffic of Warialda would come to Moree. The mail leaves Warialda at 10:30, and is due at Tamworth at 11:30 on the following day. But by leaving at 6 it would be here at 7 o'clock at night; the passengers would have a night's rest, and go on by train next morning. Of course, the fare would be a little less. The distance from Warialda to Tamworth is 144 miles; from Tamworth to Werris Creek it is 27 miles, while from Moree to Werris Creek it is 160 miles, so that there would be a mileage gained of 133 miles. Taking a moderate estimate of one passenger daily, that would be 16s. 8d. for each passenger, or £500 a year. I cannot pretend to give an estimate of the passenger traffic from Warialda, but I think all the passenger traffic would come here. The mail would leave here daily for Warialda, instead of bi-weekly as at present, and the daily service to Bingara might be made a weekly or bi-weekly service.

3414. Do you think the Commissioners did not include the Warialda traffic in their estimate? I do not think they did.

3415. Few passengers come from Warialda? At present one may safely estimate that the traffic is one passenger each way a day on an average. That would be twelve passengers a week, or 600 a year. Now 600 passengers at 16s. 8d. each comes to £500. I believe, according to the report, they have not taken that amount in their estimate at all.

3416. Do you think the goods traffic will come? I think a little will come—a good deal in time, perhaps. Of course, there are many lines which will come up—salt, woolpacks, and other things. It would pay them better to get these things from Moree than from Tamworth, and no doubt they would get other things up at the same time. If they wanted goods up very quickly no doubt they would use this line, as it would mean 55 miles of road carriage as against 134 miles.

3417. If the railway system were extended from Glen Innes to Inverell, and from Narrabri to Moree, which way would the Warialda passenger traffic go? I should imagine that most of it would go to Inverell. It would depend on the difference in the cost. I should think that Inverell would be the nearest place.

3418. *Chairman.*] How many other storekeepers are there in Moree besides yourself? Four at present—five until recently.

3419. Can you give the Committee any idea of the traffic which the other storekeepers would have by this railway. No; but I suppose it would be twice as much as I receive.

3420. Your estimate is that your trade would be equal to a third of the total outward trade? I do not know that it would.

3421. Do you send anything to Sydney—do you buy produce and send it on? Very little. All that would come from here is chiefly live stock and wool. But, as you know, live stock pay the Department much better than agricultural produce.

3422. You do not send any? No; I send some wool.

3423. To what extent? It varies. I sent very little this year. Last year I sent over 100 bales—sometimes 150 bales.

3424. Are you a wool-producer or do you trade in wool? It is purchased wool. But I never require to take wool in payment of my accounts; it is simply a matter of buying with me.

3425. You are aware that if this line is constructed, it is to be constructed subject to the betterment principle? Yes.

3426. It is estimated that the country which will be served by this line, and which will come, perhaps, within the betterment area, is comprised within a radius of 50 or 60 miles of Moree—do you think that the country for that distance will feel the influence of this railway? Not to the eastward.

3427. How far east will the country be served? Thirty miles east.

3428. How far north? Forty-five miles.

3429. No more? No; because they can get their goods to Glen Innes just as cheaply as to Moree.

3430. It is stated in evidence that the trade would be influenced right up to the Border, and would come to Moree? I think Tullooona wool will come here, but it will not be a gain to the Railway Department. It is now going to Glen Innes, and I think the distance from either station would be about equal.

3431. You state that the area which will be benefited by the railway, and which is likely to come within the betterment area, extends 30 miles east, 45 miles to the north—and how far west? To Mungindi—nearly 80 miles.

3432. Have you given any consideration to the betterment principle? I have.

3433. Do you think it is a fair principle to adopt? I think it would be fair if it had been adopted at the outset of railway construction. In all the suburbs of Sydney thousands of acres of land have been bought

Mr.
A. M'Intosh.
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at a few pounds per acre, and sold at nearly as many pounds per foot. That is where the principle should be applied. All these lands should have paid for the construction of the suburban lines. They have extended the trunk lines and constructed branch lines without applying the principle, and it seems unfair now that it should be applied to the construction of a light line. I think the evidence is strong that this line will pay from the start, not only the working expenses, but also the interest on the capital expenditure. If it pays the interest the capital need never be paid off. It has a State guarantee of 4 per cent. The State can issue Narrabri-Moree railway bonds, and as long as there is a State guarantee of 4 per cent. those bonds will always be worth their money.

3434. You do not believe in the principle of paying off the principle and interest? Not in the case of railways as long as they pay.

3435. You admit that the betterment principle is a correct principle to adopt, and your only objection is that Moree happens to be the first place to which it is to be applied? Yes.

3436. If it is a right principle to adopt, as we must make a start at some time or other, why should not a start be made here? Because there is a reasonable prospect of the line paying from the start.

3437. If it should be decided by Parliament that the betterment principle should be applied in this district, you would be in favour of not having the railway, rather than have the principle applied? As regards the construction of the railway, I can assure you that it is a matter of perfect indifference to me. I think it would benefit the district greatly, but I fail to see the justice of making the Moree land owners pay for such lines as the Mudgee line, the Hornsby line, the Molong line, the Cobar line, and the Lismore-Tweed line—all dead losses to the country. If the Moree line pays from the start the money that is raised under the betterment principle in the district will go to pay off those lines.

3438. You think that the people in other parts of the Colony have no interest in your public lands? They have not the same interest.

3439. It all belongs to you? Not at all. We have no interest in these lines. All the land alongside the Hornsby line is bringing much more than it did, yet it is not subject to the betterment principle. I suppose the Mudgee line would not have been constructed if it had been subject to the betterment principle. We are not interested in those lines except as colonists.

3440. Assuming that the betterment principle is to be applied to the construction of the Moree railway, do you think that the land boards and land court will be the best tribunal to judge of the application of the principle? I think so.

3441. They have given general satisfaction in administering the Act have they not? I should imagine so.

3442. You would rather have these bodies to fix the various zones within the betterment area than resort to the ordinary tribunals? The former are in a much better position to determine the matter.

3443. You have been out Mungindi way? Within a few miles of the town.

3444. Have you travelled much about the district north and west? Chiefly east, south, and north—not a great way north.

3445. The country north, west, and east is very similar to the country between Moree and Narrabri? It is all fine fattening country.

3446. Less or more liable to flood than the land between Moree and Narrabri? Some of it more liable—down the Gil Gil.

3447. The higher you get up the river the less liable it is? Yes.

3448. Is there any other information which you desire to give to the Committee? No.

Mr. John Munro, post and telegraph master, Moree, sworn, and examined:—

Mr. J. Munro.
25 Nov., 1893.

3449. *Chairman.*] You are post-master and telegraph-master stationed at Moree? Yes.

3450. How long have you been here? I have been in the service of the department seventeen years; but previous to my appointment I had been in the district about fifteen years.

3451. Will you describe briefly the various mail services which radiate from Moree? The service from Moree to Narrabri—a daily service—cost for the last three years £570 per annum, but a contract has been let for a term of three years at £450 per annum.

3452. Is this service very frequently interrupted by the bad state of the roads? Yes; the heavy state of the roads prevents the mails from running to time. The mails are often twenty-four, sometimes forty-eight hours, behind time.

3453. What is the time allowed by the contract? Twelve or thirteen hours.

3454. Does it frequently happen in the course of the year that the mails are twenty-four hours late? In wet seasons with a scarcity of grass they are generally later than in good seasons.

3455. Have you ever known the coaches, owing to the flooded or heavy state of the roads, to have to go to the east rather than come by the travelling stock route? They must come by that way, because they have to tap Millie and other places.

3456. Has there ever been an occasion when the coaches could not travel, and the mails have had to be carried on horseback between Moree and Narrabri? Occasionally; not from the floods, but from the bad state of the roads principally.

3457. It is continuous showery weather which makes the road very heavy? Yes; perhaps a week's rain.

3458. Will you state the next mail route? The next is from Moree to Eulourie and Cobbedah. It is about 100 miles to Cobbedah. It goes within 12 miles of Barraba. It goes once a week by a light buggy, and the annual cost is about £135 a year.

3459. The next route? The next mail is from Moree to Bingara. It goes twice a week in a two-horse coach.

3460. Is the mail matter increasing? It is not very heavy; it is principally for the convenience of the road residents.

3461. There is not much actual communication between Moree and Bingara, but between Moree and people on the road to Bingara? Yes; it is a cross-country mail. They have a direct mail from Tamworth.

3462. Is that mail growing? Slightly. It used to be a weekly mail a few years ago. It has only been established during the last three or four years.

3463. The next mail? It is to Warialda *via* Pallamallawa. It goes twice a week.

3464. Is it growing in importance? By the settlement along the way it is.

3465. It is very much in the same position as Bingara? Yes. It is a direct outlet for Inverell for cross-country correspondence. It is a bi-weekly service.

3466.

3466. The next service? It is from Moree to Mungindi with three branches. It is a bi-weekly service Mr. J. Munro.
to Mungindi. It is the most important coach-line in the district.
3467. Off that line you have three mail services? Yes; a branch to Kunopia, a branch to Boggabilla 25 Nov., 1893.
and Goondiwindi, and a branch to Gil Gil. We make up the mails direct for these places, and for residents
along the lines in private bags. The mail from Wallow Creek up the Gil Gil is a horse-mail going once a
week, it is growing. The mail from Welbon to Boggabilla and Goondiwindi is a bi-weekly horse-mail.
It is growing, as a great deal of settlement is taken place along the line. The mail from Garrah to
Kunopia on the Barwon is a very small mail. Several gentlemen from Victoria and other parts of the
country have taken up land along this line.
3468. What other mail services are there? There is a mail to Talmoi, 40 miles west—it serves a number
of selectors. It is a horse-mail going once a week. It is growing in importance. I believe it is the
intention of the Department to shortly double the service.
3469. Is it growing more rapidly than some of the branch lines off the Mungindi line to the north? Not
more.
3470. The country along these lines is not adapted for vehicles? No.
3471. Any other mail services? From Moree to Burrendoon *via* Meroe. It is about 55 miles distant. It
has a vehicular service twice a week. There is another line from Moree to Telcraga. It is a horse-mail
running twice a week.
3472. The only coach service therefore are to Bingara, Cobbedah, Warialda, Mungindi, and Meroe? Yes.
3473. Has there been any marked growth during the last five years in the business done at Moree post
office? Yes. There has been a marked increase in the work since then. To give you an idea of the
number of the residents along the Mungindi line, I may say, that I prepare thirty private mail bags for
that line, and several of these bags supply a number of neighbours.
3474. Has the telegraphic business grown to any very great extent during the same period? I cannot
say that it has grown so much. But there has been a reason for that. We were remarkably busy three
or four years ago. The stock agents occupied the line for a length of time. There has been a marked
decrease in their business, but the ordinary business has kept well up.
3475. How do you account for the falling off in the stock business? It is owing to the depression which
has been felt all over the Colony.
3476. There has been no diversion of trade? No.
3477. With your intimate acquaintance with the surrounding district, do you think there is a steady, not
to say a very large growth going on all around? It is not very rapid; it is continuous. For instance,
while in 1880 the sale of stamps amounted to £260, this year it has risen to over £1,700.
3478. Can you state the total revenue for telegraphic purposes during the same time? Last year the sale
of stamps amounted to £1,746, and for telegrams we received £709. A year or two before the tele-
graphic revenue was slightly in excess of that, but it was owing to the activity of the stock agents
business.
3479. Any money order business? No particulars are given on this list of that branch, but making a
rough estimate it was between £8,000 and £9,000 last year, and the Government Savings Bank between
£3,000 and £4,000.
3480. There is a gradual growth in all these branches of the revenue? Undoubtedly.
3481. You have no fear of the bottom dropping out of Moree? Not in the least. I have been in Moree
since it consisted of only one house—about thirty-three years ago.
3482. *Mr. Davies.*] Do you know anything of the country through which the railway will pass? Yes.
3483. Do you know the travelling stock route? Yes; it is the only one I do know.
3484. Do you recognise the surveyed line on the plan? Yes.
3485. Do you know that country? I have not been in there much, therefore I cannot speak of that
country.
3486. Which route do you favour—the direct, or the “boomerang” line? I think the direct line would
suit all parties best, it would mean less haulage and quicker transit.
3487. At what period during your term of office has there been a greater growth in the business, as
compared with previous years? There has been no sudden jump, it has been a gradual growth all along.
There has been a gradual settlement in the district—people are continually coming to the district from
all parts of the country.
3488. What staff have you? I have five assistants.

Mr. Frederick William Kirkby, hotelkeeper, Moree, sworn, and examined:—

3489. *Chairman.*] What is your occupation? I am a hotelkeeper in Moree.
3490. *Mr. McCourt.*] How long have you resided here? Thirty-three years in the district—twenty-eight Mr.
of that in the town. F. W. Kirkby.
3491. Are you also a land-owner? I have two or three selections, perhaps a couple of thousand acres. 25 Nov., 1893.
3492. What is the average size of the selections within a radius of 10 or 12 miles? Six hundred and
forty acres, as a rule. Some have the full area of 2,560 acres, but not many have close to the town.
3493. Are you all engaged in sheep farming? Nearly every one.
3494. Will that occupation continue here, or will the land be cultivated at any time? There is not the
slightest doubt that a great part of the land will be put under cultivation. I myself grow a good bit;
nearly enough hay and corn to keep myself.
3495. Is the land very suitable for growing corn? It is very good indeed, more so to the east than to
the west.
3496. Supposing that the people were to go in extensively for corn growing, where would they get a
profitable market? It would be down the country.
3497. Down Sydney way? Yes.
3498. You spoke of some suitable land for wheat-growing to the east;—where is it situated? From
Moree towards Warialda it is all wheat-growing country. Mr. Solling has grown some splendid wheat.
All up the Big River they can grow buck-wheat, but they do not, on account of the market being so far
away. They grow it for hay, chaff, and forage. They do not grow much for the market until you get up
to Orton, where they grow it for Bingara. 3499.

- Mr. F. W. Kirkby. 3499. Has there been any disposition shown to adopt agriculture during the last few years? They are all going in for it a little. There are very few of the selectors who do not grow what they want for themselves—potatoes, and anything like that.
- 25 Nov., 1893. 3500. In a few years, the probability is that sheep-farming will be combined with agriculture? That is my belief.
3501. Do you think it can be carried on with a profit? Yes.
3502. Does the Warialda traffic come here now? Yes; they bring a great deal of flour from Bingara and Inverell, also corn and chaff. I bought some yesterday which had come from Bingara. They bring it down from the Orton much cheaper than it can be got by any other way.
3503. If this line is constructed you think you would get the passenger and goods traffic of the Warialda district? I believe we will.
3504. You know the country between the two routes well? Pretty well.
3505. Do you think the "red" line would serve the greatest number of people? It would suit this district best, because it would cost far less to construct it in the first place, and less for the transit of stuff in the second place.
3506. Does it not go too close to the mountain ranges? I do not think so. It is higher ground along the ranges.
3507. Do the people own too much land here? They cannot get it.
3508. Do those who have got land hold too much? I do not think so. I do not think any man can carry on sheep-farming with less than 2,500 acres.
3509. He can live well on that area? I think he can make a very profitable living, provided that he gets good ground, and keeps good stock.
3510. Where they have 7,000 or 10,000 acres, they have too much for one family. Would it not be better if it were all cut up in 2,500-acre blocks? No doubt it would be better for the district—it would create a larger population.
3511. Is there any disposition amongst the large land-holders to subdivide and sell? I have never heard that there is.
3512. Do you think that the construction of this railway would encourage the subdivision of large estates? There is no doubt the railway would cause a greater population to come here. The country is second to none as far as its growing and grazing capabilities are concerned. I have travelled about the district for thirty two years—I have been carrying and droving—and I never saw anything better.
3513. If the leases are thrown open there will be a rush for land? Undoubtedly.
3514. You think that, on the whole, a line by the "red" route will pay? I do. I think, as I have always thought, that it will be one of the cheapest and best paying lines in the Colony.
3515. *Chairman.*] Do you know where they propose to locate the stations here? No.
3516. I suppose it is not a very burning question to the people of Moree? I could not say.
3517. All they want is a railway, and they do not care where the terminus is? I know that where the terminus is proposed to be put the land is reserved.
3518. Do you think it is a suitable place for the terminus? Yes.
3519. You have not heard any complaints on the part of the people, that it is too far from the centre of the town? No.
3520. It could not go very much further without crossing the river? I do not think it could go much further without going into the houses.
3521. Do you know anything of the country about Wee Waa? I have not been at Wee Waa for thirty-five or thirty-six years.
3522. In those days it was considered an important town? It was. In 1857, when it was reckoned a good town, I think there were two houses there.
3523. I suppose you think that Moree has a bigger future than Wee Waa? I think it has a bigger future than any place in the northern district.
3524. You have heard some of the witnesses give their evidence? I heard one or two witnesses give their evidence yesterday morning.
3525. Is there any point as to which you do not concur in their evidence? Not materially.
3526. Is there any other information you wish to give? Not that I know of.

Mr. Charles Bodeley Keene, station manager, Gurley, sworn, and examined:—

- Mr. C. B. Keene. 3527. *Chairman*] What is your occupation? I am a station manager at Gurley.
- 25 Nov., 1893. 3528. *Mr. O'Sullivan.*] Who owns Gurley? Mr. John Simson.
3529. Have you a thorough knowledge of the country through which the proposed line will go? Yes; I know it very well.
3530. What is the character of the country generally between Moree and Narrabri? From Moree to Tycannah it is plain country—flat, good sound country and not very heavy black soil; from Tycannah to Woolabrar it is slightly undulating country. Crossing those creeks which are marked on the plan it is not at all flooded except at the creeks. A few good sound culverts would be all that would be required at the creeks, I should think. From Woolabrar to Killarney it is rather plain—more black soil between Woolabrar and Edgeroi than on the other part of it, and from Edgeroi to Narrabri it is high country, slightly undulating.
3531. How far to the east does that description apply? The country gets more undulating towards the mountains, and higher altogether as it goes east.
3532. Will it bear the description which you have just given? The greater part of it is rolling downs—black soil downs.
3533. Are there any thick scrubs between the "red" line and the mountains? The nearest heavy scrub is about 12 miles. Narrabri is the nearest poor country. About 4 miles east of Narrabri you get into sandy country.
3534. We are told that towards the mountains there are some thick scrubs which would cost £10 an acre to clear off? Not within about 15 miles of the line. Then you get into heavily timbered country.
3535. What would it cost to clear that scrub? I dare say about £5 an acre.
3536. What is the character of the timber in these scrubs, and out on the eastern side? It is pretty well all heavy timber, such as ironbark, yellow jack, gum.
- 3537.

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3537. Plenty of ironbark? Yes; a great portion of the timber is ironbark.
3538. Which would be the nearest station to the ironbark forest? I think Woolabrar—any point between Gurleigh and there.
3539. How far from the station would that forest be? About 20 miles.
3540. Out towards Terry-Hic-Hie? Yes; that would be up Tycannah Creek, or Bowman's Creek, as it is called. There is plenty of timber up there—ironbark, yellow jack, pine, gum, apple-tree, and all sorts.
3541. Is there much ballast along that line of country? After crossing Waterloo Creek, for about 2 miles, it would go through a red gravel ridge—a hard, cement-like gravel. It is pretty hard to sink post-holes about there.
3542. Is it south of Waterloo Creek? Yes, on the Narrabri side.
3543. Does that refer to a portion of what is called Eckford Forest? Yes.
3544. Is that very heavily scrubbed? Heavy belear, and some box on this ridge.
3545. There would be plenty of ballast there for the railway? Plenty.
3546. Would it be better than ordinary gravel? I do not know whether it would be considered better than gravel for railway construction. It is close cemented stuff, which would make good road metal.
3547. Is the land through which the proposed line goes subject to floods? Not at all, except at the creeks, where the water is confined within the channels. There is very little swampy country or places where the water lies at all.
3548. Would any of these creeks prove dangerous to the railway in the event of a flood? Not if there were proper crossings.
3549. Is the country to the east of the railway, or a fair proportion of it, fit for agricultural purposes, provided that it is cleared? Yes.
3550. Do you think that when the population grows more numerous, and with the existence of the railway, and the possibility of commanding better markets, any agricultural development will take place there? I think a great portion of the land to the east is well suited for agriculture.
3551. What kind of soil is it? It is light loamy soil.
3552. Any chocolate soil? Principally about the mountains, and at the heads of the creeks, there is chocolate soil.
3553. It would seem to be a likely place for wheat cultivation? I think so. It would grow good corn.
3554. Is it fit for growing grapes, figs, oranges, and lemons? Yes.
3555. *Mr. McCourt.*] What is the size of Gurleigh holding? About 270,000 acres, of which 100,000 acres are freehold, and 50,000 acres leasehold.
3556. *Mr. Davies.*] How many sheep do you shear on your run? One hundred and fifty thousand last season.
3557. Where does the wool go? Through Edgeroi, by the road to Narrabri. It would strike the main road at Galathera.
3558. What would be the nearest station on the "red" line for your wool or stock? Gurley. It would be about 1 miles from the head station wool-shed.
3559. The whole of your wool would go by that route? Yes.
3560. What saving would it effect in your case? I do not know what the railway rates would be for wool.
3561. What would the difference in the mileage be to you? It would be about 45 miles by road.
3562. The railway would serve you well if the station were provided with the necessary appliances for trucking stock and sheep? Yes.
3563. Would any other run near Gurley be equally well served by Gurley railway station? I suppose that Edgeroi and Tycannah would be served in the same way.
3564. I understand you to favour the "red" line rather than the travelling-stock route? I should think it would be far less costly than the other, as it is nearest to the ballast and the sleepers.
3565. At what price per cubic yard do you think gravel could be delivered on the line? I do not know.
3566. What would it cost to get half round sleepers, 10 feet long, from this forest? I should think you could get plenty of them at 1s. 3d. each.
3567. Is the timber in the forest good enough for sleepers? Yes.
3568. *Chairman.*] If the people about Millie and to the west of Millie who reach the travelling-stock route by Millie have stated that they would not use this railway, but would travel their stock to Narrabri, do you think that is what you would do if similarly situated? No.
3569. If you had a railway station within 12 miles of the travelling-stock route, and you were managing a station to the west of Millie, would you send your stock and wool by road to Narrabri, or would you ship it at Woolabrar? I think I would put it on at Woolabrar.
3570. You would like to get to the nearest point on the railway? I think so.
3571. Do you carry your own wool, or do you arrange with carriers? I arrange through an agent as a rule with a carrying company.
3572. What does it cost you to carry per bale or per ton? It is arranged by the weight for the total distance.
3573. How much does that pan out per ton per mile? It is £2 15s. a ton for 15 miles.
3574. Supposing that the distance were doubled, would there be any decrease in the cost? Yes.
3575. The longer the distance the smaller proportionately is the charge per mile? Yes, usually.
3576. Would not that go to substantiate what the Millie people said, that having got their wool on, and the saving being only 20 miles, they would go on 20 miles rather than take the railway? The railway freight would not compare with the carriage by team.
3577. You think it is reasonable to suppose that they would tap the line at Woolabrar? I think so.
3578. As far as flood-water is concerned, is there much difference between the travelling-stock route and the "red" route? The travelling-stock route is much lower.
3579. Consequently is more liable to flood? It is not liable to flood, but the water lies on the ground very much longer. It is boggy and heavier. The water lies in swamps for miles for a long time.
3580. Supposing that Gurley station were to the west and not to the east of the travelling-stock route, would you still think that the "red" route was the best route? I think, as far as the country is concerned, it would be the cheapest and most direct line.
3581. And it would go through higher country for railway construction? Yes; better country for railway construction. Personally I would sooner see the line go along the travelling-stock route. It would be quite near enough for us, it would not interfere with us.

- Mr. C. B. Keene. 3582. What distance from a railway station do you think is a convenient distance—15 or 20 miles? Twenty-five miles.
3583. You think that a pastoral property is fairly well served if it is within 25 miles of the station? Yes.
3584. *Mr. McCourt.*] Are there any selectors on Gurley? Five.
3585. Is the resumed area all Crown lands yet? With the exception of these five selections it is. It would amount to 150,000 acres on Gurley.
3586. What is the area of Gurley station? 100,000 acres freehold, 50,000 acres leasehold, 50,000 odd acres resumed area, and the reserves.
3587. Would the construction of this railway tend to increase the value of those Crown lands or cause them to be selected? I think they would be selected in any case. I do not think it would make much difference. Wherever selectors have been able to get land it has been taken up.
3588. Why have they not taken up the land on Gurley, if there are 50,000 acres in the resumed area? The greater part of that land is belar scrub.
3589. If the railway were constructed it might be taken up? It would give greater facilities for carriage.
3590. For what purpose could the timbered country be most profitably used—for grazing or for agriculture? For grazing, I suppose. It is all heavy black soil. It would grow crops, no doubt, in a good season. It wants rain only.
3591. You do not think that agriculture would pay there? It would pay there, as well as in a great many other places on the line.
3592. But would it pay? I do not think so, taking one season with another.

TUESDAY, 28 NOVEMBER, 1893.

[The Sectional Committee met at the Court-house, Wee Waa, at 4:30 p.m.]

Present:—

JACOB GARRARD, Esq. (CHAIRMAN).

The Hon. WILLIAM HENRY SUTTON.

The Hon. JOHN DAVIES, C.M.G.

THOMAS THOMSON EWING, Esq.

WILLIAM MCCOURT, Esq.

EDWARD WILLIAM O'SULLIVAN, Esq.

HENRY DAWSON, Esq.

The Sectional Committee further considered the proposed railway from Narrabri to Moree.

Mr. Lawrence Brennan, selector, near Wee Waa, sworn, and examined:—

- Mr. I. Brennan. 3593. *Chairman.*] What is your occupation? I am a selector, residing near Wee Waa.
3594. How long have you been in the district? About two and a half years.
3595. Your selection is on both sides of the river? Yes; it consists of 2,750 acres.
3596. How many sheep do you graze, or what stock do you carry? At present I have 5,000 sheep. Altogether I hold 3,200 acres for grazing. I have about twenty head of cattle and ten horses.
3597. Where do you send your produce and fat stock? By Narrabri West to the Homebush market.
3598. By which road do you travel? I have travelled by the cleared line on the southern side of the Namoi.
3599. The line that makes a detour from Wee Waa to Narrabri West? It is almost a direct line. The "blue" line is the more direct line. I have gone by the river road a time or two.
3600. If the railway is constructed by the "red" route, you would be no nearer to any point on that line than you are to Narrabri West? No; it would be of no benefit to me.
3601. Would a line by Gurleigh Point route bring you any nearer? Yes.
3602. How far would the nearest point on that line be from Wee Waa? About 6 miles.
3603. Would a line along the travelling stock route direct from Narrabri be of any benefit to the people of Wee Waa? I do not think so.
3604. The only line of the three, therefore, that will be of any use to the people of Wee Waa and the district belonging to the town is the line *via* Gurleigh Point? Gurleigh Point line, or any line more westerly.
3605. It is hardly possible to get more westerly? Not on that map.
3606. What other line would be more westerly? A line by Wee Waa itself would be more westerly than a line by Gurleigh Point.
3607. If you had your way you would take the railway from Narrabri West along what you call the direct road to Wee Waa, and cross the river a little to the east of Wee Waa at a point near your holding? No. The line which would take the most westerly course would serve the greater number of the people.
3608. Is there a good crossing at Gurleigh Point? No.
3609. Is there a better crossing at any point further west of Gurleigh Point crossing? No.
3610. What you desire to say, therefore, is that, without giving any consideration to the crossing of the river or otherwise, the line should be brought as far west as possible, so as to serve Wee Waa and the district beyond? I would say particularly the producers north-west of Wee Waa.
3611. Does much of the traffic from the west of Wee Waa, say out Walgett way, come through Wee Waa to Narrabri West? I think that the greater part of the traffic comes through Wee Waa or by Wee Waa.
3612. There is no produce which comes from Walgett by this way? I could not say.
3613. If the station-master at Narrabri West has sworn that, compared with the trade from the north, comparatively little trade comes to the railway from the direction of Wee Waa, what is your opinion on that statement? My opinion is that the station-master must have understood only the traffic which went by the cleared line to be Wee Waa traffic, whereas the roads on the other side of the river, within 2 or 3 miles of Wee Waa, are used, as well as the cleared line. He may have taken the cleared-line traffic, and I daresay that in some seasons that may not exceed one-tenth of the volume of trade to Narrabri railway station.
3614. Then the bulk of the Walgett trade, or the trade coming from that direction, would go along the road on the northern side of the river, and through Narrabri, in order to get to Narrabri West? I am quite aware that a great deal of it does. The carriers prefer the other side because the pasture there is better

better for their teams than on the southern side. I have seen a great quantity of wool and fat stock come up that way to market within 3 miles of Wee Waa. I have seen large quantities coming in by another road a few miles further out known as the Boolcarrol Road. If the station-master credited all this which passes through Narrabri to the north, he may imagine that only a tenth of the traffic comes from this way.

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3615. It is only in very dry seasons that the trade from the direction of Walgett goes along the northern side of the river, and in wet seasons it goes to the south of the river? Yes; the carriers are divided in their opinions, some preferring going one side and some the other. I have seen great quantities go down on the other side, where there is better pasture for teams. In very wet times they would have to go by the cleared line.

3616. Do not the records of the railway station at Narrabri West show whence the produce come? I could not say. I only speak from what I have seen.

3617. You have no idea of the volume of trade which goes along the travelling stock route from Moree? No.

3618. Therefore you are hardly in a position to compare that trade with the trade which comes from Walgett way, whether on the north or on the south of the river? Not to make a definite comparison.

3619. Is not the country in and about Wee Waa very much liable to flood? Yes.

3620. Is it not a fact that in 1890 a very large area of this country—nearly all along the Namoi—was under water? I believe it was.

3621. Was much stock destroyed or drowned at that time? I do not think there was any drowned. But I can only speak of what has occurred since 1890. It was in 1891 that I came here, and I did not hear of any stock being drowned. In 1891 I purchased my property, and I would not have made the purchase if I had considered that it was dangerous land for stock. It goes right through the worst flooded country in the district.

3622. You have not suffered materially? No; I have never lost anything.

3623. There have been no serious floods since 1890? That was not a serious flood. I am told that the flood last year was within from 9 to 12 inches of the 1890 flood.

3624. Have you been any great distance to the west of Wee Waa? Not more than 15 miles.

3625. As far as you have gone to the west, is the country more liable to flood than the district immediately about here? I could not say that it is.

3626. Is it much about the same? It appeared to me to be much about the same.

3627. Does the river branch out into numerous creeks? No; an overflow takes place here, and the water travels sluggishly over the ground on either side of the river; and when it does break over there is such a large area to cover that there is no current.

3628. Does the water lie long on the runs? No; immediately the river falls, within a couple of days the country is fit to carry stock again sometimes.

3629. *Mr. Suttor.*] Do you send much fat stock to Sydney? Yes.

3630. How many annually? I have sent 2,100 fat sheep off this small place of mine within the last twelve months to Homebush, and about 14 tons of wool. I am not dealing with any stock. I am a breeder. That is a legitimate outcome in a good season. I am stocked up now.

3631. Do you get a fair return for the sheep you send to Sydney? I got a fair return. I have got from 12s. up to 18s. a head for merino wethers. I have generally got far above the average price ruling in the Homebush market, and my neighbours have done the same. I think the stock journals would show that.

3632. Do you know anything of the country through which the "red" line would pass? No.

3633. Do I understand you to say that the "red" line would be of no service to you? Yes.

3634. And that the only line which would serve you would be a direct line from Narrabri to Wee Waa? No; a line which would take a more westerly course, would serve me more or less.

3635. Would a line by Gurleigh Point serve you? Yes.

3636. Would it serve a larger population than the "red" line? From my knowledge of the country, I feel confident that it would.

3637. Are you aware of the difference in the length by that route? I believe there is a deviation of about 10 miles. The river bears northerly from Narrabri to Gurleigh Point, and that favours the deviation.

3638. You would have to cross the river twice by taking that route? No; the river has to be bridged in any case, to get to the northern side. I believe that one bridge would do, that is, if the "red" line is intended to serve the producers of the country.

3639. Do you think that the difference in the number of selectors and settlers who would be served by the line you suggest would warrant the Parliament in incurring the increased expenditure? I do; because from my limited knowledge of the "red" route, it appears to be very convenient to the mountain, or what we call barren country down this way, while the other line would go through country which I know to be very valuable and fertile pastoral country.

3640. You have not been long resident here, and you have simply a knowledge of the country in which you are principally engaged? The country I have travelled over.

3641. Not much towards Moree? Not towards Moree.

3642. How would Millie be affected by taking the railway by the route you suggest? I have suggested that it should take a westerly direction, but I do not think my knowledge would warrant me in suggesting a definite route.

3643. You would rather dispense with railway communication than have a line by the direct route? Unless the people to the north-west could get an independent line, I would. If it would block a line from going to the north-west, in the interests of the country I would like to see it blocked.

3644. You think it will be possible to have a branch from this line? I consider that is the branch. The main north-west line should go more towards Collarendabri, or more north-westerly.

3645. *Chairman.*] Rather than the Moree line? The Moree line, in my judgment, would be the branch line. The main line would go more to the north-west.

3646. *Mr. Davies.*] Where would you tap the line so as to make a junction to reach Moree? I would not tap the line at all. I think the main north-west line should take a more westerly course. The "red" line might be an independent branch line. I do not say that the Moree people are not entitled to a railway, but if they are entitled to have a railway by the "red" route I believe the people in the north-west

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are entitled to have an independent line from Narrabri West. But if the one line is to serve both Moree and the north-west, I would say it would want to take as north-westerly a course as the engineers would like it to take.

3647. Do you think the estimated cost of this line—a cheap line through level country—is a fair and reasonable one? I could not venture to offer an opinion; I do not know anything about that question; I do not know sufficient of railway construction to know what it would cost.

3648. How is the district situated for sleepers? I know some of the timbered land between here and Narrabri West. For sleepers there is ironbark.

3649. Is there an abundance of gravel and metal for ballast? Not to my knowledge. I have heard a report that there are gravel-beds, but I have not seen them.

3650. You know very little about the materials necessary for the construction of the line? Only the sleepers.

3651. Is there any other information which you desire to give in support of your views? Yes—with regard to the adaptability of the land for cultivation. I believe the timbered country within a few miles of the railway line from Narrabri West to any point on the river would be brought under settlement before very long. I believe it is far more valuable than it is generally supposed to be; it is suitable for agricultural settlement.

3652. It has not been taken up? No; it is vacant Crown land.

3653. While people can get land which is cleared to the north-west, they would not take land which is timbered to any great extent. Have you anything further to say? No; only that the country on the northern side compares favourably with any pastoral country I have seen. I travelled the Murrumbidgee, Riverina, and the Lachlan before I came here. I took land on the Namoi in preference to land which was offered at the same price at Narrandera, within a few miles of the railway, and I have not regretted my choice.

3654. A point some distance on this side of your bridge which we crossed this morning was pointed out to the Committee as a point where the river might be crossed. Supposing a crossing were made at that point, where would the railway strike the proposed line? Out Boolcarrol way.

3655. That would be practically a branch from this line in the direction of Wee Waa? The line would go from Narrabri West, cross the river at the point you speak of, and pass on probably to Moree.

3656. Do many of the residents favour that point as a very good place for crossing the river? I think it may be found to be a good crossing. I am not very friendly to it, because it will do me an injury if the line comes through my land. I want the railway as close as I can get it without going through my land.

3657. You regard the site as a good one? I know that the banks are above flood-mark. If the railway could be constructed by that way it would be a benefit to this part of the country. Of course I would not try to oppose its construction.

3658. Your land would be subject to the betterment principle;—are you quite prepared to pay your share of its cost? I am, but I think the principle ought to be made retrospective. Those who have railways should pay as well as those who are to get railways.

3659. You have no objection to the application of the principle, even if it is applied to the construction of this railway, as long as the line will serve your district? No.

3660. *Mr. O'Sullivan.*] The map on the wall which illustrates the settlement in the district to be served by this railway does not give the settlement around the town of Wee Waa or in its vicinity? No.

3661. Is there much land selected around Wee Waa? A good deal.

3662. On which runs? Gundemaine, Wee Waa.

3663. Any upon Mara? I could not say. I believe there are a good few, but I am not acquainted with the run.

3664. Any upon Drildool, Boolcarrol, and Nowley? Yes.

3665. Are there many settlers within a fair radius of the town of Wee Waa—say within 15 or 20 miles? Within 15 or 20 miles there is a fair number of *bona fide* settlers, who are likely to remain.

3666. Have you heard of any selectors selling out up here? Not one since I have come.

3667. In which direction is settlement trending from the town of Wee Waa? North-west, as far as I know.

3668. Towards Collarendabri? Yes; and more down the river, if land is available—between that and the Namoi. I have been written to from the place from which I came to know if land is open for settlement here, and I have replied that when the runs are dealt with there may be land open for settlement.

3669. From which district did you come? Tumut.

3670. You say that there are settlers in that district, although it is a good agricultural district, who are anxious to come up here and settle as graziers? Yes.

3671. Do you think they are likely to come up when the leases are thrown open? Some would come if they could get the land.

3672. Would they prefer to come here, or to go on the leaseholds between Narrabri and Moree? I would not say that they would refuse to go Moree way. I think that district may be as good as this district. I am sure they would come to this district to the north-west of Wee Waa.

3673. You do not pin yourself to any particular route, but you prefer the railway to go by a more westerly route than the "red" route? Yes; as far to the north-west as the engineers say it can be taken.

3674. *Chairman.*] Is there any other point you desire to mention? No.

Mr. James Andrew St. Clair, selector, near Wee Waa, sworn, and examined:—

Mr.
J. A. St. Clair.
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3675. *Chairman.*] What is your occupation? I am a selector, residing about 10 miles to the north-west. My holding is 2,560 acres. I have resided here eight or nine years.

3676. *Mr. Suttor.*] What stock do you carry annually? About 3,500 sheep.

3677. What do you do with them? I fatten them, as a rule.

3678. Do you send many annually to Sydney? A good deal. I truck all my fat sheep. They do not all go to Sydney. In the twelve months, I suppose I sent away about 3,000—perhaps more in a good season.

3679. Do you send much wool to Sydney? Not much wool; I generally send the sheep down in the wool. I send from twenty-five to thirty bales of wool every year, sometimes more. I have sent sixty bales.

3680. How many sheep do you carry in a good season? It is very difficult to say. This is a good season, but still the grasshoppers are here. Mr.
J. A. St. Clair.
3681. I suppose the seasons vary here very much? Yes; we have had very good seasons for the last three or four years. In good seasons we can carry considerably over a sheep to the acre. 28 Nov., 1893.
3682. Is the price you get for your sheep in Sydney satisfactory? This year I have not sent many to Sydney. I have sent most of them to Aberdeen.
3683. What price do they give you at Aberdeen? So much per lb. It depends on the amount of wool. For twelve months' wool they gave 2d. for merinos, and 2½d. for cross-breeds.
3684. Do you think that a very good price? It is a satisfactory price.
3685. Do you send many there every year? I have only sent them there this season. I have sent nearly 2,000 there within the last two or three months.
3686. How do you send them? By train from Narrabri.
3687. Who pays the trainage? If they are sold by the lb., I pay the trainage, but if they are sold at so much a head, the company pays the trainage.
3688. The sheep are frozen at Aberdeen, and shipped at Newcastle for England? I suppose so.
3689. Have you any idea what profit the company makes out of them? No.
3690. *Mr. Davies.*] Are you familiar with the country through which the "red" line goes? I cannot say that I am. I have been along there.
3691. What point on the "red" line would be the nearest to your holding? I could not say. I should fancy it would be Narrabri, though possibly Edgeroi might be as near.
3692. It would not be an advantage as far as your property is concerned? No; if I went to Edgeroi, I would have to pay extra carriage to Narrabri.
3693. That line would be of no possible service to you? I do not think I would use it.
3694. It would be just as far to Edgeroi as to Narrabri? Practically.
3695. Do you know the travelling stock route? I have been along it.
3696. Would a line by the travelling stock route be much nearer to your holding? I daresay you could get a point on the travelling stock route a few miles nearer.
3697. But not sufficient to induce you to consign your stock or wool by that line? No.
3698. You would still go by road? I believe so.
3699. No line which has been surveyed according to this plan would be of any practical service to you? The Gurleigh Point route would be of service.
3700. Would it come nearer to you? Yes; it would benefit me still more, and benefit a larger number of people if it would go still more to the west. The further north-west it goes the more people I should imagine it would benefit in this neighbourhood.
3701. Is the settlement to the north-west very large, as compared with the settlement on the travelling stock route—is it much larger? I could not say of my own knowledge what settlement there is to the east of that line, but I fancy that there is a great deal more settlement to the north-west than to the east.
3702. I presume that nearly the whole of the produce of the Wee Waa district finds its way to Narrabri by road? Yes.
3703. Have you any idea of the gross number of the sheep and cattle within the police district of Narrabri? No.
3704. Have you any knowledge of the wool which is sent by road to Narrabri station from this part? No.
3705. You know very little beyond your own part of the country? No.
3706. Is there any other information which you would like to give with reference to this proposal? I think it would pay much more than the interest on the extra mileage if it were brought round by Wee Waa, as it would catch so much more loading.
3707. You think that although the line might be 10 or 12 miles longer than the red line, it would be justifiable to expend £40,000 more, by reason of the additional traffic which it would get? I believe so.
3708. *Mr. O'Sullivan.*] I presume that if a railway were constructed somewhere near Wee Waa it would be utilised as a trucking-place generally? I am pretty sure it would.
3709. But you know some drovers travel their flocks along the road until there is a rising market? I believe they do, but still the road on this side of the river is so bad that stock deteriorate greatly between here and Narrabri. There is very little feed. I [am sure that if there were a trucking-station drovers and owners of stock would far sooner truck here than travel the longer distance to Narrabri.
3710. It would be more advantageous to truck here than to travel to Breeza or some point further down, as they often do? Yes.
3711. Sometimes they have to travel along the line, because they cannot get trucks at Narrabri? Yes.
3712. *Mr. McCoirt.*] If the line were constructed by Gurleigh Point, at what point would you use it? If there was a station at the crossing of the river, it would be the nearest point to me.
3713. You would use the line at that point in preference to going on to Narrabri? Yes.
3714. *Mr. Ewing.*] How far do you drove your sheep now? To Narrabri, about 33 or 34 miles by the nearest way.
3715. Do you regard that as a very great distance to drove sheep? They do not improve on the road; they deteriorate.
3716. But still it is not a very great distance to drove them to a trucking-yard? Comparatively speaking, it is not; but it is a good distance to drove fat stock in the summer, especially if there is no grass.
3717. I presume your contention is that a railway due north gives no consideration to the western traffic? Not so far as I know.
3718. If you can get to Narrabri quite as easily as you can get to the direct line, you will still go to Narrabri? Yes, sooner than take stock anywhere along the "red" line.
3719. Therefore it is valueless to you? Yes.
3720. Does the same thing apply to all the western men? I should say so.
3721. All the western men who are far enough south to get to Narrabri? I should say so.
3722. *Chairman.*] Of what sort is the country to the east of the "red" line? When you get back east of the railway 10 or 15 miles you get into the mountains.
3723. What is the character of the country from this line to that point? Close to the line I should say that it is good agricultural land.
3724. Higher up the foothills is it fit for agriculture? There might be patches of agricultural land here and there, but not much. 3725.

- Mr. J. A. St. Clair.
28 Nov., 1893.
3725. It becomes less valuable as you get near the hills? Yes.
3726. This line, which is estimated to cost £153,000, is estimated to incur an annual loss of £905;—if the engineers consider that if it is brought by the travelling stock route it will cost at the least £400 a mile more, which would mean a larger annual loss, what then? The travelling stock route would be of no more benefit to us than the "red" route. I know that I would not use the travelling stock route. I do not know whether others would.
3727. How does the Collarendabri traffic get into Narrabri? I believe that some goes up this line.
3728. From the Walgett road? I could not say of my own knowledge.
3729. Do you know the country to the north of Moree? No.
3730. Have you ever been to Mungindi? No.
3731. To Collarendabri? No; I have been as far as Moree, but I have never been further west than 30 or 40 miles.
3732. Is there anything else which you desire to state? No.

Mr. Arthur Clayton Fenwick, selector, near Wee Waa, sworn, and examined:—

- Mr. A. C. Fenwick.
28 Nov., 1893.
3733. *Chairman.*] What is your occupation? I am a selector, about 11 miles to the north-west of Wee Waa. The area of my holding is 2,560 acres, but I have a brother with me, and we have two full areas.
3734. *Mr. Davies.*] Are you an old resident of the district? Seven years.
3735. Do you know the "red" route? Not until after it gets past Gurley station. On this side of Gurley I know nothing of the country.
3736. Do you know the travelling stock route? I have travelled that route fairly often.
3737. Would a railway by that route serve your holding much better than by the "red" route? Decidedly.
3738. How far would it be from your holding? I could get to Millie in about 23 miles.
3739. How many miles are you now from Narrabri? Thirty-six miles.
3740. For the sake of saving that short distance you would truck your sheep? Decidedly.
3741. Would you be prepared to pay 40 miles' trainage from Millie to Narrabri for your stock and wool? For fat stock, certainly. Look at the time you save.
3742. For wool? I have not gone into that question. We do more in fat stock than anything else.
3743. You would give the preference to the railway, although it means a difference of 13 miles? Yes.
3744. If the "green" line went by the travelling stock route, you would send your fat stock? I would.
3745. That would be 23 miles from your holding? Yes.
3746. At the present time the railway, if constructed by the "red" route, would be of no service to you? I do not think so, not knowing the country.
3747. Would you continue to send your fat stock by road to Narrabri if the "red" route were adopted? Yes. I think that if the railway were brought by this way it would bring in far more traffic—goods, sheep, and passengers. There are more people living out this way than there are up that way.
3748. Do you think it would serve the larger number of settlers? Certainly.
3749. What class of country is it—good pastoral country—from Gurley to Moree? Yes.
3750. Is it fairly settled? I do not know anything of the settlement, except from going along the road, and from station to station.
3751. On what run is your selection? Boolcarrol.
3752. Do you know that a large quantity of wool comes from Moree along the road to Narrabri? Yes.
3753. It forms a very large proportion of the wool that goes to Narrabri? Certainly not.
3754. Would you be surprised to hear that the station-master at Narrabri West (who has a record of all the wool that has passed through his station) has sworn that a very large proportion of the total comes from that direction—that only 10 per cent. of the whole comes from your district? I do not think he asked the carriers if they came from Wee Waa. I should think a third go through on the other side of the river.
3755. Would not the station-master know from the brands on the bales? There are two roads which pass this way.
3756. But would it not be known from which direction it came? Certainly. All wool coming from the north-west must come this way—it would not go round by Moree.
3757. It passes this way? It passes, perhaps, on the other side of the river.
3758. Would not the bales show who consigned the wool? Certainly.
3759. Would not the station-master be in as good a position as anyone else to know whence it came? He ought to be.
3760. As he has no interest to serve other than the public interest—as he is not concerned about the route of the railway—he must be taken as an independent witness? I am pretty certain that a little more—not much more—comes from Moree than comes from this way.
3761. You place your opinion against the station-master's? He must know better than I do. I know it was with some wonder that I read his statement that only 10 per cent. of the whole traffic came from Wee Waa; I could not make it out at the time.
3762. How many selectors in your district would be served by a railway along the travelling stock route? I do not know the number, but it would be a large number.
3763. Do you know the quantity of stock and wool that would be sent to market? No.
3764. You do not know anything about your neighbours? No.
3765. Have you anything further to say? No; but a line from Narrabri to Gurleigh Point would, I think, serve a bigger section of the people than a line along the travelling stock route. I think the extra traffic would more than pay the interest on the increased cost.
3766. Do you think it would be fair to the people of Moree, and beyond, to charge them with 10 or 12 miles of additional haulage, as well as the interest on the extra cost? I do not say that; but I say that the traffic and the goods would pay the interest on the cost of the extra 10 or 12 miles, and pay the Commissioners.
3767. Do I understand you to say that the traffic which would come from Gurleigh Point would be larger than the traffic which would come from Moree? No. I say that the traffic from round here by Gurleigh Point would pay the interest on the extra 10 miles.
3768. You do not consider that the people of Moree would have to pay additional trainage and additional interest

interest on the cost of construction? Certainly. What I look at is, that if by bringing the line 10 miles round this way the Government can get a bigger revenue, it is worth their while to come this way, and these people to the north will have to pay a little extra trainage.

3769. You think it would be quite fair to charge the people along the line beyond your district additional mileage and additional interest on the cost of construction, so as to secure the trade of your district? I would not say that.

3770. Is not that what I understand you to say? No; I say that the returns from the additional 10 or 12 miles would pay the interest on the extra capital.

3771. *Mr. O'Sullivan.*] On what portion of Boolcarrol is your selection? I know we are 6 miles from Boolcarrol head station.

3772. That would be about the centre of the resumed area? I have not studied the map.

3773. You are 22 miles from Millie? Yes, by going through selections and properties with the leave of our neighbours.

3774. For the conveyance of fat stock you would use the railway station at Millie? I think so.

3775. It would pay you better to use that railway station than to drive your fat stock to Narrabri? I do not say that it would pay us better, but we should save time.

3776. When you spoke of taking your fat stock to Millie, you meant to the bend of the railway nearest to Millie, if the line went by the travelling stock route? Of course I spoke of Millie; I do not know how far the curved line goes from Millie Post Office.

3777. It is about 3½ or 4 miles? Of course we should have to consider whether the extra carriage would do. If they went to Millie, and the market was good, and we could get them in quickly, it would pay us to send them by rail from that point.

3778. With regard to the stock and wool which come down from the north-west, via Wee Waa, and go on to Narrabri—is it a fact, as has been stated, that in certain seasons of the year, when the lower road is not workable, they take the road via Millie into Narrabri? I do not know anything about the north-west.

3779. Coming anywhere north of Orel and Mungyer? That is out of my district, but I should imagine that they would go into Millie.

3780. Have you ever considered the possible effect which a railway via Gurleigh Point might have on the town of Wee Waa—has it ever struck you that where it turns to go north a rival town might spring up to the detriment of Wee Waa? Yes, it might. I said Gurleigh Point, but of course the nearer it comes this way the better for us.

3781. I suppose you would prefer the railway, if possible, to be brought to Wee Waa? Yes.

3782. I presume the conditional purchase settlement around you is of a substantial and permanent character? Yes.

3783. Have you heard of any selectors selling out to large station-holders? There have been cases, but they occurred some years ago.

3784. There are a few cases, I suppose, of selectors selling out to each other? Yes.

3785. But there is nothing like a general clearing out by men who have failed? No.

3786. *Mr. Ewing.*] Have you cultivated anything at all? No.

3787. You have only grown wool? Wool and fat sheep.

3788. You can get to Narrabri, I presume, as easy as to the direct line? Yes.

3789. Therefore, if the direct line is made, Narrabri is still your nearest place? Yes.

3790. Would you send more stock and wool if the line went more to the west, do you think? It all depends on the season. I would send as much as I could.

3791. The seasons will still be the same whichever way the railway go. Yes.

3792. The productiveness of the land is a matter of season? Yes.

3793. The question whether the line is taken nearer to you, or will still travel from Narrabri, will make no difference to you in the aggregate? No.

3794. What has the railway to do with the fattening of stock or the growing of wool? It has a good deal to do in an agricultural district? Yes; I do not know anything about agriculture.

3795. *Chairman.*] How far to the north of your holding are you familiar with the country? I have been from my holding to Moree and on to the Barwon.

3796. At what point on the Barwon did you aim? Kunopia.

3797. You did not go to Moree to go to the Barwon? I did. I have been down the Barwon from Goondiwindi to Mungindi.

3798. Have you been down towards Walgett? I have been from Bourke down to Mildura, but not between Bourke and Mungindi.

3799. How long is it since you were up that way? Seven years. I was out at Kunopia twelve months ago.

3800. Is there much trade going to Narrabri from there? I should think so—it is the main road in through Moree.

3801. Is there a large and good area of country between Moree and Kunopia? Yes.

3802. Do you think that country is more capable of large development than the country immediately around about Wee Waa? No; I think this is the better land of the two.

3803. The products are more likely therefore to increase than in the country up towards Kunopia? Yes.

3804. Does the same hold good with reference to the country towards Goondiwindi? It is all flooded country out that way.

3805. Is not this flooded country? No; not to be compared with that country up there.

3806. What about the country towards Mungindi? It is all good grazing country.

3807. But comparing the country round this district with the country about Mungindi, Kunopia, or Goondiwindi, you would give this country the preference? Yes.

3808. Did you examine that country before you settled down here? I have an interest at Kunopia now.

3809. Do you think the volume of trade from Narrabri to beyond Moree is likely to be largely increased by a railway to Moree? I am not in a position to say, because I know very little about the other side of Moree—I only know about my own holding.

3810. You say you have an interest out at Kunopia? Of course, all our stock and wool will go to Moree because it will be the nearest point on the railway to us.

3811. At present you go to Narrabri? It passes Moree, and goes to Narrabri.

3812.

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Fenwick.
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- Mr. A. C. Fenwick.
28 Nov., 1893.
3812. Do you know whether from further north than Kunopia trade finds its way down to Narrabri? No.
3813. *Mr. Ewing.*] Do you know the Queensland country to the north of Kunopia;—have you ever been over in Queensland? I have been over about the country.
3814. Do you know by repute what kind of country it is? I hear that it is good country.

Mr. James Maiden, drover, Wee Waa, sworn, and examined—

- Mr. J. Maiden.
28 Nov., 1893.
3815. *Chairman.*] What is your occupation? I am a drover residing at Wee Waa. I have lived at Wee Waa twelve years, and resided in the district twenty-five years.
3816. *Mr. O'Sullivan.*] How is it that Wee Waa, one of the first towns on the Namoi, has not progressed at the rate which might have been expected? The land was in the hands of a few persons, who would not let it. These persons have been holding on in anticipation for the railway coming.
3817. Were not all these runs divided under the Act of 1884, and the resumed areas thrown open for settlement? Yes.
3818. Why was there no rush of settlement here, as there appears to have been further north to Morce? I think all the land has been taken up. It is all gone.
3819. But still the town of Wee Waa appears not to have progressed at that rate at which it should have progressed, considering the large area which is open for settlement around it? I could not tell you the reason why it has stopped.
3820. It is the oldest town on the Namoi? Decidedly. It was known long before Narrabri.
3821. It appears to have made more progress during the last year or so? It has.
3822. Which districts do you travel? I travel principally from Queensland in this way.
3823. By which route? I always come from St. George to Mogul Mogil, thence to Collarendabri, and thence straight by the lower road to Narrabri *via* Wee Waa.
3824. Can you always come by the lower road with stock? I have never been stopped.
3825. Have you ever heard of flocks of sheep being driven round by Millie into Narrabri instead of going by the lower road—the road nearer to Wee Waa? Never, because they could not travel. They might have gone there to suit their own convenience. They could have come this way if they wished.
3826. Is it a fact that the sheep of Mr. Richards, of Riverstone, travel by Millie? I think they did on one occasion. I do not know why they should.
3827. In what way to suit their convenience? If the trucks are not available at Narrabri West they cut the time out. I have been sent round for that particular purpose.
3828. Have you ever heard that the crossing on the river prevents them from coming this way? Yes; because there is a bridge wanting at a small creek out here.
3829. May that not be the reason why some flocks are driven by way of Millie? Yes.
3830. You refer to a crossing 6 miles from here, down towards Naraabri? No; on the north-west of Wee Waa on the road to Collarendabri.
3831. Have not you any bridge up this way? There is the bridge over the river, but no bridge across the creek. I have not heard of any one being blocked by the river.
3832. Does the wool always come this way from Collarendabri and Mogil Mogil? No.
3833. By what road does it come? It turns off one road back about 40 miles, and comes in at the river about 6 miles above here. It is a detour from what we term the main Collarendabri road. For about 15 miles they make a bit of a detour by Bulleroi.
3834. As an old and experienced drover you assert that this is the natural road for the stock and wool which come from the St. George district in Queensland and from Mogil Mogil and Collarendabri to Narrabri? Decidedly. I may add that beyond St. George they are all cattle stations. There is no wool there at all after you pass the Australian Pastoral Company's stations.
3835. Do you know the company's properties? Yes; the bulk of their wool goes to Yeulbah.
3836. Do not they send some over here? Yes.
3837. By which road does it come? By whichever road they think is the best. This is their natural road. The lower road is the best.
3838. The company's shearing sheds are at Dareel? No; about 40 miles further west.
3839. They propose to erect their shearing sheds at Dareel? I was speaking to the manager a short time ago but he never expressed any intention to that effect. The company have their scour at Dareel.
3840. Have you heard any talk of the company shifting their shearing sheds to New South Wales? No. When I saw the manager he expressed his intention of shifting the sheds 40 miles to the north-east, towards Warwick.
3841. That would be an evidence that they intend to send their wool to Brisbane *via* Warwick? Warwick is east from the Australian Pastoral Company's properties.
3842. Is it not a fact that Sydney offers very much more accommodation and many more advantages than Brisbane to those persons who wish to sell their wool in the colonies? It may, but I think it is just a matter of freights. If they can get it sent cheaper by Brisbane to Sydney they send it by that way.
3843. Do not those who desire to sell their wool to Sydney, where all the foreign buyers attend, send it down through New South Wales in preference to sending it *via* Brisbane? They send a lot of it by Brisbane, and thence it goes to Sydney. Some maintain that it is cheaper to send the wool by that way, while others contend that it is not. I have heard it stated that there is a saving 10s. a ton in sending the wool by Brisbane.
3844. Do you think a railway *via* Gurlough Point to Millie would attract that trade? I do not think so.
3845. They would still be guided by the cost? Decidedly.
3846. Is the country more settled out towards Mogul Mogil, say going from Wee Waa? There is hardly an acre which you can get, except a piece which is of no use. The settlement is of a permanent character. An odd one may sell out, but the majority will not sell at any price.
3847. Do you think there will be a rush of settlement out there when the leasehold areas are thrown open? I am very much afraid that they will take a lot when it is thrown open. I am afraid that it will be swamped.
3848. In considering this question we ought not to be guided by the mere traffic of to-day, but the prospective traffic? Decidedly. From a national standpoint I am looking at the question.

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3849. As a man of considerable experience, do you think the interests of the country generally would be better served by a line *via* Gurleigh Point than by a line by the red route? I think the further west it goes the better it will be for all parties. I maintain that there is a larger traffic to be served to the west.
3850. The cost would be very much more, and the annual interest and working expenses would be considerably more. With that knowledge do you think the extra traffic would more than compensate for the additional cost of the line? Decidedly so.
3851. You contend that notwithstanding that it will be a longer line, it will in the end pay the country better than a "red" line? I should think so. It will command a larger amount of traffic.
3852. Would a line by Gurleigh Point be of any use to the Collarendabri district? It would serve them very well, but the further they came this way the better. If they could not take it any further west I suppose they would have to put up with it. The proposed line would be utterly valueless to them.
3853. Which line, in your opinion, would serve the district out towards Collarendabri—not the submerged portion of the district—a line by Gurleigh Point or a branch from either Boggy Creek or Woolabrar *via* Millie? The Gurleigh Point line, decidedly.
3854. *Mr. Ewing.*] You know Boggabilla, Kunopia, and Mungindi? Well.
3855. Taking these towns as points on the MacIntyre, is the country to the north in Queensland perfectly valueless—is it poor country? It is worse than the country to the south of the Namoi.
3856. You have no doubt whatever about that? Not the slightest.
3857. How far north does it extend from the McIntyre? A distance of 140 miles—to within 15 miles of Dalby.
3858. Does the Queensland railway run as far as Dalby? Yes.
3859. Until you get within 15 miles of the Queensland line the country is perfectly valueless? It is.
3860. Are we justified in believing that from that tract of country no great amount of traffic will come? No; they are all cattle stations.
3861. Would the cattle be driven this way? They are all stores which come from that portion of Queensland.
3862. You believe that there will be no traffic done? No.
3863. The Mogil Mogil traffic joins with the Collarendabri traffic at Collarendabri and comes over the bridge? Yes.
3864. At present all from the north and north-west is making for Narrabri, that being the terminus? Yes.
3865. Presuming that the terminus is moved to Moree, would the Mogil Mogil traffic and the people go to Moree? I think they would; because there is very little difference in the distance.
3866. Do you think the Angledool people would go? I think so. There is a difference of 30 miles.
3867. From Collarendabri to Moree is 30 miles less than from Collarendabri to Narrabri? It is between 25 and 30 miles.
3868. At present the traffic is making to Narrabri? Yes.
3869. Supposing the terminus is moved from Moree, where will the Mogil Mogil people go then? I think they will still go to Narrabri West.
3870. Although from Collarendabri it is 30 miles less to Moree than to Narrabri? Yes. I may say that there is a tract of country there for about 25 miles which is practically impassable. It is all reed beds and the traffic could only get down in dry weather.
3871. You are perfectly sure of that? Yes; I have lived there.
3872. At present, coming from the Angledool and Mogil Mogil, crossing the bridge over the McIntyre, you go through Bullerai to Narrabri West? No.
3873. Coming from Mogil Mogil and Angledool which road do you travel to get to the railway station? They strike the river at Gurleigh Point and follow the river up on the north side.
3874. Supposing the railway were deviated through Millie, do you think the traffic from Angledool would go to Millie? I think it would if the line were taken to that side.
3875. If the line ran 15 miles east of Millie, would the Angledool traffic go to Woolabrar station? No; I think it would go to Narrabri, because of the difference in the distance.
3876. Supposing the difference is over 20 miles? I think they would take 20 miles of road carriage and save the railway freight for 40 miles.
3877. With fat stock? I could not say. It would be purely a question of hitting the market. My experience of fat stock is entirely guided by the state of the market.
3878. You travel along until you have made arrangements for them? Yes.
3879. Does any traffic come here from Walgett? A considerable amount.
3880. Does it come when the river is up? No; it goes by steamer, then to Bourke, and thence to Sydney.
3881. Do you think that more produce will come to Moree as a depot from the north-west and north-east, or is there more coming from the direct west? I think there is more coming from the direct west. There is a larger scope of country out there.
3882. Your evidence goes to prove that in your opinion the "red" line would be of no value to the western country? Decidedly.
3883. How far does the flood come east from Mogil Mogil and the bridge coming from Angledool? From about 5 miles due west of Moree it starts to overflow, and it overflows for miles and miles. I have known it to be 60 miles wide with very slight islands. The Gwydir runs out 5 miles below Moree, and floods right down to the Barwon.
3884. Going south, does the Moomiu overflow? Yes; it is practically the same water.
3885. How much water would there be over an ordinary country, say going due north of Wee Waa? You would not touch that flood-water going from here to Moree.
3886. It would be all west of direct line from Wee Waa to Moree? Yes; it would not touch any of the flood-water I am referring to.
3887. Have you ever seen the travelling stock route from Moree to Narrabri under water? Not from flood-water.
3888. Never? In heavy rains I have seen water lodged in places.
3889. It is not back-water from the river? No.
3890. Were you ever stopped on that road? Never.
3891. How far would it be west of Millie before you reach the flood-water coming down the Gwydir, Mogil, and Barwon? At a place called Jack Shay's Camp, 8 miles west-north-west of Millie.
3892. The road from that point to the Barwon is flooded? It is.

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3893. Is it seriously flooded? It varies from 18 inches to 3 feet. It is on the Mungindi trial survey. In flood time it would all be under water, on an average, a couple of feet.
- 3893½. How far south does that go? That diverges in again above Collarendabri.
3894. How far north of the track you use from Angledool to Bulleroi? About 12 miles north. That is the limit of the flood-water.
3895. Going south of Millie it goes within 12 miles of Bulleroi? About that.
3896. How far is Bulleroi from Millie? About 28 miles.
3897. The flood-water therefore goes 16 miles south-west of Millie and 8 miles north-west of Millie? Yes; as nearly as possible.
3898. Does it flood this track at all as you come from Angledool? No.
3899. You spoke of a creek 6 miles out from Wee Waa? That is flooded from the Namoi.
3900. *Chairman.*] The boundaries you have been giving embrace only the floods from the Gwydir? Yes.
- 3900½. *Mr. Ewing.*] Taking a point 20 miles along the road from Angledool to Bulleroi or Wee Waa, how far north would the flood go? I should think about 9 miles.
3901. Would it keep about that distance off the roads? Yes; it commences to come in there.
3902. But at no part of the road does it cross over? No.
3903. Taking it from Wee Waa, how far out does the flood go to the north when the Namoi is in flood? It varies considerably, according to the time the flood may last.
3904. Taking the highest flood you have known? I was not here in 1890. The highest flood I saw was eight months ago.
3905. How far did the flood-waters extend north of Wee Waa? I met them 6 miles from here at that creek. I never saw any overflows till I got here.
3906. How far north did it go? Six miles—not over the country, but in the creek. It is in creeks and billabongs.
3907. Speaking of the Gwydir flood, you mean that the whole country is covered? I do.
3908. But here only billabongs and depressions are filled? Yes.
3909. And 6 miles north? Yes.
3910. As you go down the Namoi, is the width 6 miles? It varies at distances. It comes in and runs out again. There is very little traffic down the river road. The traffic all keeps out.
3911. It goes by the Namoi towards Narrabri? No; it is not flooded towards Narrabri.
3912. Between the Gwydir water and the Namoi water there is an elevation which you never saw flooded? Yes.
3913. Therefore, if the railway were taken to the west it would have to be taken by that route? Yes.
3914. You believe there is dry land going to the west? I do.
3915. And that it is never flooded? There may be slight depressions flooded, but I believe that is caused by local rains.
3916. *Mr. Davies.*] You stated that, looking at the question from a national standpoint, you could not approve of the construction of the direct line, because it would not serve the settlers in the district, but that you would favour the construction of the line by a route which would serve the settlers and producers of the Wee Waa district? I said that if the traffic on the Moree line warranted the construction of a railway I considered that the traffic on this line warrants the construction of a railway even more. Personally I am averse to railway construction—I do not consider it is necessary.
3917. What becomes of your consideration of the question from a national standpoint? If according to the staff in Sydney it would pay to go to Moree, it would pay far better to come by this way, I think.
3918. Why are you averse to the construction of railways personally? Well, from reading a good deal, I find that the railways are not paying. If a line will not pay, I say "do not construct it".
- 3918½. Do you think that this railway will not pay if it is constructed by the "red" route? I do not.
3919. If the Commissioners and the officers of the Government have ascertained the probable amount of the trade and traffic that will be carried on the direct route, do you think that their estimate is of no value, or do you think that they are competent to form an opinion? I have seen estimates given in regard to other lines, and the estimates have fallen very considerably short of the actual expenditure.
3920. The lines to which you refer cost £8,000, £10,000, or £15,000 a mile, but the cost of this railway is estimated at £2,400 a mile, the cost of an ordinary macadamised road. Do you think that a good macadamised road could be formed, made and metalled at a cost of £2,400 a mile in the country to which you refer? I really could not tell you.
3921. It will be a very economical line if it can be constructed at that price? Decidedly.
3922. Would not a railway constructed at a cost of £2,400 a mile, and worked at a speed of about from 10 to 15 miles an hour be of far greater advantage to the district it traversed than an ordinary macadamised road from which the country would get no return, whereas from the railway they would get the freights, and some return on the capital expenditure—which work would you prefer to be carried out at the public cost? A railway, decidedly.
3923. I presume there is scarcely a man in the district who knows the country through which the survey has been made better than you do? I do not think so.
3924. You have traversed it many a time over many years? Yes.
3925. Your business brings you in contact with the road, and causes frequent visits to St. George? Yes.
3926. Are you aware of the large amount of wool which has come from that district beyond Moree and all along the road in the district of Moree, even in the present season? I know what leaves Narrabri West.
3927. Have you not seen thousands of bales of wool coming along the road to Narrabri station? I have.
3928. Would it not be of very great service to the producers to be able to send all that wool by a cheap line from Moree worked at a speed of 15 miles an hour? It may promote settlement.
3929. It would pay the consignees to send the wool by rail rather than by team, would not a railway 62 or 63 miles long be an advantage to the consignees? From that standpoint, it would.
3930. Would they not have certain transit when the market was advantageous? Decidedly.
- 3930½. Do you not think that a railway constructed at a cost of £2,400 a mile would secure a much larger traffic and trade than is brought to Narrabri? Yes; but my experience is that estimates are always considerably below the actual cost. I do not know a railway which has been built for the estimated sum.
3931. You will admit that if the line can be constructed at anything like £2,400 a mile it will be cheaper than a road? Decidedly.
3932. Even if it were to cost £3,000 a mile it would be better than a road? It would. 3933.

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3933. And this district might be served in some other way by a branch to that line? I do not think so.
3934. You are still of opinion that the surveyed route would not tap the trade here, that it would all filter to Narrabri? Yes.
3935. But the distant traffic would be secured by the railway? I think so.
3936. A good deal of country would be opened up by the railway? Decidedly.
3937. Is there anything else you would like to state? With reference to Mr. Gould's statement that only 10 per cent. of the traffic comes from Wee Waa. My experience is that he has no idea as to where the stations are situated. He gets the names of the stations on the bales, but he has no idea of the districts from which they come.
3938. Do not the weigh-bills show who sent the wool? It would give the name of the station, but not the names of the towns it came through. It would not give you any idea, unless you had a personal knowledge of the country.
3939. Would it not be possible to get some one who has a practical knowledge of every holding in the district to go through the weigh-bills? They could.
3940. Do you know whether any portion of the country through which the "red" line goes is timbered? It is timbered about half-way out.
3941. Is it good timber? No, scrub.
3942. Do you know if there is any timber fit for sleepers? I do not.
3943. Do you know of any ballast or gravel along the surveyed route? I do not.
3944. You do not know whether material exists either for ballast or sleepers? There is none that I am aware of.
3945. Is there not a good ironbark forest near Narrabri? Not that I am aware of. I know the forest you refer to, but I could not call it good timber. They never go there for timber, they come out here.
3946. Where did they get the 25,000 sleepers for the Railway Commissioners? Principally on Bohenna Creek on this side of the river.
3947. *Chairman.*] Knowing the travelling-stock routes, and the district well, can you state at what point most of them converge? They principally all converge here.
3948. Do you think that more travelling-stock routes converge at Wee Waa than at any other point within a radius of 60 miles? I think so—not exactly at Wee Waa, but at a point within 4 or 5 miles of Wee Waa. They come in at different points on the river.
3949. How long is it since you were at Goondiwindi? About two years.
3950. Where you travelling stock then? Yes; I was going over to Forbes.
3951. Do any stock travel from Goondiwindi to Narrabri? Not many, an odd lot of store cattle.
3952. How long is it since you were at Kunopia? Nine years.
3953. Where you travelling stock then? I am sorry to say I was going to Walgett with store sheep.
3954. What direction did you take? I was going down the river.
3955. Did you go all along the river? I did on the Queensland side of the MacIntyre.
3956. When were you last at Mungindi? About twelve months ago. I was going out for travelling stock there. I do not come in that way. I go out that way.
3957. Roughly, you have been limiting your operations as regards stock from St. George, *via* Collarendabri, Mogil Mogil, and Wee Waa? Yes; I may say that I principally drove store stock from Queensland.
3958. Is your preference for the road *via* Wee Waa to Narrabri caused by your household goods being located in Wee Waa? Decidedly not.
3959. It is because you found that was the very best road that you afterwards fixed your residence here? I found that it was the most central one for me.
3960. It gave you the command of a larger area of country than any other point? It did.
3961. Have you many interests in Wee Waa or in this community? I have none, but some members of my family have in town lots.
3962. In stock? No.
3963. Presuming that Collarendabri is to be connected with the railway system, and it is a fact that the dividing line between the watersheds of the two rivers is practically a straight line drawn from Edgeroi Station on that map to Collarendabri, would that not be the best direction in which to take a branch line? I do not think so.
3964. In what direction ought the branch line to go—first to escape as much as possible the flooded country, and secondly to secure grist for the mill? I think that the line should continue from Narrabri west on the south side of the Namoi to a point near Wee Waa, cross the river at that point and take a direct course to Collarendabri.
3965. That, in your opinion, would escape most of the flooded country on the Namoi and the Gwydir, and would also be convenient for tapping the traffic? I think so.
3966. Putting this extension out of consideration altogether? I should say it ought to go by the way I have suggested.
3967. If, on survey, it were found that the highest line above flood-mark between Narrabri and Collarendabri was *via* Narrabri and Edgeroi and then due west, would that modify your opinion? It would not, because there would be such a large detour.
3968. If it has been asserted at Millie and other places that the bulk of the traffic from Collarendabri and the country surrounding that town comes to Narrabri *via* Millie, you do not concur in that opinion? I do not.
3969. Of the trade of Collarendabri and district, what proportion, do you think, goes *via* Millie to Narrabri as against *via* Wee Waa to Narrabri West; or better still by the lower road? I should think that over 80 per cent. of the traffic goes by the lower road.
3970. Is there any left to go *via* Moree, supposing the railway is extended to that town? I do not think you would ever get any of the Collarendabri traffic at Moree.
3971. You might get some of the Mungindi traffic? You might.
3972. If the "red" line is constructed some of the Mungindi traffic might go to Moree terminus? It would; but if the country were dry you would not get the traffic for the simple reason that it is only 95 miles from Mungindi across the old trial survey to Narrabri, and it is 72 miles direct to Moree.
3973. Can you describe where that old trial survey starts from, and crosses over into Narrabri? It is a duo direct line. I know there is not a turn in the line.

- Mr. J. Maiden. 3974. Where did it go along at Narrabri? It came to the south of the travelling-stock route. I could not tell you exactly; but it came somewhere in the town.
3975. Do you also hand in a list of the stations which will be served by this route? I do.

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WEDNESDAY, 29 NOVEMBER, 1893.

[The Sectional Committee met at the Court-house, Wee Waa, at 8.30 a.m.]

Present:—

JACOB GARRARD, Esq. (CHAIRMAN).	
The Hon. W. H. SUTTOR.	WILLIAM McCOURT, Esq.
The Hon. JOHN DAVIES, C.M.C.	EDWARD WILLIAM O'SULLIVAN, Esq.
THOMAS THOMSON EWING, Esq.	HENRY DAWSON, Esq.

The Sectional Committee further considered the proposed railway from Narrabri to Moree.

Mr. James Maiden, drover, Wee Waa, sworn, and further examined:—

- Mr. J. Maiden. 3976. *Chairman.*] In the course of your travels through the district have you frequently struck the old trial survey from Mungindi to Narrabri? Yes; I was with the surveyor when he ran the line. I was interested in a property that he ran it through.
3977. From Narrabri right on to Mungindi? No; about 45 miles from Narrabri I joined him. I showed him the way through the water-course country which is the overflow from the Gwydir.
3978. Does the line follow the highest portion of ground between Narrabri and Mungindi? Down as far as Jack Shay's Camp, when it goes into the overflow country.
3979. You cannot approach Mungindi from any position without getting into this overflow country? No. The surveyor reckoned that it would take piles for about 30 miles.
3980. Does similar country to that country exist near Collarendabri? No. It diverges and the rivers reform. They run in again in the proper channels.
3981. It would be less difficult to make a railway to Collarendabri than to Mungindi? Decidedly.
3982. The rivers are more defined at Collarendabri? They are within their proper banks.
3983. Would the difficulties you have described against making a line to Mungindi operate as much if it were made from Moree to Mungindi as from Narrabri to Mungindi? They would not have quite as much to contend with.
3984. The country from Narrabri to Mungindi direct is more liable to flood and overflow than the country from Moree to Mungindi direct? Yes.
3985. In drought, does not a large quantity of stock come from the direction of Mungindi towards the mountains? They continue up the MacIntyre.
3986. And do not come across country here? Stock from this way have to go, but other stock can be taken up the river.
3987. We may take it then that starving stock, south of Collarendabri, would go this way to get to better pasture? Yes.
3988. But that north of Collarendabri they would go higher up the MacIntyre rather than go across country? That is the natural course, the shortest and most direct.
3989. In that case if the line were being constructed for the purpose of dealing with starving stock, it would be better to go to Collarendabri than to Mungindi? Decidedly.
3990. It would pass through more sheep bearing country, and would tap a greater sheep-bearing country beyond? It would.
3991. Is there any other point we have not touched upon? Only one. I may mention that there is an inexhaustible supply of sleepers at the back in this forest for railway bridges or anything of that sort.
3992. How far back—how far would you have to go for timber? I suppose you could commence at 5 miles and go as far as you like.
3993. Can they be obtained any nearer to Narrabri than Wee Waa? It continues out a bit, but not very far.
3994. Is there plenty of material for ballast? There is any quantity of ballast about 8 or 9 miles up the river towards Narrabri.
3995. Do you put in a list of the selectors in the various runs in the district? I do.
3996. Will you state how many selectors you know personally to be on each run? Merah No. 1 and No. 2, 36; Drilloom, 14; Gorian, 9; Burren, 14; Wee Waa, 14; Bugilbone, 23; Millie, 12; Gundemaine, 19; Nowley, 10; and Keelendi, 18.

Mr. William Mackenzie, drover, near Wee Waa, sworn and examined:—

- Mr. W. Mackenzie. 3997. *Chairman.*] What is your occupation? I am a drover residing mostly at Yaraldool station on the Namoi.
3998. Do you furnish a list of the selectors on the Cuttabri, Bullerawa, and Yaraldool stations? I do. [Vide Appendix.]
3999. How many selectors are there on each run? On Cuttabri, 5; Bullerawa, 3; and Yaraldool, 13.
4000. You know the selectors very well? I do.
4001. You know that these selectors are still on their selections? Yes.
4002. *Mr. McCourt.*] Have most of them finished their five years' residence? A few, but not all.
4003. Do you know the country which the "red" line traverses? Yes; pretty well.
4004. Is it good for settlement? I do not think it is.
4005. Do you know the runs through which it goes well? Very well.
4006. Do you know the Gurleigh Point route? Yes.
4007. On which of these routes is there most Crown land available? I should think on Gurleigh Point route.
4008. To what extent? To a very considerable extent.
4009. Would the value of those Crown lands be increased by the construction of a railway by the Gurleigh Point route? I should think so, considerably.

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4010. Which road do you take from Collarendabri? I always come across the Thalaba, in here at Pian Creek, and straight in this way

4011. Do you ever come through Millie? I have been in through Millie, but I never take stock by that way. It is too dry.

4012. In very wet weather would you come through Millie? No. There is nothing on this other road to stop me.

4013. Wet or dry you would come by Wee Waa? Undoubtedly.

4014. You desire to make a statement? I am under the impression that the further west the railway goes the better it will be for the country. All along the "red" route it is what you may call barren country—it is wretched along the edge of the mountain. I do not see that it is of much use for anything.

4015. If several witnesses have sworn that the land is good to the east of the line towards the mountains they are not correct? I should not think so. I cannot say within a few miles of the line, but if it runs very close to the ranges the country on the other side is no good.

4016. Do you know about how far it is from the "red" line to the mountains? It is only about 24 miles.

4017. It is from 15 to 20 miles to the foot of the mountains? Well, the country within that distance is not very good, for there is a considerable lot of scrub.

4018. Not nearly as good as the Crown land on the Gurleigh Point route? Nothing like it—it is all good land this way.

4019. I suppose all the Crown lands on the Gurleigh Point route that are available have been taken up? Yes, every acre, I think, except what is in the leasehold area. There might be an odd reserve or two.

4020. Was the land on the Gurleigh Point route proclaimed a railway reserve? I could not say.

4021. Do you take stock from anywhere else besides Collarendabri? I have been droving pretty well all over New South Wales during the last seven or eight years.

4022. Which way do you generally take stock? I have been in part of Queensland, and pretty well all over New South Wales. I was two years with a surveyor. I know every inch of the Barwon up to Kunopia.

4023. If you were droving stock from Mungindi towards Narrabri which way would you go? I would go down the Barwon to Mogil Mogil in across the Thalaba and down this way. As regards the other road it is only an odd time that you can get any water there.

4024. Suppose the railway were taken to Moree, and you were taking stock for Mungindi? Of course that would make a great deal of difference in the length of the journey, but I do not know whether it would not pay them to bring sheep into Narrabri provided that they could get grass all the way as it is much cheaper to travel by road than rail.

4025. Would it pay to bring fat sheep this way? Certainly. You can drive fat sheep—in fact any sheep—far more cheaply than a railway can deliver them. The only thing which blocks stock from coming in is that they can not get sufficient ground.

4026. If the railway were constructed *via* Gurleigh Point instead of bringing them to Moree you would bring them to Gurleigh Point? I think it would be far cheaper. It would be better for the stock, but if they wanted to hit a market they would certainly go to Moree.

4027. Where would you take them from Kunopia or Angledool? It is somewhat the same.

4028. *Chairman.*] Do you mean to say that you would go past the terminus at Moree for the purpose of droving your stock down that way? If there was grass, I would.

4029. And if the stock can be driven any more cheaply than by the railway? Drivers can drive them more cheaply from Kunopia to Narrabri than the railway can carry them.

4030. According to you it is of no use to construct the line? I do not say that. I think that is the proper route for the line to go. It opens up country. The country in this direction is far more valuable than the country at Moree. On the other side of the Barwon towards Goondiwindi it is all useless country.

4031. As a matter of fact, do not the drovers aim at the nearest point on the railway? No; it is against their interests to do it.

4032. But the owners of the sheep? Not always. As long as they could get grass they would rather take their sheep by road. I went in to Sydney last March with sheep.

4033. As a rule, do they not want to get their sheep quickly into market? Not always. If they can get grass and water they would far sooner send them in by road than truck them. It is far cheaper to take that course. They can save a shilling a head from Narrabri to Sydney. It does not cost 1s. to deliver sheep by road from here to Sydney, whereas it costs about 2s. by train.

4034. *Mr. Dawson.*] Do you know Tyreel? I have been over it.

4035. Does Mr. Richards send direct to Sydney or does he truck? He sends them mostly by the road on the other side of the river.

4036. From what place did you take sheep last March? From Bugilbone down the river, and on to Homebush.

4037. You had plenty of pasture and water on the road? Yes; at that time—it was a good time.

4038. How many sheep have you trucked at Narrabri compared with what you have driven to Sydney? I have been in only once with sheep to Sydney. I am constantly going from Yarraldool or wherever Mr. Richards buys sheep. I dare say I have trucked 20,000 at Narrabri and Boggabri this year.

Mr. Peter Rafferty, sheep-buyer, sworn, and examined:—

4039. *Chairman.*] You are not a resident of the district? No.

4040. You have no interest in the district? No.

4041. But you have large dealings within the district? I buy a good many sheep.

4042. *Mr. Dawson.*] How long have you been dealing with the district? I suppose about twenty years.

4043. How many stock do you send away in a year, as a rule? I buy along the North-Western line. I buy on Liverpool Plains mostly. I buy a good many here. This year I trucked from Narrabri about 18,000 sheep.

4044. Do you buy much from the north-west here? Oh, yes; all west of Gurleigh Point, with the exception of one lot.

4045. Supposing the railway were extended by the "red" route, would any of the sheep you buy use that line? I have never bought sheep where the "red" line goes, with the exception of one lot, a very small lot, which I bought this year near Gurley from a selector named Manning.

4046.

Mr.
W. Mackenzie.
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Mr.
P. Rafferty.
29 Nov., 1893.

- Mr. P. Rafferty.
29 Nov., 1893.
4046. Would that line be used by him at all? I do not think it would. For any sheep I would buy west of Gurleigh Point I would not go by that way but would truck at Narrabri or the nearest trucking station.
4047. If that was Edgeroi you would use it, I suppose? I do not think I would.
4048. Why not? It has no travelling stock route, and you would have to go through private property.
4049. But supposing a travelling stock route is made and that water is provided? I suppose if I got sheep near the line I would truck them to the nearest point.
4050. If proper facilities were given for getting grass and water across the country from the travelling stock route, you would probably use that station? I always use the nearest point for trucking.
4051. From a national point of view which route would serve the country best? As far as I know about that "red" line I do not think it would be a paying line.
4052. Would it be used at all by the north-west people? Except those who are very close to the line.
4053. I mean for general traffic right out here? There is no one west of Gurleigh Point who would go there to truck.
4054. If there were a station at Millie or anywhere near there they might? They would be going out of their road.
4055. Is it not a fact that in dry seasons that is the only road by which they can possibly go from out back with any degree of safety? The nearest way.
4056. You say it is the general rule for a man to go to the nearest station when he wants to truck his stock? A man who wants to get them in in good condition does.
4057. If you have 20 miles to a railway station along a bad road and 50 miles along a good road, you go 20 miles along the bad road? We have done it here. This cleared line from Wee Waa to Narrabri is a bad road for stock, but I certainly would truck at perhaps Gurleigh Point, which is 6 miles from here, in preference to going any further.
4058. Do you buy the sheep yourself and take delivery on the station? I buy the sheep and take delivery. I pick the sheep and I have my own drovers.
4059. When you buy a lot of sheep you make up your mind on the station as to which way you will take them? Yes.
4060. It all depends on the state of the country;—you take them by what you think is the best road at the time? I take them by the best road. I would go by the nearest road to the trucking station.
4061. *Chairman.*] Is there any other point you desire to mention? On this side of Gurleigh Point I buy most stock. I very seldom buy any on the other side.

Mr. John Gray, selector, Wee Waa, sworn, and examined:—

- Mr. J. Gray.
23 Nov., 1893.
4062. *Chairman.*] What is your occupation? I am a contractor and selector. My selection is about 2 miles up the river. It consists of two 640 or 1,280 acres. I have been residing here about six years. I resided about ten or eleven years here and in the Moree and Mungindi districts. I have been connected with timber work for thirty years.
4063. Do you know the timbered country along Terry-Hie-Hie? Well. I have had men there time and again getting timber for me. It was used for a bridge over the Big River, at Boolooroo, and for a bridge at Ashley, and other bridges.
4064. It was for bridge work in and about Moree that you sent to Terry-Hie-Hie for timber? Yes.
4065. Did you find sufficient timber there for your purpose? I got timber there, but I have had great trouble latterly. I have had parties there three or four times for each bridge in succession, perhaps getting a few dozen sticks of sound timber.
4066. Is there any timber there suitable for sleepers? There may be large quantities got there.
4067. But none for bridgework? No.
4068. All the timber for bridge work would have to be brought from Pilliga Forest? Round about the south of Wee Waa. From here to Moree you would get none fit for bridge work. At Narrabri West the drawing is very heavy. I have had men out there several times.
4069. How far would you have to go from Narrabri to get sound timber fit for bridge work? About five or six years ago I had to go 30 miles from Narrabri.
4070. How far would you have to go from Narrabri West to get timber fit for sleepers, not ordinary sleepers, but half-round split sleepers? I have not been there since the last contract was let, but I should think about 15 miles.
4071. Supposing the railway were taken *via* Gurleigh Point, do you think it would lead to a large timber traffic to Moree and other parts from Pilliga Forest? Yes; there would be a great deal of pine sent that way. Hardwood is not so much in demand, unless for government work, but it can be got in quantity. Sleepers and pine can be got in any quantity.
4072. For sleepers the nearest timber would be obtained at Terry-Hie-Hie? The nearest sleeper timber to Moree would be obtained at about 25 miles towards Terry-Hie-Hie.
4073. But for bridge timber they would have to go to the forest to the south of Wee Waa and the south-east of Narrabri? Exactly. It is so difficult to get that some has been got from the Clarence and taken up from Newcastle. It is getting very scarce there.
4074. Do you know anything about the ballast? One of the strongest points in favour of the "red" line is that they can get ballast in that country. But they could get ballast at the Bald Hill, which would come in for another line within a reasonable distance of it.
4075. Do you know the country well which is traversed by the "red" line? I have been along that country several times.
4076. Do you know the travelling stock route to the west and the country still further to the west? I know the country to the west fairly well too.
4077. Which is the soundest country for railway construction—the country marked with a broad band, or the country on the travelling stock route, or more to the west of it? The country on either line would be equally as good, or nearly as good, from a constructive point of view, with the exception of the ballast. I do not think the flood-water would be serious by either route beyond the crossings of the river and a short distance back. I do not think it would affect the railway.
4078. As a matter of fact, the further you go west the more water there is to deal with;—does it not split

up into more channels? There is no water leaving the river of any account until you get a short distance below the railway crossing on the other side.

4079. I am speaking of all these creeks we see crossing the line. Is it not a fact that where the "red" line crosses the creeks the channels are fairly well defined, but that further to the west—10, 15, or 20 miles—the creeks spread out into a number of channels? Some of them spread out a bit but not seriously. I do not think they would be any great impediment to the railway.

4080. Would it not be more expensive to construct a line in that country than in country where the channels are defined? Well, close to the range probably there would be less bridging.

4081. If the Engineer-in-Chief estimates that owing to the spreading out of these creeks to the west a railway by the travelling stock route would cost several hundred pounds a mile more, would you controvert that opinion? No; I think that along there it could be made cheaper, but it would not be so useful.

4082. Do you know anything about the country at the crossing by Gurleigh Point? I am well acquainted with that country. I live not very far from there.

4083. Is it a fact that on both sides of that crossing there is a considerable area of flooded country? On the north side of the river at Gurleigh Point there is little or no flood. On this side of the river there would be for a short distance to the river. It would be a very high flood which would show along there at all. There is no water leaving the river above that.

4084. Do you think that if the railway were brought further west it would obtain more traffic than if it were taken by the direct route? The line under the foot of the ranges would have no feeders at all to the east. All would have to go from the west of the line. The question is whether the difference in cost would not be more than compensated by having feeders on the right and left, and they would be sufficiently well supplied with railway facilities as well as those on the range too. By taking the railway by the Gurleigh Point route all the Walgett traffic and the like would be secured; in fact, all the traffic of the district would be caught up by the branch.

4085. On the other hand, you would entail on the people of Moree and the people beyond that town 15 or 16 miles of extra haulage? There would be extra haulage for the people of Moree. If the railway be intended exclusively for the benefit of the two towns, the "red" line would be decidedly the best. But if it be intended for the benefit of the district and the Colony as a whole, I decidedly think that the other would be the best, for it would secure traffic from either side all the way.

4086. Have you formed any idea as to what proportion the traffic from the districts north of Moree bears to the traffic from the districts to the west of Millie—from what quarter does the greatest volume of trade come? If the railway went to Moree a good deal more of the Queensland traffic would be secured than is secured at present. I am not certain as to how much would be secured if it went Collarenebri way. I think there would be a great deal of Queensland traffic secured because you are a great distance from the Queensland railway. I have been out as far as St. George, and I was a good long while about Mungindi, where I built one or two bridges. I know all the country fairly out that way. I believe that you may get a good deal more of the company's wool by going that way with a railway.

4087. Presuming that a railway is constructed to Moree, never mind by which route, and that it is proposed to have an extension, in which direction should it be extended with the view of getting the largest amount of traffic—to Mungindi or Kunopia? I am hardly familiar enough with the country to say.

4088. Have you anything else to state? I have little more to add beyond to point out the advantage of making a branch line and securing all the Walgett traffic. It would be a boon to that district. If you make it round this way, the possibilities for this black soil, by farming as well as grazing, are very great. I have been putting in crops there for the last six years. On the black soil where I am, I get from 2 to 2½ tons to the acre of hay. Of corn, I get fair crops. Although twice in the dry season I had to make ensilage, I have never lost a hay crop. I have no doubt that when the leases are thrown open there will be settlement there very similar to what I have now. I think that by combining stock with cultivation there might be a deal of settlement there. That would be an important item, again, for a railway. Where there is a boundary rider now there might be 100 farms, perhaps averaging five or six persons each.

4089. You think there is a possibility of agricultural production here? I feel quite sure that if you combine farming and stock there will be a large production of that character.

4090. That holds good with reference to all black-soil country, I suppose? There are patches here and there very sticky and hard. I find that when I lime it it makes real good soil in small patches. I am going to try large patches. I have got from 20 to 25 bushels of wheat to the acre.

4091. Any rust? I had rust about five years ago, but not badly. I sow in April or early in May, and I have cut for hay at the beginning of September or the latter end of September and October.

4092. Then along the higher portion of the black-soil country you think the land would be suitable for agricultural production? I think it would. I sent down a sample to the Agricultural Department, and got it analysed. It is very rich—good at every point, although it is of stiff mechanical texture. They said the lime would correct that—it would do without manure for many years.

4093. If there are other parts of the Colony quite as suitable for wheat cultivation as the plains, and very much nearer to large centres of population, while you, apparently, have to add some ingredients to the land, how do you think you are going to make it pay? It is a question of what the future will be. I have no doubt that plenty of them have much better soil to work. This is hard to work unless limed. The wheat market will probably rather extend than otherwise. America, by-and-bye, may not be able to raise enough wheat for herself.

4094. It is only the higher portions of the land which you think would be suitable for agricultural production, and the future of this country you think will depend on a combination of pastoral pursuits with agricultural pursuits? Yes. I think they would do best that way, growing partly for stock and partly for market.

4095. Is there any other point you desire to mention? No.

Mr. Patrick Joseph Ryan, drover, Wee Waa, sworn, and examined:—

4096. *Chairman.*] What is your occupation? I am a drover living in Wee Waa. I have lived in the town ten or eleven years.

4097. Have you any interest here in the way of a selection or anything? I have an interest in a selection on Boolcarrol station.

4098. *Mr. Suttor.*] Where do you drive sheep from? For the last fifteen months from Boolcarrol station for the owners.

Mr.
J. Gray.
29 Nov., 1893.

Mr.
P. J. Ryan.
29 Nov., 1893.

4099.

- Mr. P. J. Ryan.
29 Nov., 1893.
4099. Where did you truck the sheep? At Narrabri.
4100. How many sheep did they send the last twelve months from Boolcarrol? From 50,000 to 53,000.
4101. How many years did that number extend over? I drove that number of sheep in the last fifteen months.
4102. Have you never driven sheep beyond Narrabri? For other stations, but not for Boolcarrol. I have driven for Merah station. I have driven stores for Mr. Fletcher, a gentleman in Queensland, and several other persons about this district. I have driven chiefly to Narrabri, sometimes to Sydney by road.
4103. From what part of Queensland do you take stores? From various points—sometimes off the Namoi to Queensland, beyond Ipswich, close to the border, and all round the Darling Downs.
4104. Where do you take them to? I have taken them to a station called Ballendeen, within 15 miles of Stanthorpe. I was driving for seven years for that gentleman, chiefly stores.
4105. Do you ever drive from any place to the west—about Collarendabri or Mungindi? From Mungindi I have driven for Mr. James Fletcher. I drove 8,000 store sheep he bought from Mr. Lomax.
4106. Have you ever driven for Mr. Lomax? No.
4107. Did you take them through Narrabri? No. Of late I take them to Queensland by the Gil Gil, across by Welbon, and Tulloona, and Goondiwindi.
4108. When you drive stock to Narrabri by which road do you bring them from these other places? It all depends. From anywhere below Mungindi, of course, they would chiefly come in this way.
4109. Which way do you travel from Mungindi to Narrabri? You would come in by Millie and take the travelling-stock route to Narrabri.
4110. Have you driven for any stations round this neighbourhood? I have driven for Messrs. Fenwick Brothers, Mr. Sinclair, and Mr. Mackenzie, the lessee of Wee Waa station.
4111. Where do they truck, at Narrabri? Sometimes I have driven them by road to Rylestone, and sometimes right into Homebush.
4112. Supposing the "red" line were constructed to Moree, where would you take your stock to from Mungindi? I think it would be almost as near to bring them to Narrabri as to take them on to the "red" line.
4113. Why? I know the travelling-stock routes pretty well, but I do not know of a travelling-stock route going west of Millie to get up to that "red" line.
4114. Supposing one is made from Millie to the line? I think it would almost suit the owner of stock to send them to Narrabri unless he was in a hurry.
4115. What route do you take from Collarendabri to Narrabri? You can come by either Wee Waa or Boolcarrol.
4116. Each road would bring you to Narrabri? Yes.
4117. It would be of no advantage to you to have the "red" line at all? No. It would be dry country to go across to that line. West of Millie I do not think it would benefit any of the holders.
4118. Are there many other drovers living in Wee Waa? There are more living in the town. I do not know whether they are at home.
4119. Are they pretty fully employed? Pretty well.
4120. How many are there in Wee Waa? I think there are five or six who get their living at driving chiefly.
4121. *Chairman.* Did you drive all the sheep from Boolcarrol within the last twelve months? No; other drovers were employed, but I took the biggest portion of them. I drove about 52,000.
4122. How many did the others take? Three other drovers were employed, but they only took an odd lot.

Mr. Richard Brier Mills, manager of Nowley Station, near Wee Waa, sworn, and examined:—

- Mr. R. B. Mills.
29 Nov., 1893.
4123. *Chairman.*] What is your occupation? I am manager of Nowley Station, 36 miles north-west of Wee Waa.
4124. *Mr. Davies.*] How long have you been in the district? About twenty-four years from Gunnedah down—eleven years on Nowley Station.
4125. What number of sheep do you run? About 35,000.
4126. How many did you shear last year? About 34,000.
4127. How many did you send to market last year? We did not send any straight in to market, we sell to the companies, we sold about 14,000.
4128. You had nothing to do with trucking the sheep? A lot of them were trucked.
4129. What wool did you send? We sent 525 bales by Boolcarrol to Narrabri West.
4130. You are pretty familiar with the country, I suppose? With a good part of it.
4131. Are you familiar with the country through which the "red" line has been surveyed? As far as opposite Millie. I have been over to Moree, but I could not give evidence about the country between Millie and Moree.
4132. Do you know the country between Wee Waa and Millie, and between Narrabri West and Millie? Pretty well.
4133. What is the general character of the country through which the "red" line passes? It is of different sorts—some good country and some scrubby.
4134. Much scrub land? You go through a good deal on Killarney and the lower end of Edgeroi.
4135. Is there much settlement along that portion of the line? I have not been along there for the last five or six years. I do not know what has taken place since I left Edgeroi.
4136. Looking at the question from a national point of view, do you think the "red" line would serve the country best? I think not.
4137. Which line do you think would? If you were considering Moree only, the "red" line would be the best I should say, to serve the country all round about Moree.
4138. I mean to serve the stations and selections out west? That would not serve them at all.
4139. In what direction would the line have to be taken to serve the country in a north-westerly direction? Of course the more westerly course it takes the better.
4140. You have not a sufficient engineering knowledge to say how far we can go in that direction? No.
4141. You could not say whether it would not increase the cost of construction very much? I would not attempt to discuss that question.
4142. You have never made a study of railway construction? No.

4143. You would not hazard an opinion as to whether the railway authorities could go very far to the north-west and secure a cheap line? No.
4144. Do you regard £2,400 per mile as a reasonable sum for a cheap railway? I cannot say.
4145. You do not know anything about road-making? No.
4146. Do you know whether the country along the line contains any timber or ballast for road making? I do not think you would get any timber for sleepers along that route. I think you would have to go to this side of the river.
4147. You would not get anything towards Narrabri West? Yes; on this side of the river.
4148. Would you get any ballast along the route? Of course, in towards the mountains you would, but once you got down towards the river I do not think you would get much.
4149. Have you ever travelled along the travelling-stock route as far as Millie? I have travelled along the main road to Moree.
4150. Supposing that route were adopted for a railway, would it serve your district any better than the "red" route? I should think so. It would bring a lot of the traffic which comes on to the river now. It might go to Millie and thence to Narrabri.
4151. But the line might be extended from Millie to Moree? Yes.
4152. Coming from Millie the whole of the stock and produce would filter through this travelling-stock route away from Narrabri? Yes.
4153. The travelling stock route would not be sufficiently north-west for your district? It would be so much nearer to us for anybody who cared to go.
4154. How far would Edgeroi be from Wee Waa? I cannot say.
4155. Supposing the railway is constructed along the travelling-stock route and taps the "red" line up towards Moree, would it serve this portion of the country better than the direct route? It would not serve just about here, but further west it would.
4156. It would be no advantage here? Not very much advantage—very little more advantage than the "red" line. Of course they would have to go to Narrabri West either way.
4157. Do you know the Gurleigh Point survey? No; I do not know much of the river bends at all.
4158. Having seen the Gurleigh Point survey marked on this map, would it serve your district better than the other surveys? It would be so much nearer to me and others behind me.
4159. Are you aware that it would be very much longer than the "red" route? Certainly.
4160. Would Parliament be warranted in incurring the additional expenditure? I think so. A great deal of wool comes in by Boolcarrol now, and it could be loaded so much nearer.
4161. You think it would come in that direction? Yes; in preference to going to Millie even.
4162. Does not all that wool come to Narrabri West? Yes.
4163. It would take a few miles off if it came in at that particular point? Twenty miles, I think.
4164. As a rule, do station holders and managers strike the line at the nearest point? I think they would in a case of that sort.
4165. Do they, as a rule, do that where they can save 20 miles? If it does not entail too much carriage on the railway.
4166. It is always an advantage to get to the nearest railway station with stock and wool? Yes.
4167. What distance from a railway is a fair service for a holding? I could not say.
4168. Twenty or 25 miles on each side? I should think so.
4169. I suppose you would regard a railway within 25 miles of your station as a good service, and would send your wool straight to the line? Yes. I have never been that close to a railway.
4170. Would you regard it as a good service? It would be of use to me.
4171. For the people who are settled on the land, and producing wool and sheep, would 25 miles be regarded as a reasonable service? I think so.
4172. That service would be equal to a radius of 50 miles from the line? Yes.
4173. Would you regard that as a reasonable service for your station? I do not exactly see the point.
4174. Would you regard that as a reasonable service for your station? It would suit me.
4175. Would it, in your opinion, serve anyone in a similar position? I think so.
4176. So that no one would have any cause to complain who is within 25 miles of a railway station? I do not think so.
4177. You do not know much of the Moree district? No.
4178. You know very little of the country beyond Millie? I have been across it.
4179. You are more familiar with the country on this side? Yes.
4180. Is there anything else you would like to say? No; except that I leave others who know more of the country to say what is to be said.

Mr. Stephen Dempsey, selector, Millie, sworn, and examined:—

4181. *Chairman.*] What is your occupation? I am a selector on Millie run, about 36 miles west.
4182. *Mr. O'Sullivan.*] How long have you held your selection? Eleven years.
4183. Are there any settlers like yourself settled there? Very nearly all the selectors on Millie have settled about the same time as myself; a few have come on since 1882. I was the first selector in 1882; five or six others settled there after I did, and they have been there ever since.
4184. How long is it since the last man selected? Three years.
4185. Were any of the selectors formerly employed on the station? No.
4186. They are all, apparently, selecting for themselves? Yes.
4187. Is that the case generally in this district? I think the majority of the selectors are *bona fide*.
4188. That is to say, the majority of those that are left? No; the majority of those who are on the selections.
4189. I suppose a good many have become absorbed in the estate? A good many left years ago.
4190. All those who have survived for the last five, seven, or ten years are *bona fide*? I believe so.
4191. You mean to say that the majority of those who are now on the land are *bona fide* selectors? Yes.
4192. What makes you say the "majority"? All I know. There may be some who are not *bona fide*. There are some I am not acquainted with; I could not say whether they are *bona fide* or not.

Mr.
S. Dempsey.
29 Nov., 1893;

- Mr. S. Dempsey.
29 Nov., 1893.
4193. As far as you know the selectors are *bonâ fide*? Yes.
4194. How many acres have you? Between my brother and myself we have about 8,000 acres. We have selected twice.
4195. Are the selections generally out this way as large as yours? I think most of them are; a good many of them have taken up as much land, and some a good lot more.
4196. They have nearly always got the maximum area? All who could did.
4197. What do the smaller men do? Some I know are carrying and some are droving.
4198. You carry on grazing alone, I presume? Yes; I have another place on this side of the river. I rent a run of 15,000 acres.
4199. What is the difference between you and a squatter? I cannot tell you; I have hardly got the same position as a squatter.
4200. Where do you truck your sheep? At Narrabri. All our stock goes through Wee Waa to Narrabri West.
4201. Do the selectors generally truck there? All the selectors down our way do.
4202. Do they send their wool there also? Yes.
4203. Where, in your opinion, should this railway go—to serve the majority of the people up this way and to conserve the best interests of the State? I should think it ought to go as far west as possible to serve the people up this way.
4204. To what point? As far west as possible.
4205. You would like to see it go to Wee Waa if possible? Yes. I think it would be a great benefit to all the country and all the people down this way.
4206. Supposing that from the “red” line a branch were run out, say from Boggy Creek about 30 miles west towards Collarendabri—would that serve you and men like you in this district? No.
4207. You would still prefer to go into Narrabri? I think so.
4208. A branch off the “red” line to Moree would not serve you as well as Narrabri? No.
4209. Would it serve the Collarendabri people or the settlers out west from Millie? Of course it would serve the Collarendabri people better.
4210. Would it serve them better than a line to Wee Waa? It would.
4211. Have you any knowledge of the stock routes in the district? I have a little knowledge of some of them.
4212. At what point do they converge up here? I think there are three stock routes converging at Wee Waa.
4213. Some miles above Wee Waa? Hereabout. Two come in about the bridge within a mile of Wee Waa.
4214. Where do the stock come from that use these routes? From all out west. I think that they come principally from down Walgett way.
4215. From Walgett also? Yes; and wool too.
4216. Does not that point to the fact that this is the natural stock route? Yes.
4217. That being so, a station at Wee Waa or about here would tap all that traffic? Yes.
4218. Would it tap the bulk of that traffic as well as a station say 10 or 15 miles beyond Millie? I think a station at Wee Waa would catch the traffic best; it would catch all the down the river traffic.
4219. Do you know anything of the leasehold areas up your way? I know some of them.
4220. Is the land of such a character that it is likely to be rapidly settled when the runs are thrown open? Yes.
4221. Have you heard of anyone making inquiries for land up that way? A good number are only waiting for the land to be thrown open.
4222. They are waiting here now for the leaseholds to be thrown open? Yes.
4223. There seems to be ample room for settlement if the land is good? There is plenty of room, and it is all good land on the north side of the river.
4224. Do the Namoi floods affect you very much? No.
4225. Do you ever lose any stock up that way? No.
4226. Were not a large number of stock lost in the 1890 flood? Not down our way.
4227. Higher up, towards the Barwon? Some out on the Moomie and the Barwon, and lower down, towards Walgett.
4228. You are never short of water up your way? No.
4229. You have a pretty fair rainfall? Yes.
4230. Is there anything that we have not elicited? No; except as to sleeper-cutting.
4231. Do you concur generally with what has been stated by the other witnesses? Yes, with reference to the timber and other points.

Mr. Sydney Powell, selector, sworn, and examined:—

- Mr. S. Powell.
29 Nov., 1893.
4232. *Chairman.*] You are a selector? Yes; my selection is situated about 30 miles to the west.
4233. *Mr. McCourt.*] What is the size of your holding? It is a family concern, in which three of my sons and myself are interested. I have one son deceased. With the conditional leases and conditional purchases we have about 9,500 acres.
4234. What quantity of stock and wool do you send away in a year? I generally send away about one lot of fat sheep—from 1,400 up to 1,800—and for the last few years I have sent from 100 to 150 bales of wool direct to Narrabri.
4235. Which route do you favour, the Gurleigh Point, or the “red” route? I am not in favour of the “red” route, as it would be entirely useless to me and to this neighbourhood. I favour a line which would come as near as possible to Wee Waa, and then proceed to Millie and Moree.
4236. Do you think Moree is entitled to a railway? Yes.
4237. Is it fair to make them travel 11 miles more than is necessary? I do not think it is fair altogether, but that line, as it is surveyed, would be entirely useless to us, and we should always have to go to Narrabri West.
4238. Do you know the country about Moree? It is some years since I was there, but I suppose it has not altered materially since I saw it. It is very good.
4239. Do you know the country between Moree and Inverell? I was never any further than Gravesend on the Big River, but it appeared to me to be all good country in that direction.
- 4240.

4240. Have you anything further to say? To favour Moree and Narrabri with a railway, and leave Wee Waa without a railway until goodness knows when, would not be fair, because there is a far larger settlement in this district, and the settlement is likely to be increased by a line to the west. I suppose 70 per cent. more than what would occur outside Moree and to the east of the "red" line.
4241. But all round your neighbourhood the people would go to Narrabri in any case? Yes; I think it is most preposterous to take the line back across the river above Narrabri. I would strongly object to a line being sent back from its natural terminus at Narrabri West, and taken across the river and creeks by costly bridges. Leaving this district out of the question, I think it would be most unfair to take the line by the "red" route.
4242. Would you not be better served by a line from Narrabri West to Walgett? Decidedly.
4243. Do you think Moree might be connected by way of Inverell with the railway system, and a line constructed from Narrabri West to Walgett;—would not that arrangement suit the country best? I am certain of it, and also think the Moree district is deserving of a railway.
4244. Do you think it can be connected by way of Inverell, and a line can be taken from Narrabri West to Walgett? I am not acquainted with the geographical features of the country. I was never at Inverell, but I think that there is some proposal to construct a railway from Glen Innes to Inverell.
4245. Would it suit the country best to continue the line from Inverell to Moree, and give you a line from Narrabri West to Walgett? I think the extra distance would not suit the Moree people.
4246. Would it be any extra distance? I think it would.
4247. Do you know the country north of Moree? Down in the direction of Weibon and out to Kunopia, then across in what they call the "Watercourse" the spread out of the Big River, and from there on to the Namoi, I am well acquainted with.
4248. Would not the traffic of that district come into Moree? Not according to the "red" line.
4249. Why? From Kunopia down to Mogil Mogil. I have no doubt that it would come to Moree.
4250. *Chairman.*] As far as Mogil Mogil? I think so. I think from there all the traffic and trade would come here by vehicles, direct to Narrabri West. I could not say for certain whether it would extend as far as Mogil Mogil.
4251. Which would be the best for future settlement—the country between Mogil Mogil and Kunopia, or the country to the south? The country to the south is by far the best.
4252. Do you know the country between Kunopia and Goondiwindi? I was never out in that direction.
4253. Is the country between Mogil Mogil and Kunopia subject to floods? Occasionally when extra rain falls, as is any other part of the country.
4254. Is it worse than the country down to the south? I do not think it is. In 1890, the water fell so heavily in a certain locality that it caused the water to run down the Moomie and overflow—a thing which was never known to occur before.
4255. Do you know the country to the east of the "red" line? In the direction of Killarney, and just across into Edgeroi, but no further. I have not been along the mountains. The road, I took was from Narrabri to Millie, and from Millie to Moree—the coach road.
4256. You object to the railway crossing the river at Narrabri? Strongly.
4257. Why? Simply because it is very costly, and it is going back again.
4258. More costly than to cross at Gurleigh Point? But there would be only one bridge to construct.
4259. Is there not flooded country on this side of Gurleigh Point? It is very slightly flooded. In the heaviest of floods, I do not believe there is a foot of water on the country.
4260. If the Railway Construction Branch state that the crossing at Narrabri is cheaper and better than the crossing at Gurleigh Point, do you think they are correct, after having examined the country? They ought to be able to form a very correct opinion.
4261. You think they would be more likely to be correct than yourself? I should think so. They ought to have a good knowledge of the matter.
4262. Did you live on the eastern side of the "red" line? I have lived at a place called Billyeena on Maul's Creek, about 30 miles from Narrabri.
4263. What is the nature of the country about where you lived? It was open forest—there was very little pine.
4264. Good for agriculture or grazing? It was suitable for both grazing and agriculture.
4265. Do you know the distance from the "red" line to the mountains? No.

Mr. Albert Coppleson, storekeeper, Wee Waa, sworn, and examined:—

4266. *Chairman.*] You are a storekeeper residing at Wee Waa? Yes; about three and a half years.
4267. Has the Wee Waa district made much progress in that time? A great deal of progress.
4268. Did you reside in any other part of the district? I have been travelling all about the district for the last seven or eight years.
4269. Do you get your goods from Narrabri West? Yes; mostly by the cleared line.
4270. Principally by the river road? Sometimes it comes up the river road, and sometimes it comes by the cleared line; that is, the stock route.
4271. Do you know anything of the country through which the "red" line passes? Mostly all the country. I know from Killarney to Edgeroi, and about Gurley right up to Moree.
4272. Have you been north of Moree? Yes; to Goondiwindi, Kunopia, and Mungindi.
4273. Have you been to Collarendabri? Yes.
4274. You are familiar with all the country which is embraced within the betterment area of this map? Not to the east.
4275. You are not familiar with the country to the east of the "red" line? No. I have been to Bingara, but I went through Moree and Warialda.
4276. With the view of serving that large area of country which is depicted on the map, do you think the "red" route is the best which could be suggested? I do not think a line along the mountains would serve the country, except the stations I mentioned. There are no other settlers that it would serve.
4277. There are very few settlers on the east of the line between Narrabri and Moree? Exactly.
4278. Most of the settlement is to the west? To the west and north-west.

- Mr. A. Coppleson.
29 Nov., 1893.
4279. Do I understand you to advocate that the line should be brought to the westward? More this way.
4280. Do you prefer the Gurleigh Point route? It would serve more people down here, although it would not be in favour of Wee Waa. The town would suffer, but it would certainly serve a lot more people than would the direct line.
4281. But if it is brought *via* Gurleigh Point, will that not mean creation of a rival township at Gurleigh Point? Yes.
4282. In that case. Wee Waa would disappear? It might, to a certain extent.
4283. That would be rather antagonistic to the people who have invested their money about Wee Waa township? It would to a certain extent. If the line came here it would serve, I believe, more settlers. The goods which go through Wee Waa would be sufficient to pay the interest on the cost of the extra few miles.
4284. Do you think it would serve a greater number of people to take the line still further west? I do.
4285. Where would you locate a line further west of Gurleigh Point? Any route which would go near Gurleigh Point would serve more people. There used to be a good many settlers on the other side, between Edgeroi, Terry-Hie-Hie, and Bowman's Creek. There were a good few farmers over there growing wheat and corn, but that was from eight to ten years ago.
4286. Has there been more settlement to the west than to the east? Yes. I do not think it would be any exaggeration to say that for every selector to the east there are 100 selectors to the west.
4287. Which is the most important place on the Queensland border—Mungindi, Goondiwindi, or Kunopia? I think Mungindi is about the most important—as important a place on the border as any.
4288. If you had the placing of the line, would you say that it should go from Narrabri to Mungindi, and as directly as possible, or that it should deviate to the west? I would say that the line would be more beneficial if it went from Narrabri to Collareendabri.
4289. How do you reconcile that with your statement that Mungindi is about the most important place on the border? Mungindi is the most important place now on account of the road. There are a main road and a travelling stock route and a bridge over the Barwon River at Mungindi; consequently, all traffic goes by Mungindi now from Queensland, whereas if they were to go by Mogil Mogil it would be a bit of a round, and they cannot always be sure of crossing the Barwon. If the line is constructed to Collareendabri it will get the Queensland traffic to Collareendabri, and, by Mogil Mogil, through Goondiwindi, and it would open very rich country in New South Wales.
4290. Is not that country more liable to flood than the country through which the line is surveyed? The country about Mungindi and Collareendabri, of course, is liable to more floods than the country about Moree.
4291. Is it not a fact that the Mungindi traffic now goes to Narrabri, *via* Moree? Most of it goes through, but not all. Most of it goes through Moree on account of their being harassed by the people through whose land they would have to go from Mungindi. I heard a lot of carriers say that they would prefer to come in by the other way, because it is so much shorter.
4292. But if this railway is constructed to Moree do you think the Mungindi traffic would then undoubtedly go to Moree? Yes.
4293. Do you think any traffic from the south of Mungindi would go to Moree, presuming that a line is made to Moree (say) from Mogil Mogil? Not so far south as that.
4294. You think Mungindi is the most southern point from which the traffic would go direct to Moree? Yes.
4295. All the trade south of that would still go down, *via* Collareendabri, to Wee Waa and Narrabri West? They might get some of the Collareendabri traffic.
4296. In view of your expression of opinion that Collareendabri is the place which should be aimed at, you consider that the country to the west of the line is far more important than all the country to the north of Moree? Yes; any line which goes more to the west would be more beneficial to the country and to the Railway Department. One day I counted over seventy teams of wool going down through Wee Waa to Narrabri.
4297. From the district in and about Collareendabri? I do not know where it came from.
4298. That was exceptionally large, I suppose? I did not always count them. I was attracted by a good many teams going through.
4299. Had they been stuck up at any particular creek and collected there? I could not say.
4300. That is possible? It is likely.
4301. Was it after wet weather? No; it was pretty fine weather.
4302. Do you think there is sufficient trade to make the "red" line pay? Perhaps the traffic beyond Moree would help to make it pay, but with the traffic between Narrabri and Moree I do not think it would pay.
4303. Have you been in Moree lately? About ten months ago.
4304. It is a live town? It is pretty good; it is going ahead.
4305. Do you know of any town in the district within a radius of 100 miles which is as much alive as Moree? I do not.
4306. Wee Waa for instance? Wee Waa would go ahead, too, if they had not made the terminus of the railway so close—at Narrabri.
4307. You are nearer the terminus than Moree? It is having the terminus so far away that has sent Moree up. It was not as big as Wee Waa six or seven years ago. It had not a two-storey building then.
4308. Does not all that tend to show that it is the centre of a very much larger amount of traffic than Wee Waa? I do not know. The district of Wee Waa is, I believe, better than the district of Moree, but then again some people do business with Narrabri, and some who do business direct with Sydney do not even stop at Narrabri. The Wee Waa district made Narrabri as much as it is. Goods sent direct from here to Sydney do not even stop at Narrabri.
4309. What trade goes direct from here without stopping at Narrabri? A lot of people get their goods direct from Sydney, Maitland, or Newcastle. At Moree they cannot do so well.
4310. They have to get them from Narrabri all the same? Yes; but mostly through the Moree business people.
4311. Supposing the "red" line is constructed, and it is afterwards thought desirable to go out in the direction of Collareendabri, from what point on this new line should that branch be taken, or should the railway be continued from Narrabri West? I do not know. If this line is constructed and they afterwards want a line to Collareendabri, I think it would be best to take the railway from Narrabri West.
4312. Would not that mean that you would have to cross the river, which had already been crossed at Narrabri? If they go anywhere from Narrabri West to Collareendabri, near the river, they would get the

the traffic on this side of the river; and whatever traffic there is, I suppose, would help the line along, while, if they constructed a branch line. I do not think they would get the traffic—it would be too far away, perhaps.

4313. You think the extra haulage from Narrabri West would more than compensate for the deviation and the crossing of the river at this particular point? Not from Wee Waa itself, but from the district right down to Walgett.

4314. Is there any other point you wish to mention? No

Mr.
A. Copleston.
29 Nov., 1893.

Mr William Bennett, selector, sworn, and examined:—

4315. *Chairman.*] You are a selector on Bugilbone Run? Yes.

4316. *Mr. Suttor.*] What is the size of your holding? Between myself and my three sons we hold 10,240 acres.

4317. What do you do? We run sheep.

4318. Have you any land under cultivation? I have not commenced to cultivate with the exception of a 2-acre garden that I have fenced in.

4319. How many sheep have you? Last season we shored over 9,000 sheep, but this year we did not shear so many—we sent some to market.

4320. How much wool did the 9,000 sheep give? About 100 bales.

4321. Did you send any fat sheep to the Sydney market? Yes, over 2,000 within the last nine months.

4322. Have you considered the railway routes from Narrabri? I see the routes marked on this map.

4323. Do you know anything of the country through which the "red" line goes? I know a little of the country to the east of Narrabri. I have been along what they call the "wet weather road" from Narrabri to Moree.

4324. What sort of a country is it to the east of the line? It is scrubby—very poor country.

4325. How far is the poor country from the mountains? I could not say

4326. Do you know the country to the west? I have been along part of the coach road from Narrabri to Moree; that is all I know of it.

4327. Do you know anything of the holdings in that part of the country? No; only by the Namoi.

4328. In what direction is your holding? North-west.

4329. Which line do you think would serve the people best travelling from Narrabri West? The more the line would go westward the greater the number it would serve.

4330. Which line do you refer to? The Gurleigh Point line, and if it goes further west all the better.

4331. To what place should it be continued from Gurleigh Point? Anywhere round about Wee Waa.

4332. Running north of Moree? Yes.

4333. You consider that Moree is entitled to a railway? Yes; Moree may be entitled to a railway, but as the Government seem inclined to run a line from Glen Innes to Inverell I think it would be better to serve Moree with an extension from Inverell than to deprive the people who are residing down to the north-west of the convenience of railway communication. A line to Collarendabri would suit much better, and to tap the Queensland border in that direction would pay much better, I think, than a line through Moree out to Goondiwindi. I believe the line which is running to the Queensland border hardly pays, and to run another line within a radius I suppose of 100 or 120 miles to the border would, I think, be only making bad worse.

4334. I suppose you know that a line from Sydney, *via* Inverell, to Moree would be much longer than a line from Sydney, *via* Narrabri, to Moree? I do not know the distance to Moree exactly.

4335. The line you favour much would be a line from Narrabri West to Gurleigh Point and on to Moree? That would suit a great number of people down this way. There is more settlement to the north-west than there is on the proposed line.

Mr.
W. Bennett.
29 Nov., 1893.

Mr. Arthur Leslie Harden, J.P., selector and grazier, sworn, and examined:—

4336. *Chairman.*] You are a selector and grazier on Boolcarrel Run? Yes.

4337. *Mr. Davies.*] How long have you been in the district? A little over five years. I have just completed my conditions of residence.

4338. What statement do you wish to make? I consider that every mile the railway runs to the west of the "red" route, though that route may be the more direct and more economical, it will be more beneficial to the country, and will serve a great many more *bona-fide* settlers and settlement generally. I maintain that no selector on a small area can exist for any length of time when he is over 50 miles from a railway.

4339. How far would the "red" line be from any point of your holding? The nearest point would be about 30 miles. I suppose it would be Woolabrar; but it would be only about the same distance as we are from Narrabri.

4340. There would be a small distance in favour of Woolabrar Station? No; a line *via* Gurleigh Point, or to the westward of that point, would be much more beneficial to the holders of black soil country where you cannot make roads.

4341. You are 35 miles from Narrabri by road and 34 from Millie or Woolabrar—about the same distance approximately,—you would not trouble to use the railway by the "red" route? No; it would not be of the slightest use to us.

4342. Would a line by the travelling stock route be nearer to you? It would be more beneficial for trucking sheep—it would be nearer.

4343. It would be nearer to you, and more beneficial to you and your neighbours? Decidedly.

4344. It would bring the railway within 15 miles? Yes; but a vast number of small *bona-fide* holders would be benefited.

4345. What distance from a railway station do you regard as a fair and reasonable service for settlers and selectors? About 20 or 25 miles. A selector cannot exist with any hope of doing much if he is over 50 miles from a railway. The larger the scale on which they carry on, the more they can afford to pay for carriage.

4346. Twenty miles would be a fair service? Of course the nearer they can get the better. Twenty miles would be a fair service.

4347. The "red" line would not be of any service to you or your neighbours, and you would prefer to go to Narrabri rather than to Woolabrar, because the distance would be about equal? Yes; as far as we are concerned.

Mr.
A. L. Harden,
J.P.
29 Nov., 1893.

- Mr. A. L. Harden, J.P.
29 Nov., 1893.
4348. Do you know the country through which the "red" line has been surveyed? I know the country at the Moree end. I have not been very much in the middle of that country.
4349. Is it fairly good country? For the first 25 miles from Narrabri the country on the east of the line is very inferior.
4350. What is it on the west for the first 25 miles from Narrabri? It is good country, but the really money-making country starts on the west.
4351. It is timbered country to the east? It is timbered, scrubby country, it runs into the ranges. I used to go frequently down through the gap from Bingara some years.
4352. You favour the Gurleigh Point route? Yes, or any route to the west, because it would benefit the people. It may be a little more expensive by that route, but I take it that the extra haulage would compensate the Government for the additional outlay.
4353. If the Railway Department and the Construction Branch have made all these inquiries? Ah! but have they.
4354. I say, if they have made all these inquiries, and they have based their calculations on the information which they procured in that way, and they represent that the railway will pay if it goes by the surveyed route, what about your opinion? It will probably pay, because Moree is a very good town, and the latter portion of the line passes through very good country. But if it pays, then I contend that deviation of 20 miles will also pay well.
4355. You would handicap the people at the other end with 20 miles additional haulage? Undoubtedly, the largest benefit for the greatest number.
4356. You would make them put up with that handicap? Justly too.
4357. Have you any other reason to offer? It has been asserted by the Department that the Gurleigh Point route is a flooded route, and that it would be hard and awkward, as well as more expensive, to construct a railway by that route. I contend that it is not a bit more flooded than the Breeza line was. All flat country is liable to flood. I knew the Breeza country before the line ran across, and the Department got over that difficulty safely enough. I maintain that this difficulty in the case of Gurleigh Point can be got over just as easily. There is no current in these floods.
4358. Do you think it could be constructed at a cost of £2,400 a mile, notwithstanding that it is very wet country? Yes; notwithstanding that it is flooded once in every seven years.
4359. If the Gurleigh Point route were adopted would it not mean the establishment of a new township? We know that wherever a railway station is placed to a certain extent a township is formed.
4360. Would it not wipe out Wee Waa? Every township has to take its chance.
4361. It would suit you to take the line by Gurleigh Point? Anywhere west of the line would suit me. Every mile that they traverse the black soil with a railway they benefit the selector and grazier.

Mr. William Thomas Mitchell, selector, sworn, and examined:—

- Mr. W. T. Mitchell.
29 Nov., 1893.
4362. *Chairman.*] What is your occupation? I am a selector on Gunnedra Creek, on the Pian Creek Road.
4363. *Mr. O'Sullivan.*] What is the size of your holding? It consists of about 2,000 acres. It is situated 7 miles from Wee Waa.
4364. Are there many selectors round your neighbourhood? Yes—so many that you could not get a 40-acre piece.
4365. Does the settlement appear to be of a *bona fide* and permanent character? Yes, undoubtedly.
4366. Is Pian Creek remarkable for the number of settlers it carries? Yes; it is all taken up.
4367. Does the settlement trend away to Collarendabri, and north-west of these points? Yes; the land is all taken up where it is available.
4368. By what road do the settlers out in that direction drive their stock and receive their stores? From Pian Creek to Wee Waa, and by the cleared line to Narrabri West.
4369. That is your natural road to Narrabri? Yes.
4370. How would the "red" line affect the people out your way? It would not serve them in any way. It would not be used by them—too far east.
4371. Would they be likely to use a branch line run out from Boggy Creek, say, 30 miles in that direction? There are a few people on the plains and about Boggy Creek who might use it.
4372. How far would you be from a terminus at a point 30 miles from Boggy Creek to the west? About 25 miles.
4373. Would a branch to that point serve you better than (say) a branch to Wee Waa? No; it would be very inconvenient. There is no travelling stock route out that way.
4374. Supposing a branch line went from Narrabri West to Wee Waa, would it tap all the country you refer to? Certainly.
4375. Would it serve the Collarendabri Road better than a branch from the "red" line? Certainly. I know the Collarendabri Road, and also the road under the mountains to Moree.
4376. Have you heard of any men transferring their selections to the large land-owners? Not for some years.
4377. I suppose all those who did select in the interest of the stations have transferred their holdings, and that the land has become absorbed in the stations? Yes. Many a person—myself for one—had he not persevered, would have had to sell out to the lessee of the run. They used to surround the selections in my time. I selected in 1877. I have been thirty years in the district.
4378. They surrounded you with other selections? Partly, to force me to sell out.
4379. Partly to make it very hard for you to work your holding? Yes.
4380. But that sort of procedure is practically stopped? The Land Board has done away with a great deal of that sort of thing.
4381. Do you know if there is any good land to be selected, if the leaseholds are thrown open? A good deal on the leasehold areas on Merah and Weetawa. I have selected on Weetawa run—it has a frontage of 10 miles to the Namoi. Merah has 7 miles frontage to the Namoi.
4382. With regard to the other runs, do you think they will be selected when they are thrown open? Yes.
4383. Do you know anyone who is prepared to take up land? Yes; I have three or four sons, and I am waiting for the land to be thrown open for them to select.
- 4384.

4384. I presume that there are other young men in the district who are waiting to select? Yes; many of my neighbours are waiting to select.

4385. Would not that argument also apply to the leasehold areas on the direct route, and will not population spring up along the direct route when the runs are thrown open? That is very likely, but most of that land has been secured.

Mr. W. T.
Mitchell.

29 Nov., 1893.

4386. All that land between Narrabri and Moree which is marked white on this map is still Crown land—leasehold—and all the green represents reserves, many of which, of course, will have to be thrown open. Does not the map seem to imply that there is room there for settlement? No; the "red" line runs too near the mountains. It does not run through the centre of the population.

4387. It runs at a distance of 13 or 14 miles from the mountains, therefore, it runs through lands which are likely to be settled upon when the leasehold areas are thrown open? There is very little land, from what I can learn, on the east of the "red" line. There is far more land on the west side.

4388. You think there will be a greater rush of settlement on the leasehold areas towards Collarendabri and Mogil Mogil than between Narrabri and Moree? Wherever the land is thrown open it will be selected.

4389. Are not many of these runs flooded by the waters of the Namoi? Nearly all of this low country is flooded, but we are very glad to see a flood.

4390. Occasionally? Yes; every six months we would like it.

4391. A flood refreshes the land, and appears to be no impediment to grazing pursuits? Not a bit. As long as you have some high land to put your stock on.

4392. *Chairman.*] Can you state your experience of high-water mark in the 1864 flood? It was from 1 foot to 2 feet deep about Wee Waa, and from 4 to 5 feet at Narrabri.

4393. In Wee Waa township? Yes.

4394. Has there been any higher flood than the 1864 flood? No. The oldest aboriginal informed me that this was the highest flood ever known to the aboriginals. I observed the blacks making stages in the trees. They were very much frightened at the time.

4395. They found that their stages were not above flood-mark? The stages they made were much above flood-mark. They had not seen a high flood till 1864.

4396. Does not that go to show that they expected the flood to come up higher? But it did not come as high as they expected. That was the only flood in thirty years of my residence that was so high.

4397. It was the highest flood known? Yes. It was 4 or 5 feet high in Narrabri.

4398. Did it do very much damage? Not a great deal.

4399. How far was the 1890 flood off that flood? I suppose about a foot; some places 2 feet.

4400. Did it do much damage? It did cause a bit of damage.

4401. You do not look upon a flood as an unmitigated nuisance or danger, but rather as a benefit on the whole? Yes. I am very glad to see a flood now and again.

4402. Do you know the site which was pointed out to the Committee as a good site for the railway to cross the river? I do. I have resided there many years.

4403. Was that under water in the 1864 flood? It was approachable on both sides. We had a canoe stationed there to cross the river.

4404. After crossing the river on either side, within a few hundred yards, you came into flooded country? Quebri station, on the other side, was flooded with water about 2 inches high.

4405. When you got away from the river bank, on the northern side, some few hundred yards, did you not come into flooded country? There was a little water over that way in the 1864 flood—not just at the river bank, but away from the current of the Namoi.

4406. If the Committee saw flood-marks, 3 or 4 feet high, on the trees along the Walgett Road, would you call that a little water? There was no flood 3 or 4 feet high at the crossing I have been asked about. It is 6 or 7 inches above flood mark.

4407. Not at the crossing, but a few hundred yards to the north, on the other side, where the Walgett Road runs along? There is a swamp there, and the road runs through it, but along the river bank it is high land.

4408. Higher than 300 or 400 yards north of the crossing—what you now call a swamp, through which the Walgett Road runs—was flooded at that time? Yes. The surface fall of the land is 1 foot in a mile.

Mr. Allan Mackenzie, manager, Wee Waa station, sworn, and examined:—

4409. *Chairman.*] You are manager of Wee Waa station? Yes.

4410. *Mr. McCourt.*] What statement do you desire to make? I desire to say that there is no timber on the "red" line fit for railway sleepers.

Mr. A.
Mackenzie.

29 Nov., 1893.

4411. Did you live on that line? Yes; for about twelve years on Edgeroi station.

4412. How long have you lived on the west? Fifteen years.

4413. Have you ever been over there since you left? I have just been across there.

4414. It is all scrub country? Yes.

4415. Not suitable for settlement? No.

4416. Is the land up Gurleigh Point more suitable for settlement? I think so.

4417. Is there more Crown land along the Gurleigh Point route? Better land.

4418. Some of it? Yes.

4419. Do you know the country to the south at all? Yes.

4420. What is the nature of that country? All scrubby country, but good timbered country—good ironbark for railway purposes.

4421. Is it very scrubby country? Yes, in parts; some of it is open.

4422. Is it good country, usually, where ironbark grows? Yes; if the country is rung.

4423. Is there anything else you wish to add? No.

Mr.

Mr. Edward William Jeffery, selector, near Wee Waa, sworn, and examined:—

- Mr. E. W. Jeffery.
29 Nov., 1893.
- 4424-5. *Chairman.*] You are a selector, near Wee Waa? No; I am leasing country near Wee Waa, with right of purchase.
4426. You came from Victoria? From Gippsland.
4427. *Mr. Ewing.*] Do you desire to make a statement in regard to the probable increase in the population when the leaseholds are thrown open? Yes.
4428. You have a statement which you wish to read? It contains a lot of evidence which has already been given.
4429. What point would you like to touch on? With regard to the statement of Mr. Gould that only 10 per cent. of the total traffic to Narrabri West station comes from Wee Waa. I have trucked three lots of sheep since 30th June;—before that time a man always drove them up for me,—and on that date ninety-two trucks were despatched from Narrabri. The *Stock and Station Journal*, in this paragraph which is marked with red ink, shows that of those 92 trucks 62 trucks came past Gurlieigh Point, or the proposed line to Wee Waa. On the 18th July I was up at Narrabri West with another lot. On that occasion 105 trucks were despatched—the greatest number of trucks which had been despatched on a single day from that station. I have a record of the consignments on that occasion:—Bingle Gully, 22; Mr. Rafferty, 13; Boolcarrol, 10; myself, 10; Mr. Radcliffe, 6; and Mr. Sinclair, 6; or 67 out of 105 had to pass Gurlieigh Point to go to Narrabri; this is 65 per cent.; not 10 per cent. With reference to the 1,100,000 acres of so-called inferior land, extending from Narrabri to Pilliga, I was out at Mr. Hawthorne's place, which is 3 miles from here in the scrub, I saw maize growing higher than I could reach—a crop which would gladden the hearts of farmers on Tambo and Mitchell flats, in Gippsland, who pay a rent of £3 an acre. Most of this country is similar to the Goulburn Valley and Wimmera districts, in Victoria, which are supposed to be the best wheat-growing districts in Australia.
4430. It really is not inferior? Not for agriculture, but for grazing it is. If it were brought before the notice of the Victorian farmers, and the facts were advertised in the newspapers, men would come over here, and they would produce enough wheat on these acres to supply New South Wales.
4431. Do you know of any selectors who would come from the other colonies? I know of eighteen or twenty families in Omeo, a mining and grazing district, who are waiting for Crown lands in this district to be thrown open to come over and select.
4432. You believe that population will greatly increase? Certainly. I enter a most emphatic protest against the construction of any other line except a deviation to Wee Waa. The haulage from Wee Waa and the other side of the river would be almost, if not quite, equal to the whole of the traffic from Moree on the rest of the line. Last Friday, on the Boolcarrol Road, in about 1½ mile, I counted sixteen teams, loaded with over 500 bales of wool, going to Narrabri. The busiest portion of the season is over by a long way. Along that road, by which you came in at the back of my place, in the height of the wool season there is a continuous stream of teams, let alone the traffic which comes up here. The Wee Waa line does not suit me, as it would go through the property I lease—the Gurlieigh Point line would suit me better—but I believe, for the good of the country, it ought to go to Wee Waa. If the line is to be constructed to pay, it should go round Wee Waa. If the other line paid, it would be through the traffic to and from Moree, and just a little country between the line and the ranges. All the traffic from the west and north-west would not touch that line at all. A question was asked Mr. Maiden yesterday about the Collarendabri traffic. If the line we now propose were constructed *via* Wee Waa, it would be almost a direct line out towards Collarendabri. The first section of the Narrabri-Moree railway would be so many miles of the Walgett line already constructed; in fact, that first section of the Moree railway would serve the Moree line, the Walgett line, and the Collarendabri line. I believe that section of the Narrabri-Moree railway would be the best paying line in the Colony. All the traffic from the west and north-west passes Gurlieigh Point to go up to Narrabri now. As to the population down below, a bi-weekly mail goes up the country to the east, and two bi-weekly mails pass along the Boolcarrol road—one to Collarendabri, which proves that that is the direct road to Collarendabri.
4433. *Mr. Ewing.*] Supposing that you can make a direct line to Moree, and also to the Barwon at Collarendabri for the same money as you can make a line by Wee Waa, and then junction off that to Moree, with a branch going up the Boolcarrol Road to Collarendabri, what would you say? I should say the line as far as Boolcarrol, or across the river here, would serve both lines. It would answer the two purposes, let alone the Walgett railway. As for land being for sale about here, before I left Omeo three years ago two or three parties asked me to let them know if I saw any country about here which would suit them. But during the two years I have been here I have not heard of a single block being for sale in the district. The place I have would not have been for sale, for the land is good, but Mr. Hall, the owner, died, and Mrs. Hall, being unable to manage the property was obliged to dispose of it. It is not through any fault of the country that I am getting the property. I do not suppose that a block of land can be bought in the district, except at a high price.
4434. The people are doing well without a railway? Yes; I am paying a rent of £375 a year for 3,200 acres for grazing purposes only. This year I shall contribute about £380 to the railway revenue, and most of the persons in this district whose names you have got to-day will contribute a much larger sum than I shall.
4435. Have you anything more to say? No.

Mr. Andrew Hamilton, hotelkeeper, Wee Waa, sworn, and examined:—

- Mr. A. Hamilton.
29 Nov., 1893.
4432. *Chairman.*] You are an hotelkeeper in Wee Waa? I am, and also a selector in the district.
4437. *Mr. Dawson.*] How long have you been in the district? About twenty years.
4438. Do you know the various routes which have been projected for this railway? I have never been very far out. I know the two roads coming in this way.
4439. Do not you know anything about the "red" route? No; I have been over Inverell way, across the mountains. I have never been up to Moree; I have been as far as Tycannah, on the travelling-stock route.
4440. You do not know whether there is good country on each side of the "red" line—good timber or good agricultural land? No. I have been over the mountains, but I saw no timber there.
4441. Can you give us any idea of the western traffic? No.
4442. Then what would you like to say about the line? As far as the population is concerned, there are the most people living down there, and they have the most stock, and where there is most population, of course there is most money.
- 4443.

Mr.
A. Hamilton.
29 Nov., 1893

4443. Is there much traffic coming through Wee Waa? A great deal.
 4444. Would any of that traffic go to the proposed line? No.
 4445. You favour a line *via* Gurleigh Point, then? As far as it would come to the west.
 4446-7. The nearer the better? Into the town, if you can get it.
 4448. Would not a line by Gurleigh Point, being only 6 or 7 miles from Wee Waa, affect this town? It would not do it any good.
 4449. Why not? It is very likely that another township would spring up.
 4450. Would that be a great national loss, or would it interfere only with the people here? It would interfere with the township, but not with the people to the west.
 4451. Would it not benefit a great many to the west? It would.
 4452. You will admit that if the nation benefits to a large extent, the few in Wee Waa must suffer for the good of the many? Yes.
 4453. Do you think that this place would be served by a railway within a distance of 3 or 4 miles? It would not do a great deal of harm.
 4454. Would not the people come into Wee Waa, and drive over in the morning to catch the train? If they had not a great distance to go they might stop here, but if they were within a day's journey of Gurleigh Point, and there is accommodation there, they will go there.
 4455. Up Gurleigh Point way will there be any land available for selection when the leases are thrown open? Plenty.
 4456. It would be taken up? Every inch of it; it would be balloted for.
 4457. We may hope that it will settle a good class of people? I think so.
 4458. Have you any dummies in the district at all? I think they have melted like the froth on the river.
 4459. I suppose it would scarcely pay a man to keep dummies? There are too many *bona fide* settlers.
 4460. It gets too warm for them? It is pretty often found out; but, unfortunately, a dummy can get a piece by ballot.
 4461. Is there anything else you would like to add? I would like to say something about the Pilliga side:—The timber is very good; it consists of ironbark forest and pine. There are pieces of dense scrub; but as a whole it is all fertile country for agriculture, but not for grazing.
 4462. It would want to be cleared before it could be cultivated? Yes.
 4463. If it were cleared and ringbarked it would be good for pasture? It would.
 4464. What you mean to infer is that you would have to spend a certain sum and that by the time the land was made fit for grazing it would be too valuable, and that you would have to devote it to agriculture? My meaning is to settle the people on the land in farms.
 4465. If it took 10s. or 20s. to make the land fit for agriculture, and it is fit for grazing, it would be better to put the land under sheep? I do not think so; there is too much grass seed out there for sheep. With regard to floods, the highest flood I have seen was in 1879. It occurred when the Boolcarrol shearing was going on. I had to come into Wee Waa every week, but I went through it the whole time. There was only one place that was above the horse's knee, and that was on the other side of Little Dunna Dunna paddock; all the rest of the way to Boolcarrol is high ground.
 4466. That is where there is a little bit of a billabong—about a mile from the old house? Yes.
 4467. Was there a bridge over the river then? No; I had to swim the river. I left my clothes on the other side and I swam over. I had a suit on the other side to go home with.

Mr. Walter William Richard Holcombe, selector, sworn, and examined:—

4468. *Chairman.*] You are a selector on Pian Creek? I am nearer the river on Weetawa Run, 9 miles west of Wee Waa. Mr. W.W.R.
Holcombe.
29 Nov., 1893.
 4469. You have heard the evidence which has been given;—can you give any fresh information to the Committee? I have a garden and a little farm, and I have an idea of the capabilities of the country. I have some 5 or 6 acres of grape vines, which are doing well.
 4470. In the black soil? In sand. There is a sand ridge.
 4471. You get this black soil on Pian Creek? On Pian Creek there is a ridge of sand in a good many places, but it is good country all the same. There is a large amount of land on the Pian Creek which is suitable for grape vines, but at present we have no market, as it is so far to the train. We can grow wheat. I have grown wheat at my place, but the same applies to maize. I have let some of it seed to see how it would do, and it has done very well. We grow a lot of hay, but it cannot be sold, as we have no market. Then we come to grazing, on which we have to depend. The "red" line would be of no use to any one on the uncoloured land. There are a great number of people living to the north and south of the river. If you are driving your sheep to Narrabri, for the last few days they have to go through scrub country, which means that they have no grass. They are put on the market in very poor condition compared with what they would be if there were a railway station at Gurleigh Point or Wee Waa. If the railway were brought to Gurleigh Point the whole of the stock would go by rail.
 4472. You are on the north side of the river, and you go down through barren country when you go along the Walgett road? It is much further to go round by the other side on account of the bends in the river. It bends north, and the country is taken up a good deal and the lanes are narrow—in many places a chain wide. That means putting sheep through a lot of small holdings. In delivering our wool with our teams we have a bad country to travel. We have black soil to here, and for a long time we have to go by the cleared line on account of the wet. We have two or three days through sandy country. The draft stock are perishing at the same time.* The whole of the people in this part which is not coloured have to come by this way, and of course a great many on the other side, from anywhere south-west of Collarendabri, have to come up this way. If it comes to a question of the residents being permanent, I know of no one who is not. I should be bound to buy land for my sons, no Crown land being open.
 4473. In spite of all these difficulties of getting to market you have lived, increased and prospered, and are prepared to extend your holding? Yes; my family is increasing, and they want to take up land.
 4474. In your opinion the railway should be extended towards Wee Waa as far as Gurleigh Point at least, and if the line is to be constructed to Moree it should go in that direction? Yes.
 4475. Do you know anything of the country between Wee Waa and Moree? Yes; I have been across the country. It is all good to Moree. I know nothing of the country to the north of Moree.

4476.

* NOTE (on revision) :—Meaning—We have black soil to here (Wee Waa); then on account of floods two or three days through sandy country. The draft stock are perishing while on the sandy country.

- Mr. W. W. R. Holcombe.
29 Nov., 1893.
4476. If this line is referred to the Committee with view of serving the country to the north of Moree, rather than any country intervening between Narrabri, what then about this deviation? We are speaking of the traffic down here. For my part, I consider that we ought to have a railway straight from Narrabri down this way. If we cannot have that, let it deviate from here.
4477. You say the district in and to the west of Wee Waa is so great and important that it is entitled to railway communication with Narrabri? Yes.
4478. And that if the first extension is to be in the direction of Moree, it should deviate to Wee Waa or Gurleigh Point on the way to Moree? Yes.

Mr. Cornelius Kelaher, selector, sworn, and examined:—

- Mr. C. Kelaher.
29 Nov., 1893.
4479. *Chairman.*] You are a selector on Pian Creek, about 13 miles out? Yes. My selection consists of over 1,600 acres.
4480. *Mr. Suttor.*] What do you run? Sheep and cattle.
4481. Have you any land under cultivation? About 5 acres.
4482. How many sheep have you? At present about 4,000.
4483. Four thousand sheep on 1,600 acres? No; I have other land, which I rent.
4484. How much land do you rent? I could not say exactly. I daresay the sheep run over 3,000 acres altogether.
4485. How much wool do you take off? This year, 10 tons 6 cwt.
4486. Where do you send your wool? To Narrabri West.
4487. Do you truck many sheep from there? Not very many; this year, 800.
4488. How is your holding situated from here? The nearest point is 14 miles from Wee Waa. It is on Morah.
4489. Have you considered the question of these railway routes? Yes.
4490. Which route do you consider would serve the country round your neighbourhood best? Of the three lines, the Gurleigh Point against the world. Gurleigh Point is about 20 miles from my place. I live on one of the main travelling stock routes going up Pian Creek. I thought I might be able to give you a little idea of the travelling stock, and the loading which go up past my place.
4491. Will you kindly give the information? They have to "notice" me on each occasion. In one week I received notices of about 30,000 sheep and three lots of cattle—800, 1,000, and 1,200. Nearly every day I receive notices of travelling stock coming up to my place.
4492. What would be the average number passing your place in twelve months? I have no idea. There is a constant stream of stock coming up. I have been speaking to some drovers. It seems to have increased lately very much. I asked the reason why so much came this way, and they said, "There is no road talked of so much out back as Pian Creek Road."
4493. Where does that road come from? From Walgett, Collarendabri, and out in that direction.
4494. Just as much wool coming past your place? A constant stream of wool. In the busiest times the teams are in sight of each other. I have no idea of the quantity that passes by. I know that a great number of wool teams go by. One year I was droving wool for myself and brother-in-law, Mr. Knight. On one occasion I was in Narrabri West, and sufficient trucks could not be got to take the wool away. I was told there were between 200 and 300 teams in and about the yards waiting for trucks. I know a great number of the carriers very well, and I can assure the Committee that fully one-half of the carriers travel the Pian Creek Road right up to Namoi or the road which comes in by Gurleigh Point.
4495. *Chairman.*] How many carriers are there—100? I daresay there are.
4496. Do 75 per cent. or 50 per cent. of the carriers come by this road? Very nearly all on this line.
4497. Do you think you are safe in saying that 80 of the 100 carriers you know come down this road? Yes.
4498. *Mr. Suttor.*] Do you know anything about the travelling stock route? I have a little idea, but not much, of the country.
4499. You think the line which would serve you best would be the Gurleigh Point line? Yes; or any line going further west.
4500. How far do you think it ought to go further west than Gurleigh Point to suit the people on Pian Creek? Anywhere west of Gurleigh Point.
4501. Have you any idea how many sheep to the acre the land out there generally carries? It all depends on the season. In a good season you cannot overstock it. I do not know how many it would carry on an average. It might carry two sheep to the acre.
4502. That would be in a specially good season? A fairly good season.
4503. Have you any further statement to make? No.

Mr. James William Doherty, builder and contractor, Wee Waa, sworn, and examined:—

- Mr. J. W. Doherty.
29 Nov., 1893.
4504. *Chairman.*] You are a builder and contractor residing in Wee Waa? Yes.
4505. You are also secretary of the Local Railway League? Yes; conjointly with Mr. Maiden.
4506. *Mr. Davies.*] How long have you resided in the district of Wee Waa? Twenty-six years.
4507. Then you know the district well? Not to a great extent. I have not been far out. I know the country to the west and north.
4508. I presume that a good deal of information which has been given to the Committee has been prepared by you as secretary of the League? Yes; I asked these persons to attend and give evidence.
4509. Did you send to the different selectors for information as to the number of their stock, and the carrying capacity of their holdings? No; I asked them to come and give evidence. I did not try to get any information from them.
4510. Have you any fresh evidence to offer? No. From what I do know of the district, I think that a railway should go to Moree, and if it can be brought by a north-westerly route it would be much better for the district. The further west it could go the better it would suit the town and the settlers.
4511. You endorse the opinions of previous witnesses? Yes; I know there is splendid timber to the south of the place. A splendid timber trade could be opened up in ironbark and pine. There are two saw-mills—one 9 miles up and one in the town. The mills are continually going, and they send timber up to Collarendabri.
- 4512.

4512. Do you know anything about the ironbark forest towards Narrabri? Yes.
4513. Have you ever had timber out of that forest? No; but from the south I get splendid timber about 12 miles out.
4514. Do you know that there is an abundance of timber for sleepers or bridge work? Yes.
4515. You do not know anything of the country through which the "red" line goes? No.
4516. Your district can only be served by a railway coming from Narrabri in this direction as far westerly as possible? Yes. As regards the floods, I can speak of the flood-water on the other side of the river. I suppose the Committee have seen the traces of the flood over there. It is not long since there was a flood there; the rubbish is deposited on the fences, but the river banks were perfectly high above flood-water.
4517. Have you anything further to add which has not been stated by any previous witness? There are two or three good lots of gravel in the bed of the river in different parts which could be used for a line coming in this direction.
4518. Anything else to add? One day while I was minding a store, I thought I would take a note of the wool that was passing. It was on a Monday, which is usually a big day in the wool season, because on the Sunday the teams are drawing up all day close to the township, and they all go through on the Monday. I have counted over a 1,000 bales passing the town in one day.
4519. Where did it come from? Merkadool, Angledool, Eurie Eurie, Cryon, Burran, Drildool, Bugilbone, Come-by-chance, Keelendi, and several other stations whose names, I cannot remember. I have seen wool passing from a station called Cubbie in Queensland.
4520. Have you anything to say, as the secretary of the League, in favour of the construction of a north-westerly line other than what has already been said? I do not think so.
4521. You have summoned a great many witnesses, a number have given their evidence, and many others would be prepared to corroborate that evidence if necessary? Yes.

Mr. J. W.
Doherty.
29 Nov., 1893.

WEDNESDAY, 29 NOVEMBER, 1893.

[The Sectional Committee met at the Court-house, Narrabri, at 8:15 p.m.]

Present:—

JACOB GARRARD, Esq. (CHAIRMAN).

The Hon. WILLIAM HENRY SUTTON.
The Hon. JOHN DAVIES, C.M.G.
THOMAS THOMSON EWING, Esq.

WILLIAM McCOURT, Esq.
EDWARD WILLIAM O'SULLIVAN, Esq.
HENRY DAWSON, Esq.

The Sectional Committee further considered the proposed Railway from Narrabri to Moree.

Mr. Luke Malone, newspaper proprietor, Narrabri, sworn, and examined:—

- 4521 $\frac{1}{2}$. *Chairman.*] What is your occupation? I am a newspaper proprietor at Narrabri.
4522. *Mr. O'Sullivan.*] How long have you resided in Narrabri? Over twenty years. I know the district and the people thoroughly.
4523. You have had opportunities of knowing by which route trade comes into the town from the west and north? Yes.
4524. Which route, in your opinion, would best serve the interests, not only of the district, but of the community generally? The northern route.
4525. Why do you prefer the direct route? The land is better for settlement, is less liable to flood, and is fairly well timbered.
- 4525 $\frac{1}{2}$. Is there not a considerable trade from the west which could be tapped by the proposed line? There is a fair volume of trade by the more western roads.
4526. Which route, in your opinion, brings in the larger trade to Narrabri—does it come from the Moree district or from the Wee Waa and Collarendabri districts? There is no comparison between the two trades. The Moree trade is very much the larger of the two.
4527. Which of the two routes is settled the best? The travelling stock route at present, I should think.
4528. Is not Gurleigh Point route well settled by settlers and graziers? Fairly well settled.
4529. Much better settled than the direct route? It is.
4530. Where does your newspaper circulate the most—on the line of road between Narrabri and Moree, or on the Gurleigh Point route, taking it out as far as Wee Waa, and then going northerly to Moree? In the whole of that district it circulates, but I do not know that there is any material difference at present. The more easterly route, as I said, is not so well settled as the more westerly.
4531. Do not most of the drovers bring in cattle by Wee Waa? A great number come in by that way, and also by the travelling stock route.
4532. By which route, in your opinion, does the larger number come in? I think by the travelling stock route. A great many cross at Wee Waa when the feed and the travelling are good.
4533. It seems to be a question of weather and feed as to which road they choose? Yes.
4534. Have you ever heard of the flocks and teams being blocked when attempting to come down by way of Wee Waa? Frequently. I have known teams and drovers to be blocked there for weeks by flood-water.
4535. Did you ever hear of flocks of sheep and teams which would otherwise come down by way of Wee Waa taking the road *via* Millie to Narrabri? I could not say.
4536. During your long experience as a journalist you have noticed, I suppose, the gradual growth of the town and its surroundings? I have.
4537. Do you consider Narrabri a sound and substantial town? I think it is very much so.
4538. It has grown very rapidly during the last seven or eight years? It has grown in a wonderful manner since I came here? It was only a small village fifteen years ago.
4539. What effect would a railway from Narrabri West to Wee Waa have on the town of Narrabri? It would blot Narrabri out, or very nearly so.
4540. On the other hand, what would be the effect upon Narrabri West of extending the railway through Narrabri to Moree? They would still retain a portion of the trade which comes by the river.
4541. It would still be patronised by the western and Collarendabri traffic? Not the Collarendabri traffic, but the trade which comes up the river.

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4542. The trade which comes from the direction of Walgett? Yes.
4543. But does not most of the Collarendabri traffic come into Narrabri West now? Yes; except when the river is up, and then the steamers go up to Collarendabri and take it away.
4544. Narrabri West would be likely to retain a fair share of that traffic? I think so.
4545. Even though the railway were extended from Narrabri to Moree? I think so.
4546. Have you had any land agency in connection with your paper? No.
4547. I presume you can judge by the advertisements and other means as to whether there is a demand for land in this district? There is a very large demand. There are numbers of people here who are waiting to take up land.
4548. Do you know of anyone who is waiting to settle upon the direct route when the leaseholds are thrown open? I know that any number of inquiries are being made about the land, but I do not know exactly as to the place they are going to select on.
4549. Are the people here waiting to take up land? Yes.
4550. Is no portion of the resumed area left for settlement? They are waiting for the leases to be thrown open.
4551. Is there no good land on the resumed areas? No, not much. The areas are not large enough for pastoral purposes.
4552. Have you heard of many selections being transferred to large property owners? A great many.
4553. That is not a very good evidence of the *bona-fides* of the settlement in the district? No; I know that a great many selections that I saw marked on the map the other day are not good indications of the settlement on the more western route.
4554. And the portions marked blue on the map did not indicate the fact that that settlement has been of a permanent character?
4555. A great many of the selections thus marked have been absorbed into the large properties? A great many.
4556. I presume that many of these selections were really taken up in the interests of the stations? I daresay they were, but I know nothing of the matter, except that they have gone back to their original source, as it were.
4557. On which route is the larger number of abandoned selections—on the direct route or the Gurleigh Point route? I think that very few on the direct route have gone back to the original holders, except on Killarney, perhaps where selectors have been bought out.
4558. Most of the conditional purchases which have been absorbed into the large stations are upon the Gurleigh Point or western route? Yes; there is a good deal of *bona fide* settlement there too, but still there are a great number of blue patches which have gone back into the stations.
4559. Has the town of Wee Waa progressed much of late? Within the last five years it has progressed considerably.
4560. It was for a considerable number of years almost stationary? For many years.
4561. During the last few years it has taken a stride ahead? It has.
4562. What has caused that progress? Various causes. Increased settlement in the neighbourhood, no doubt, has had some effect on the town.
4563. A good many settlers have gone out that way during the last few years? Yes.
4564. In which portion of the district do most of the drovers that bring in flocks and herds into the town reside? A great number of the drovers of Queensland stock are Queensland men. Some go out from here and bring stock back. Some live down the country. There are a few living about here.
4565. Is it a fact that Wee Waa is largely settled by local drovers? Mr. Maiden and Mr. Woods are the only two, I think, who live about Wee Waa.
4566. *Mr. McCourt.*] Have you advocated in your paper the construction of the line from Narrabri to Moree? No.
4567. You have not expressed any opinion in your paper? No; except as to its going to Moree at all.
4568. Did that express the opinion of the people of Narrabri? I think so. They do not want the railway at all. They do not want the railway to leave here.
4569. Were you established here when Parliament voted a sum for the construction of this line? I was.
4570. Did you approve of the route for which that money was voted? We never approved of the railway going from here.
4571. By any route? By any route.
4572. Therefore, the people of Narrabri do not want the railway? They do not want it to leave here. I feel certain that I am voicing their opinion.
4573. *Mr. Dawson.*] Can you instance any transfers on the western side? I could not from memory, unless I saw a map with the names of the original holders.
4574. What percentage do you think there would be? That I could not say with any degree of certainty.
4575. If other people have stated that there has been no system of dummeying in the west, and that they are all *bona fide* men they have made a mistake? Oh! there are a number of *bona fide* men there to-day but a number of men who were apparently settled down there at one time, have sold out to the stations and gone elsewhere.
4576. Have you ever been over the country along the "red" line? Over a good portion of it. I have not been along the survey, but I know the country well.
4577. Do you know of anyone that has been along the survey? Yes; Mr. Wall and Mr. Ross went with the surveyors or with Mr. Harper a little time ago.
4578. Do you know the country between Millie and Woolabrar or between Millie and Edgeroi? Yes.
4579. Is it practical to get a travelling stock route to take stock to the line there? I daresay it is.
4580. Is or is it not all belar scrub with no water whatever? There is not much water on that country. There is no living water, as it were. The water is all made.
4581. It is from 14 to 15 miles from Millie to Edgeroi or to Woolabrar;—is it or is it not a fact that unless a good big travelling stock route is made, and a water tank is put down, people would never go to those stations? I daresay there would be.
4582. You do not know whether for 8 miles of the distance it is belar scrub? I know there is a very large scrub there called Eckford's scrub.
4583. A person would have to go through that scrub to get on the line? I believe the surveyed line goes through

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- through part of the scrub. There is excellent timber for building and railway purposes along Terry-Hic-Hic.
4584. This district has been settled some time, there has been a big rush for land here? Yes.
4585. How is it that comparatively little of that land has been taken up along the "red" line? The lower country is better pastoral country. They were anxious to get on to the river frontages. They had permanent water along the river; then they had the watercourse forming lagoons and swamps on the low lands and travelling stock routes towards the river. That is why they rushed the river country and black soil.
4586. If the "red" line is made all the water would have to be made, and the land is thrown open, will they not have to make permanent water? By sinking. They cannot get much on the travelling stock route in many places. They tried at Boggy Creek at a depth of several hundred feet but did not succeed.
4587. There is a good tank at Boggy Creek? Yes.
4588. But on the "red" route they would have to make permanent water either by wells or by tanks? Yes. They get water fairly easily by sinking. All the farmers along there have permanent wells.
4589. They would have to clear the land for agriculture? Undoubtedly.
4590. What areas would they have to take up to make a decent living on? I know a farmer named Meppem who has about 800 acres; but he uses a large portion of his holding for pastoral purposes. He competed for the prize which was offered by the Agricultural Department for the best farm. Mr. Croker, who was sent up to examine his farm, told him that it was some of the finest land he had seen in Australia.
4591. He would be a poor judge if he did not say that of any land about here? I do not know about that. He told me that he had been twenty-two years in the Cootramundra district, and that this land was some of the finest land he had seen in Australia.
4592. Did the farmer get the prize? Mr. Croker spoke very highly of the farm, but the orchard was not in sufficiently good condition to beat the others in the competition.
4593. How far is the farm from the "red" line? Fifteen miles from here, on Killarney run.
4594. How is it that others do not take up all the good land which is there? There has not been a good market for produce, I think, of late. It has paid people to go on pastoral lines; in that way they can make a living much more easily.
4595. No matter by which way the line may go it will do Narrabri no good as a town? No.
4596. Where is the market to come from? When the leases are thrown open there will be a large amount of settlement.
4597. Do you know anything about the Pilliga scrub? I have seen parts of it.
4598. Would it be good if cleared for agriculture? No.
4599. Would you be surprised to see corn 8 or 10 feet high growing there? Yes.
4600. *Chairman.*] You recognise that the people of Moree and beyond that town are entitled to railway communication? No.
4601. Why? Because I do not think it would pay to take the railway there. I do not think there is a sufficient volume of trade in the whole district.
4602. If the officers of the department who have inquired into the trade which comes along the road from Moree have estimated that there will be an annual loss of £900 on the line, do you not think they would be the best judges of its paying qualities? I daresay they would, but I give you my opinion all the same.
4603. Do you think the town of Narrabri would be very much injured if the railway were extended from Narrabri West to Gurleigh Point? I do.
4604. That was your reason, I presume, for saying that it should not go beyond Narrabri? No.
4605. From which quarter does the larger proportion of the traffic to the railway come—from the north or the west of Narrabri? The north.
4606. Would it be, say, two-thirds from the north and one-third from the west? I think that would be a fair estimate.
4607. What do you mean by the north? Moree, Millie, and intermediate places.
4608. Do you include anything on the northern side of the river in the western trade, or do you call all from the north side of the Namoi the northern trade? No. I would strike a line at Millie and Moree.
4609. Millie as being the most southern point of the northern area you have referred to? Yes.
4610. Is it not a fact that a very large amount of produce, especially wool, comes from the direction of Collarendabri, *via* Gundemaine and Ironbarks? A good lot comes from that way.
4611. Do you think you have given full credit for all that comes? I think so. I think fully two-thirds come by Millie and from Moree direct.
4612. Do you know whether any produce comes *via* Millie to Narrabri? Some come by Millie—some by Bulleroi and Boolcarrol.
4613. Of the Collarendabri traffic, how much comes from Millie, and how much by Buleroi and Boolcarrol? I could not say.
4614. Does more come by the southern road than by the northern road? I think a great deal more comes by Millie.
4615. If the people in that district beyond Boolcarrol and out there assert that the greatest volume of the trade from the west comes *via* Boolcarrol and Wee Waa rather than by Millie, do not you think they are likely to be correct? They may have better means of ascertaining exactly than I have, but I doubt it very much.
4616. Do you move about the country very much? I used to move about a good deal. I have been over very nearly all the district at different times.
4617. How long is it since you were out towards Collarendabri? Two or three years, probably more.
4618. There may have been a very large development since then? I think I would know of it without going out.
4619. As regards the proposed crossing from Narrabri West to Narrabri, is that the best crossing which can be obtained? I think it is.
4620. And the route generally—encircling the town? Yes.
4621. Have you any idea why that practical crossing was not discovered earlier? No. I heard some wonder expressed by the Engineer-in-Chief, too, on that matter.
4622. Are you aware that that has been the difficulty about crossing this river for several years? That may have been one difficulty, but I do not think it was all.
4623. Is there anything else we have not touched upon? I do not think so.

Mr.

Mr. Edward Hart Wall, grazier, Narrabri, sworn, and examined:—

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4624. *Chairman.*] What is your occupation? I am a grazier. I live in Narrabri, but am interested in some country outside town as a grazier. I have lived in the district off and on since 1858, and I have been living in Narrabri and district eighteen or twenty years.

4625. *Mr. McCourt.*] What is your opinion about the extension of this railway? I am of opinion that the Moree people are entitled to a railway, but I am also of opinion that in getting their railway they should not hurt hundreds of families who have laid out the savings of a lifetime in making homes in this place.

4626. How do you mean it would "hurt" them? It would hurt them to elbow the line in the way suggested.

4627. You mean by the Gurleigh Point route? Yes.

4628. You are against that route? Personally, if I wished to do my own pocket good, that is the route for me, as it goes through our ground. I could make a lot of money if it went by that route.

4629. Where is your land situated? Between Gurleigh Point and Millie—not far from Gurleigh Point. I think it goes for 6 or 7 miles through and alongside the properties of myself, my brother, and my son.

4630. What is the size of your holding? Between my brother, my son, and myself we have 13,000 or 14,000 acres.

4631. On what run is your selection situated? On old Gundemaine run.

4632. Do you know how the "red" line is surveyed? I have been along both lines.

4633. You approve of the "red" line? If it is to go to Moree—that is to do justice to the people of Moree, the people towards the Queensland border, the people of Narrabri, and the people along the route where there is a grand lot of country left.

4634. Is it fit for settlement? Yes; it is beautiful country, as nice country as ever I rode over.

4635. Have you any interest to the east of the line? None whatever between Narrabri and Moree.

4636. Have you anything else to say? I think it is much cheaper country to run a line over. It is also a shorter route than the Gurleigh Point route. Some seventeen years ago I built a house on the highest patch I could get out there—the line is surveyed close alongside the house—and the water ran into the house. I had sheep drowned there three or four years ago, and had not a dry patch on the plains for the balance of my sheep to stand on. I had to get my son to lay out £200 odd to make a tank in order to get dry land for the sheep to exist on.

4637. For how many miles would the Gurleigh Point line go through flooded country? For 7 or 8 miles it is all flooded country.

4638. What is the greatest depth you have seen? I could touch the water when riding a fair horse with the stirrup iron. In some places it would be a foot deep and in other places 3 feet deep.

4639. Would not the Gurleigh Point line go through or near more selections than a line by the other route and pay better? There cannot be any more. All the land on that line, except between our place and Bald Hill is secured, all but a patch between the road and my son's.

4640. How many acres would there be in that patch? There may be 10,000 acres.

4641. All the land along the line, except that area, is taken up? It is all secured that I know of right on to Boggy Creek from Gurleigh Point—even the reserves which were thrown open were taken up the very day they were thrown open.

4642. You do not think it would pay the best? I do not say anything about the paying capacity of the line, because one line may pay equally with the other line, but I know it would not pay the country as well.

4643. It would be a more expensive line to construct? Yes; as well as a much longer line to work.

4644. If, as you say, the people of Moree are entitled to a railway, do you not think the people of Wee Waa and beyond there are equally entitled to railway communication? I daresay they are entitled to a railway too.

4645. And, if they are, would it not be better to take a line even further west than Gurleigh Point in order to suit them? I do not think so. I do not think that some thousands of persons who live at the end of this straight line should be handicapped with 20 or 30 miles of railway travelling. I do not think the line would ever pay the country or be profitable to the people at the other end and right away to the Queensland border. I think the Queensland traffic would be lost.

4646. How do you propose that they should be served with a railway if you would not elbow the line out in that direction? I should say they are entitled to a railway, but that the line should not be bent so much out of its course to suit them, as in any case the railway would not be very distant from them.

4647. Do you think they are entitled to railway communication? I would not pass an opinion as to whether any man is entitled to railway communication; but I know that if I lived there, I should like to have a railway to my door.

4648. You have stated that Moree is entitled to railway communication because it is a grand district, and that further out, on the other side of Moree, it is as good soil as you have ever ridden over. Is not Wee Waa district equally as good as Moree district, and therefore entitled to railway communication? I think it is as good on one side of the river, but as a whole it is not so good as Moree.

4649. Is the north side as good? It is, but on the south side it is very bad—very barren.

4650. You think they are entitled to railway communication? I say Moree is, but I am not passing an opinion as to whether Wee Waa is or not. If I lived there I should like to get a railway to the place.

4651. Do you know that district well? Yes.

4652. Do you know that there are a large number of farmers out there? Yes; selectors rather.

4653. Do you not think they would be entitled to railway communication? I suppose they would.

4654. If that is so, should the railway be extended from Narrabri West to Gurleigh Point? No. It would run through valueless land on one side,—land that would not feed a wallaby; but on the other side, the land is very good, as good as there is in the Colony.

4655. Is it not a fact that a large amount of produce, wool and stock, comes through Wee Waa from Collarendabri and the country around into Narrabri? A good deal comes in here from Collarendabri.

4656. But not as much as comes through Wee Waa? I do not think any of it comes through Wee Waa. It must be very lately that they have taken to coming through Wee Waa.

4657. You are not aware that wool comes in from Collarendabri *via* Wee Waa? No. I have known them to come in by Boolcarrol and Millic. They may have come in by Wee Waa, but I am not aware that they have.

4658. If a railway were constructed to Wee Waa, and the district beyond, would not Narrabri lose a lot of trade and traffic? Yes.

Mr.
E. H. Wall.
29 Nov., 1893.

4659. And this is the reason why some of the Narrabri people are opposed to the railway going by that way? Yes.
4660. *Mr. Dawson.*] Do you know where Boolcarrol is? Yes.
4661. What sort of country is it there? Very good.
4662. How many bales of wool do they shear? I do not know how many bales, but I know they shear about 130,000 sheep.
4663. Where does that wool go? It comes in here.
4664. Supposing the "red" line were constructed, would you get any Boolcarrol wool? We would get wool by Boolcarrol as usual.
4665. If it came here? Yes.
4666. All the wool about Wee Waa would still come into Narrabri West, and the Mungyer wool as well? That may be nearer to Edgeroi. I would not say anything about the wool. Probably it would come.
4667. The road from Coolarendabri goes through Boolcarrol, does it not? One road does. The main road from Collarendabri is round by Millie, but of late years they come in by Boolcarrol.
4668. The trade from that quarter would go direct to Narrabri? Yes.
4669. The passenger traffic from Wee Waa, and to the west of Millie, would come in here, so that it would be a very good thing for Narrabri? It would.
4670. Is the country to the east of the "red" line as good as Boolcarrol? Yes. There are no better properties in the world than Gurley and Edgeroi. The sheep on Gurley, I think, number 150,000. This line does not run under the mountains. There is a grand country between the line and the mountains.
4671. How is it that no one has taken up the land? Because it is locked up.
4672. When the runs of the Colony were divided under the Act of 1884, I suppose those runs were not favoured? The land out here was all taken up then. The people settled on places where they thought they would get water easiest. Between the mountains and the red line you can get water out with a billycan out of a well at Myall Hollow. I do not think that I ever saw a better well. The "red" line is within a mile of that very well.
4673. But that will only do for one family? There is plenty of water to be got all along the line. From Boggy Creek to the proposed station is a fair day's journey for a bullock team, and there are travelling-stock routes provided from Millie to either place, and they only want to be opened up by the Government. My experience, since I was a boy, has been that ten times as many cattle travel along the main road as travel along all the other roads.
4674. And sheep? Yes.
4675. *Chairman.*] The man in charge of the water-tank at Galathera or Boggy Creek would not know whether the sheep or cattle that were watering at his tank had come down the main travelling-stock reserve at Millie or whether they had come right through from Moree? No.
4676. Are you quite sure that ten times more cattle and sheep come from the north of Moree than from any other place to the west of the main travelling-stock reserve between Narrabri and Moree? I do not think that from the north of Moree. They travel that road. Some of them come on at Millie.
4677. Would there be ten times as many cattle for shipment by the railway from the north of Moree as from the west? I would not say that.
4678. Would it be 75 or 80 per cent.? I think fully 100 per cent. or even more.*
4679. Do you know the country to the north of Moree? Yes.
4680. Say along the Queensland border—Goondiwindi, Kunopia, Mungindi, Collarendabri? I know Kunopia and Goondiwindi. I was never in the town of Mungindi, but I have been very close to the place. I know from Collarendabri out to Goodooga very well.
4681. Supposing the "red" line were constructed, would the Mungindi traffic go to Moree, or would it go *via* Millie to Narrabri? I could not say. I think the distance from here to Sydney is a bit too far for the stock to travel. I think that if I lived at Moree or Mungindi I would travel stock and truck them at Narrabri.
4682. As a matter of fact do not people who are going to use the railway to get their live stock or wool to the metropolis, strike the nearest station? As a rule they do.
4683. Therefore, if the railway terminus is shifted 70 miles north, is it not reasonable to suppose that those persons will strike the line at Moree? Yes; but I have known people to pass by and truck stock at Breeza.
4684. That is exceptional? I have known it to be done.
4685. Under a certain set of circumstances, people may pass by Moree with their live stock, and go on to Narrabri, or even to Breeza, or Boggabri? They may.
4686. *Mr. Dawson.*] Do you know the biggest cattle station on the "red" line? There is no cattle station on the proposed line.
4687. Can you say whether any stock from Tyrell on the other side of Moree would be trucked at Moree? I cannot say.
4688. Do you not know that their fat cattle, to the number of thousands a year, are driven straight down to Homebush by road? Mostly.
4689. You have had a good deal of experience amongst stock? All my life.
4690. Supposing you had to send bullocks off a run, would you send them 300 or 400 miles by a stock train, or in a good season would you travel them? I think it all depends on the seasons, men and markets. I lost once by travelling down the road.
4691. *Chairman.*] Is there any other point you would like to mention? I do not care by which road you send the railway. I have certain stock here and certain stock down the other way, but none at all on that line. I was one of a party that tried to save a lot of sheep which were drowned at Gurleigh Point. I had 4,000 fat wethers, and 400 of them got drowned on the same route. That route is considerably longer and would be a handicap on the people at the other end. It would be ruination to some hundreds of families with comfortable little homes in this town who have not the means to go away and make homes elsewhere.
4692. You think the trade of Moree is such that it justifies extension of the railway to that town, but that the importance of the town of Narrabri does not warrant the line being taken along the southern side of the river from West Narrabri *via* Gurleigh Point to Moree, and that it should go round by the town of Narrabri and proceed as directly as possible to Moree? Yes.

Mr.

* NOTE (on revision):—When I said 100 per cent. or more, I only intended, as it were, to lay stress on my answer in answer 4673, *viz.*, that ten times as many cattle and sheep travel along the main road as along all the other routes put together.

Mr. George M'Farlane, grazier and selector, sworn, and examined :—

- Mr. G. M'Farlane,
29 Nov., 1893.
4693. *Chairman.*] What is your occupation? I am a grazier and selector on Millie Run, about 32 miles west of Wee Waa.
4694. *Mr. Ewing.*] How far from Walgett? About 60 miles.
4695. Do you graze sheep? Sheep and a few head of cattle.
4696. Your particular produce is what? Wool and fat stock. It goes to Narrabri.
4697. Does it ever go to Walgett? No.
4698. Although you are within 60 miles of Walgett? It is 52 miles from my place to Narrabri West. I am nearer to Narrabri than Walgett.
4699. You are pretty well half-way between the two towns, but it suits you better to send this way? Yes.
4700. By which way do you send your produce? By team through Wee Waa to Narrabri.
4701. Do you know anything of the direct route? No.
4702. Do you know anything of the country it traverses? Very little. I have been through Millie several times.
4703. Your experience of the district is limited to the West of Narrabri? Yes.
4704. By which way ought the railway to go? It does not matter to me by which way it goes. I do not know which way would be most beneficial to the country. I came here to give evidence about the floods down in Wee Waa.
4705. Are the floods very heavy at Gurleigh Point? Yes.
4706. On the south side of the Namoi will the land be within flood reach? Not exactly.
4707. Do you know the surveyed line? No. I have seen portions of it in travelling stock.
4708. You can only speak in general terms of the height of various localities? Yes.
4709. On the south side of the river, is it possible to go down as far as Gurleigh Point without getting heavily flooded? I do not know that that is very heavily flooded. There is more high ground on the south side than on the north side.
4710. It may be passable on the south side? Yes. I have seen it in very high flood when a person could get to Wee Waa keeping the high ground out in the scrub round to Bohanna Creek.
4711. How far the south of the Namoi must they go to make that circuitous journey? Eight miles in some places.
4712. Taking the country on the north side of the Namoi, is it heavily flooded on the northern bank? Yes; opposite Gurleigh Point and lower down.
4713. How high would the floods be? From 4 feet to about a foot for about 8 miles on the northern bank.
4714. Would the same thing apply right down to Wee Waa? No.
4715. It would not be so bad as you get further down? The further down you go, the water spreads out.
4716. Do you know the river intimately between here and Wee Waa? Yes.
4717. Is there any place at which the railway could cross between Wee Waa and Gurleigh Point without the ground being seriously inundated? No; I do not think there is.
4718. Would you swear that there is not? I believe I am on oath now.
4719. You qualified your reply? Yes.
4720. You do not believe there is any place? I do not.
4721. Suppose that other people state that there is, what then? They may say what they like, I am still of the same opinion.
4722. To the best of your belief, there is no place where the Namoi could be crossed without passing over flooded country for a considerable distance from either bank? No; I lived on Wee Waa for about fourteen years. I came on to Merah, on the Namoi, in 1841, and I have never been twelve months off the Namoi since. I have had a little experience of the floods, I know every inch of the ground. I have been driving cattle and I have been in nearly all the floods which have ever been on the Namoi.
4723. Taking, for instance, the country 3 miles away from the bank of the Namoi, would that be pretty still water or would there be a current? It would be running, but nothing to do any serious damage. I have seen the fences there from Henry Hall's, out along Heelibah for 1½ miles pulled down with the flood-waters in August, 1878.
4724. You have seen the fences swept away? It was a wire fence with a top-rail. It was all pulled out of the ground for 1½ miles.
4725. *Chairman.*] Where is Heelibah? It is between Tulladoona and Boolcarrol.
4726. You say there is sufficient run at times in the water to bear down the fences? Yes.
4727. *Mr. Ewing.*] Do you know the Thalaba? Yes.
4728. Across from the Namoi to the Thalaba? Yes.
4729. Between the Namoi and the Thalaba, is there a large area of country under flood-water? There is not a great deal, it was nearly all flooded in the big flood from Thalaba to Wee Waa.
4730. Would the Thalaba and Namoi waters meet in a big flood? Yes.
4731. You are sure? I know the water comes down from Boggy Creek to the Namoi water. You may come across little patches of rosewood scrub and hard ground between those waters, but you would not go half a mile before you would be in the water again. It is pretty nearly all under water in the big flood.
4732. In a big flood, you believe the Thalaba and Namoi waters will meet? Yes; in 1874, I was on the top of the Merrywiee Bond Stockyard for five days. We pulled some doors out of the old house and put them on the yard to camp on.
4733. Where is that place? On the Thalaba.
4734. Is that the highest land between the Thalaba and the Namoi? It is as about as high as most of it.
4735. Do you know the waters to meet? Yes. The waters all went across there—right out by Boolcarrol and away out by Bridgelow Tree down to meet the Thalaba water.
4736. Is there any difference in the levels between the Thalaba Flats and the Namoi Flats, and the watershed between the two? I do not think there is much difference. I think it is nearly all level.
4737. Do you know further north to Mehi? Yes.
4738. Is that level too? Yes.
4739. Will that all be flooded? They would get a few patches of ground.
4740. Right on to the Gwydir is it the same? It is all the same.
4741. You believe that it is pretty well flat from the Gwydir to the Namoi, and that in a big flood it is all under water? Yes.

4742. Will the flood come out to Millie township? No.

4743. When you were on the stockyard at Thalaba was it running there or was it pretty still dead water? Not much current. There was a little but not enough to do any harm. No fences were washed away by the flood waters. Mr.
G. M'Farlane.
29 Nov., 1893.

4744. There was less current there than on the Namoi Flat? Yes.

4745. You think that somewhere between the Thalaba and the Namoi the water would be pretty still? Yes.

4746. And it would not wash anything away? No.

4747. *Mr. Davies.*] You are a resident of Wee Waa;—why did you not give evidence at Wee Waa? I had some stock coming up and I could not attend at the court-house to day. I called in yesterday as I came through, and waited some time, but as I could see no chance of being able to give any evidence I came on.

4748. That is the only reason you had for not being examined at Wee Waa? Mr. Dobbie and Mr. Maiden asked me to attend, and I said if I were not delayed too long I would.

4749. Do you favour the "red" route? The shortest and most direct. I do not feel anxious about the matter. I am disinterested as to which way it goes. I know all that country is flooded.

4750. You have no interest in the construction of the railway either one way or the other? I have no land in Narrabri or Wee Waa. If it goes by Wee Waa I shall get more benefit than I should if it goes by Narrabri. It would be nearer 24 or 25 miles to me.

4751. *Mr. O'Sullivan.*] If that country has been so subject to floods, how is it that they have been able to make such a success of grazing pursuits in that district? The floods never do much harm, wherever we can get some little patches of earth for the stock to go on. There is no great heavy current of water below Wee Waa.

4752. Have you elevated country enough to save all your flocks? Yes; I have got land enough to keep them alive.

4753. Then it may be that you have elevated country enough out there to carry a railway? You could not keep on this high ground all the way without going through water.

4754. Is it a fact that there is a sandy ridge running nearly all the way from Narrabri West to Wee Waa, and that the ridge is much higher than the surrounding country? Yes.

4755. Would it be possible to run a railway along these and place it above the reach of the flood waters? I think so. With the exception of 2 or 3 miles through the swamps.

4756. In 1841 was the town of Wee Waa in existence? No; I do not think it was started before 1849 or 1850.

4757. Why did the town remain stationary so long considering it was the first town on the Namoi? I cannot say.

4758. Was there not very much settlement in those days? No.

4759. When did the settlement begin to take place? About 1872 or 1874.

4760. Since that time the town has progressed? Yes.

4761. Is it a prosperous place now? It is a fairly prosperous place.

4762. Is the district well settled around there? Yes.

4763. And the graziers, large and small, appear to be prospering? Yes.

PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS.

Railway from Narrabri to Moree.

SECTIONAL COMMITTEE.

APPENDIX.

A.

[To Evidence of Mr. F. C. Stavcley.]

NUMBER OF SHEEP ON EACH STATION IN THE COLLARENDABRI DISTRICT.

Dunambril	...	...	...	...	120,000	Cando Cando	...	...	...	...	6,000
Piangobla	...	...	...	...	30,000	Kumbille	...	...	...	...	10,000
Moongulla	...	...	...	...	20,000	Amos Lake	...	...	...	...	5,000
Angledool	...	...	...	...	120,000	Paton & Reardon	...	...	...	...	4,000
Gumalally	...	...	...	...	10,000*	Oriel	...	...	...	...	180,000
Invernary	...	...	...	...	7,000	Mercadool	...	...	...	...	120,000
Banakine	...	...	...	...	10,000	Dungalear	...	...	...	...	120,000
Basrool	...	...	...	...	10,000	Collymongle	...	...	...	...	60,000
Dorrema	...	...	...	...	12,000	Buddagrove	...	...	...	...	15,000
B. Werabilla	...	...	...	...	12,000	Thalaba	...	...	...	...	10,000
Mt. Brandon	...	...	...	...	6,000	O'Connell	...	...	...	...	8,000
Long Swamp	...	...	...	...	4,000	Mungyer	...	...	...	...	90,000
Mogil Mogil	...	...	...	...	8,000	Bunna Bunna	...	...	...	...	60,000
Burren Barn	...	...	...	...	30,000	Selectors, S. Barwon	...	...	...	...	100,000
Goondablaie	...	...	...	...	120,000						
Dumaresque	...	...	...	...	8,000						1,336,000

B.

[To Evidence of Mr. W. H. O'M. Wood.]

CROWN LANDS HELD UNDER LEASE AND LICENSE ON 30TH JUNE, 1893.

Holding.	Resumed Area.	Leasehold Area.	Holding.	Resumed Area.	Leasehold Area.
	Acres.	Acres.		Acres.	Acres.
Banghect	25,997	34,991	Minna Minane	1,017	6,560
Biniguy	7,129	9,844	Mungie and Wallah	31,275	31,700
Blue Nobby*	14,193	20,431	Mungyer	22,889	112,034
Bogamildi	135,772	70,287	Myall Creek*	Armidale, D.S.O.	65,608
Booloroo	2,231	18,037	Mungie Bundie	3,600	15,326
Boonal	10,084	17,958	Sandholes	11,439	14,380
Borong	46,500	45,672	Oreel	44,515	151,290
Bingara	16,414	24,944	Telleraga	5,897	16,771
Bunarba	14,472	27,801	Tareclari	929	20,901
Bunarbra	13,410	19,530	Terry-Hic-Hic	106,347	126,705
Caidmurra	44,418	62,868	Tucka Tucka	25,580	17,776
Carbucky	5,798	46,684	Tulloona	40,435	104,683
Collymongoul	28,199	69,729	Tycannah	1,250	8,735
Combaddello and Nepickallina	7,299	28,621	Tyreel	4,182	31,651
Coolatait	32,651	44,820	Wathagar	530	2,961
Currugundi	...	14,618	Weebollabolla	3,532	13,632
Coppymurrumbil	34,534	48,518	Welbendungah	30,215	46,660
Coubail	11,491	21,054	Welbon	83,474	130,265
Derra Derra	9,984	13,181	Werrina	77,090	79,600
Ginerol	25,687	40,351	Whalan	14,328	51,202
Goenal	14,483	26,050	Wirrah	11,267	59,875
Gournama*	19,026	27,175	Yagaba	11,056	18,176
Gragin and Graman*	28,182	43,559	Yallaroi	42,696	54,030
Gunyer Warildi	25,373	31,202	Yarrowah	34,805	52,143
Gurley	43,990	56,228	Occupation lots 1 to 7	99,220	...
Kunopia	24,667	49,001			
Malaraway and Millie North	16,155	Tamworth, D.S.O.	Total area	1,415,999	2,323,071
Moree	6,357	20,318	Total	3,739,070	
Merriwa	8,227	14,641			
Midkin	35,708	142,294			

* Would go to Inverell if that line is constructed.

† Might go to Inverell if that line is constructed.

C.

C.

[*To Evidence of Mr. J. Maiden.*]

STATIONS WHICH WOULD BE SERVED BY THE GURLEIGH POINT RAILWAY.

Stations which are north-west of Gurleigh Point:—Boolecarrol, Merah, Drildool, Millie (Namoi River), Bugilbone, Yarraldool, Gorian, Burren, Keelendi, Bullerawa, Cuttabri, Wee Waa, Nowley.

C 1.

SELECTORS WHO WOULD BE SERVED BY THE GURLEIGH POINT RAILWAY.

Merah Station, westerly 6 miles:—Mrs. L. Thompson, John Thompson, W. T. Mitchell, M. McMahon, A. Loder, W. Holcombe, J. Boyle, L. Rodwell, John Boyle, James Robertson, senior, J. Robertson, junior, T. Wall and Sons, T. Knight, J. Knight, A. Knight, C. Kellaher, D. Kellaher, James Radford, A. Hamilton, senior, A. Hamilton, junior, John Hamilton, Charles Hamilton, David Hamilton, James Russell, Mrs. Dewson, Ernest Loder, William Loder, J. Campbell, W. Campbell, T. Loder, J. J. Toohey, Vernon Holcombe, Arthur Holcombe, Fanny Holcombe.

Drildool Station, 28 miles west:—John Hardy, E. Dewson, D. Coward, C. Coward, A. Belson, Alfred Belson, James Smith, S. Smith, O. J. Hardy, R. Scott, S. Powell, P. V. C. Powell, A. E. Powell, P. Murphy.

Gorian, north-west 50 miles from Wee Waa:—G. Francis, J. Francis, Miss Francis, A. Capel, G. Capel, V. Capel, C. Capel, R. Capel, H. Capel.

Burren Station, 36 miles north-west of Wee Waa:—W. Hocken, J. Duncan, senr., J. Duncan, junr., T. Martin, S. Wyatt, — Green, — Green, R. Peard, H. Hutchison, T. Moore, J. Nowland, Mrs. Baldwin, C. Belson, C. Knight.

Wee Waa Station:—W. A. Gordon, T. L. Schwager, Mrs. Graham, J. Graham, Archie McKenzie, W. McKenzie, Allan Mackenzie, W. Wheeler, Mrs. Smith, John Hamilton, E. Ball, — Dean, J. Hawthorn, senr., J. Hawthorn, junr.

Bugilbone Station, westerly 40 miles:—W. Bennett, J. A. Bennett, H. M. Bennett, J. P. Bennett, D. O'Mullane, H. C. Kelly, O. C. K. Turner, E. Turner, Geo. Corcoran, A. Smail, T. O'Mullane, Thomas O'Mullane, W. O'Mullane, J. O'Mullane, R. Blair, H. Bulgarney, G. Nelson, M. O'Neil, E. Purtell, A. Moore, J. Magne, D. Forrest, 40 miles west of Wee Waa.

Millie Station, westerly 30 miles, on the Namoi:—S. Dempsy, J. Dempsy, D. Murphy, W. Houlahan, W. B. Smith, Mrs. Smith, G. Smith, E. Thompson, G. McFarlane, R. Holland, — Baldwin.

Gundemaine Run, west of Gurleigh Point, within 10 miles of Wee Waa—north-east:—R. Smith, — Whiteman, Mrs. Flockhart, John Gray, E. Jeffrey, J. P. Doherty, L. Brennan, J. Lehane, P. Lehane, John Lehane, junior, W. Maxwell, T. Wyatt, B. M. W. Cohen, P. Shanahan, W. Herbert, E. Wall, C. Lehane, R. Parkinson.

Nowley Station, 25 miles north-west of Wee Waa:—E. G. Ratliff, A. W. Carstairs, R. Beard, W. Hunt, J. Hunt, Jacob Hunt, John Hunt, — Hunt, senior, W. Allen, D. Maloney.

Keelendi Station, south side of Namoi, 45 miles west:—P. Ryan, W. Ryan, F. James, G. Phelps, J. Phelps, W. Phelps, J. Holland, R. Holland, Robert Holland, W. Holland, D. McCarthy, P. Burns, Richard Holcombe, Martin Donohoe, C. Rose, S. Burrell, E. Bowers, W. Wilson.

D.

[*To Evidence of Mr. W. Mackenzie.*]

SELECTORS ON CUTTABRI, BULLERAWA, AND YARRALDOOL STATIONS.

Cuttabri Station, 16 miles west Wee Waa, south side of Namoi:—Mrs. W. B. Trindall, T. N. Jowitt, J. Hogan, T. Hawke, B. Trindall.

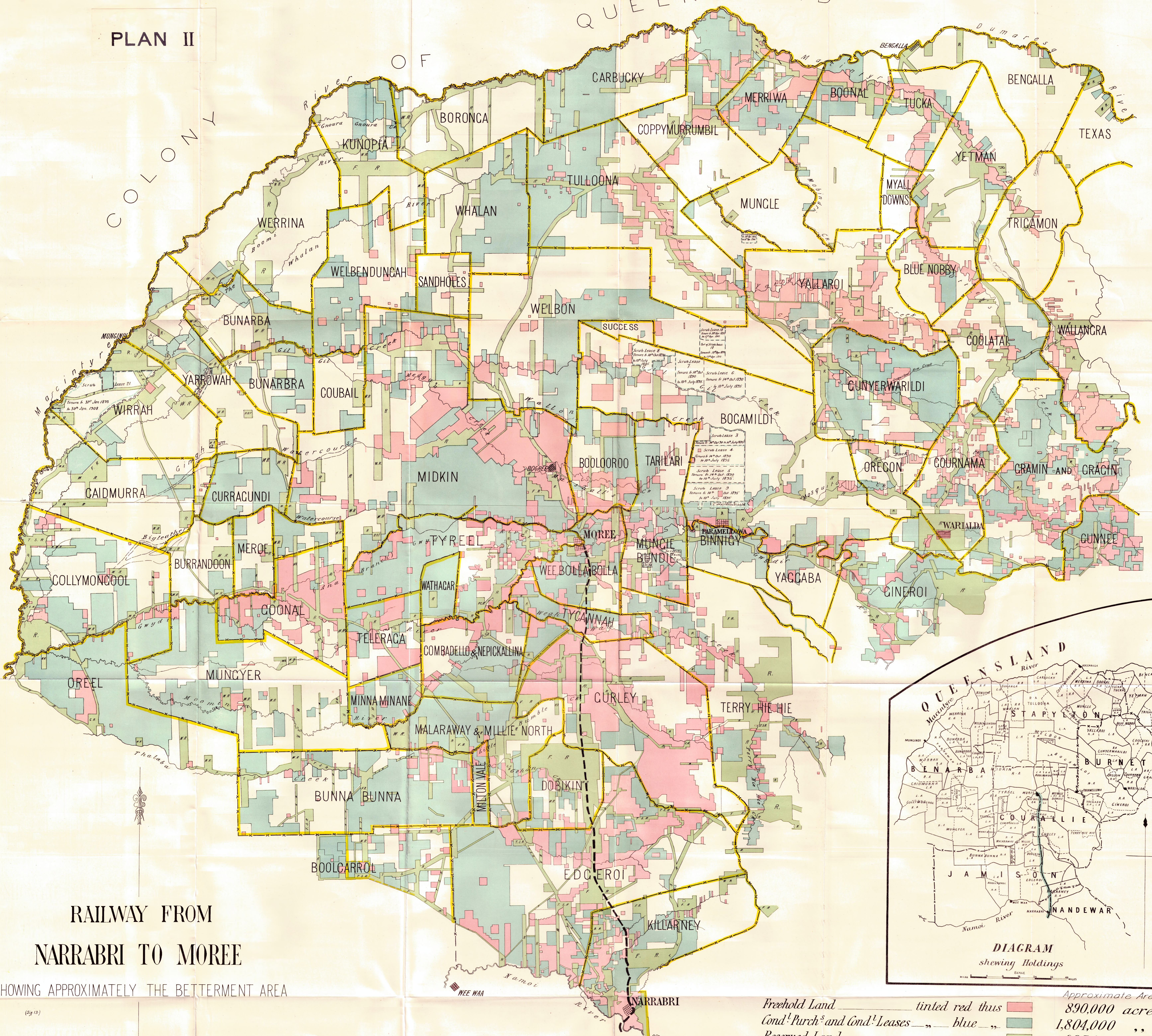
Bullerawa Station, 25 miles west of Wee Waa, south side of Namoi:—T. Brown, Miss Brummel, R. Morrow.

Yarraldool Station, 55 miles west of Wee Waa:—John Robertson, G. Moffitt, C. Cannon, W. Doherty, J. Holcombe, W. Holcombe, C. Richards, T. Richards, B. Richards, — Marshall, Miss Marshall, (3) Murray and family, J. Quinn, J. J. Magney.

[Two Plans.]

PLAN II

QUEENSLAND

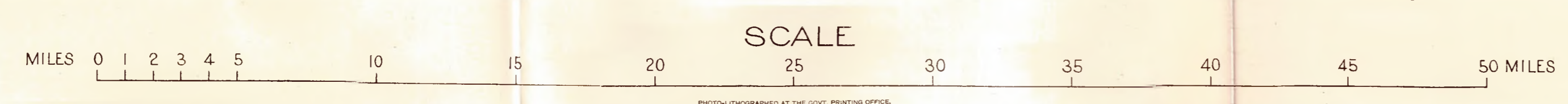


RAILWAY FROM
NARRABRI TO MOREE

SHOWING APPROXIMATELY THE BETTERMENT AREA



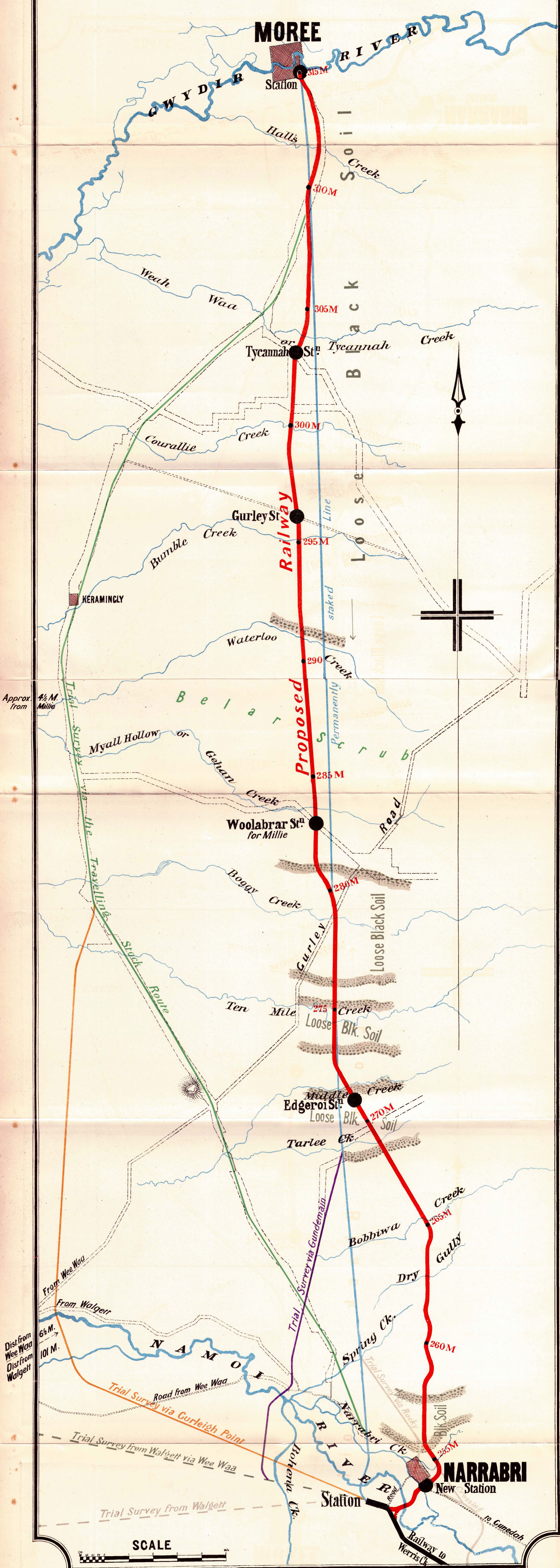
Freehold Land	tinted red thus	890,000 acres.
Cond ^l Purch ^s and Cond ^l Leases	blue "	1,804,000 "
Reserved Land	green "	985,000 "
Remaining Crown Land uncolored		3,615,000 "
Holding boundaries shown thus		
Trial Railway Line	--- --	



(59 13)

N.S.W.R.

NARRABRI TO MOREE



1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

RAILWAY FROM NARRABRI TO MOREE.

(PETITION FROM CERTAIN GRAZIERS, MERCHANTS, HOTEL-KEEPERS, AND RESIDENTS OF THE DISTRICT OF THE NARRAN RIVER, IN FAVOUR OF A TRIAL SURVEY FROM NARRABRI RAILWAY STATION TO GURLEY POINT.)

Received by the Legislative Assembly, 30 January, 1894.

To the Honorable the Speaker and Members of the Legislative Assembly, Sydney,—

We the undersigned, graziers, merchants, hotel-keepers, and residents in the districts of Narran River and Southern Border, Queensland, do most humbly petition and pray that before your sanction be given to the direct line of extension of railway from Narrabri to Moree, as approved by only a bare majority of members of the Works Committee, you would graciously be pleased to direct a trial survey to be made from present Narrabri Railway Station to a place on the Namoi River known as Gurley Point, some 4 or 5 miles from Wee Waa to cross Namoi there, and thence run through Boolcarroll to Millie or West Millie, and so on to Moree.

Your Petitioners would respectfully point out that by making the extension to Moree by route as above suggested, you would benefit Wee Waa, Pilliga, and Walgett, and secure traffic that would otherwise go by river; that you would bring railway some 50 miles nearer to Mogil, Collarendabri, Angledool, and Southern Queensland, and secure traffic that otherwise will be diverted to Brisbane; that should line run through Killarney, Edgeroi, Goorillie, and Tycannah, as by direct route submitted to Works Committee, we your Petitioners would not in any way be benefited by such extension; that as heretofore we must send our wool and produce to Narrabri, and drive there to meet train, and much business will be diverted from Sydney to Brisbane.

We beg of you to take these matters into your consideration, and to direct the trial survey we have above submitted to you.

And your Petitioners will ever humbly pray.

[Here follow 49 signatures.]

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

RAILWAY FROM NARRABRI TO MOREE.
(PETITION FROM CERTAIN RESIDENTS OF COLLARENDABRI AND SURROUNDING DISTRICTS IN FAVOUR OF A TRIAL SURVEY FROM NARRABRI WEST TO THE BARWON.)

Received by the Legislative Assembly, 30 January, 1894.

To the Honorable Members of the Legislative Assembly of New South Wales, in Parliament assembled.
The Petition of the undersigned,—

HUMBLY SHOWETH:—

1. That a line of railway from Narrabri West, as direct as is found practicable, *via* Gurleigh Point, Wee Waa, Boolcarrol, Bulgeroi, on to the Barwon River, at or near Collarendabri, then on to the border of the Colony, at or near Angledool, is urgently required by your Petitioners and others using or occupying the land under the various provisions of the Crown Lands Act.

2. That a large influx of settlers has taken place within the last two or three years in the direction of your Petitioners, which will doubtless continue to increase year by year—as the land is known to be good—and possibilities for water culture exist which can scarcely be over-estimated.

3. That at present there is a large traffic in connection with the 3,000,000 (approximately) of sheep owned by your Petitioners and others; also there is other stock and traffic connected with the several towns and centres of population steadily rising into importance, which a direct line of railway would very largely increase, extending some distance even into the colony of Queensland.

4. That the outlet and inlet for the very large traffic connected with the district or territory of the Narran, Barwon, and part of the Namoi, is often hindered or rendered impossible, sometimes for the want of water and at other times from too much of it, to the great injury of your Petitioners and the loss of revenue to the State, which would be largely prevented by constructing the direct line of railway from Narrabri West in the direction stated.

5. That there is no material available at reasonable cost for making ordinary roads on the route mentioned, yet some provision must be made for all the traffic. Therefore your Petitioners submit that a line of railway will be by far the best and cheapest to ensure communication for this great territory with the world at large.

6. That a proposal has been submitted to the Committee for Public Works for a direct line of railway from Narrabri to Moree, regardless of the interests of your Petitioners and others living west of that proposed line, which your Petitioners submit should not be sanctioned, seeing that said line, if constructed, will serve very few persons west of it; and as there is but little "feeding ground" to the east thereof it must necessarily be made at a loss to the Colony.

7. That a line starting from Narrabri West terminus, going *via* about Gurleigh Point and as far west as is found practicable, on to the Barwon, &c., branching off to Moree where most favourable, would, by providing for two extensions, save large expenditure in construction (probably forty or fifty miles at per mile schedule), be the best for your Petitioners, and for the Colony.

Your Petitioners therefore humbly pray, for the above reasons and for others which might be advanced, that an immediate survey of direct line from Narrabri West, *via* Gurleigh Point, on to the Barwon, at or near Collarendabri, and to the border, at or near Angledool, be ordered; and that your Honourable House will insist that the same be made before anything is decided on regarding railway extension from Narrabri to Moree.

And your Petitioners, as in duty bound, will ever pray.

[Here follow 100 signatures.]

1894.

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

RAILWAY FROM NARRABRI TO MOREE.

(PETITION FROM CERTAIN RESIDENTS OF CENTRAL AND LOWER NAMOI, IN FAVOUR OF A SURVEY
ACROSS THE NAMOI, WEST OF GURLEIGH POINT.)

Received by the Legislative Assembly, 7 February, 1894.

To the Honorable the Speaker and Honorable Gentlemen of the Legislative Assembly of New South
Wales, in Parliament assembled.

The prayer of your Petitioners,—

HUMBLY SHOWETH:—

1. That your Petitioners, who are residents of Central and Lower Namoi, desire that a survey may be made of a route for the Narrabri-Moree Railway, which will cross the Namoi a few miles west of Gurleigh Point.

2. That a very suitable crossing can be secured at which the banks are above the highest water-mark of any flood since 1840.

3. That the railway, by being constructed on this route, would serve a very large number of settlers on Central and Lower Namoi, Wee Waa, Pilliga, Wangan, Boolcarrol, Merah, Pian Creek, Burren, Bunna Bunna, Merrywhimbone, Drildool, Barwon, Collarendabri, Moonie, Cryon, Gorian, Millie, Bugilbone, Bullerawa, Mogil Mogil, Mehi, Combadello, Thalaba Creek, and the inhabitants of an immense scope of good country, which would not be at all benefited by the proposed extension from Narrabri to Moree if it be taken along the foot of the mountains.

4. That the land through which it would pass is at present occupied by many settlers, while that on the direct route is monopolised by a few large estates that are practically unpopulated.

5. That it would for some distance pass through an extensive ironbark and pine forest, in which great quantities of the sleepers necessary for its construction could be obtained almost on the line.

6. That the direct route is to a large extent inaccessible, owing to absence of roads leading to it, as it passes to a large extent through private lands; whereas our proposed route is crossed by numerous roads and stock routes.

7. That the construction of the line by this route, though slightly longer, would be a better investment than by the direct route, as the returns would be out of all proportion greater.

8. That the cost of construction would be reasonable, as the country is of such a level character that few engineering difficulties are presented.

9. That much less bridging is necessary than on the direct route, as very few creeks or water-courses have to be crossed.

And your Petitioners therefore pray that your Honorable House will be pleased to grant the survey asked for.

And your Petitioners, as in duty bound, will ever pray.

[Here follow 183 signatures.]

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

RAILWAY FROM NARRABRI TO MOREE.
(PETITION FROM CERTAIN RESIDENTS OF THE TOWN AND DISTRICT OF NARRABRI, IN FAVOUR OF.)

Received by the Legislative Assembly, 21 February, 1894.

To the Honorable the Speaker of the Legislative Assembly of New South Wales, and Members of the Legislative Assembly, in Parliament assembled.

The Petition of the undersigned residents of the town and district of Narrabri,—

HUMBLY SHOWETH:—

1. That we, the undersigned residents of the Narrabri district, are of opinion that the extension of the railway line from Narrabri to Moree should proceed by the direct route or red line as shown upon the map, and for the following reasons:—

- (a) That it is by far the shortest route.
- (b) That it will be much more cheaply constructed on account of its being naturally drained, and the land is of a good, sound character, and ballast is obtainable at a minimum cost throughout.
- (c) That the land through which it is proposed to take this railway is eminently suited for agriculture, and will be largely availed of for settlement when the leases are thrown open.
- (d) That Moree being the centre point of the northern and eastern traffic, it would be unjust to the residents to compel them to pay the higher rate of carriage consequent upon taking a circuitous route.
- (e) That the direct route if carried out would be the means of securing a very large proportion of the Queensland Border traffic.
- (f) That both the alternative routes are subject to flood and storm-water, and would consequently entail a very large expenditure both in construction and maintenance.

Your Petitioners therefore humbly pray that you will be pleased to advise Parliament to sanction the construction of the Narrabri Moree Railway extension, according to the recommendation of the Public Works Committee.

And your Petitioners, as in ^{their} duty bound, will ever pray.

[Here follow 548 signatures.]

A similar Petition was received,—

On 21st February, 1894, from certain residents of Moree and District; 319 signatures.

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

NARRABRI TO MOREE RAILWAY BILL.

(MESSAGE No. 37.)

Ordered by the Legislative Assembly to be printed, 25 April, 1894.

R. W. DUFF,
Governor.

Message No. 37.

In accordance with the provisions contained in the 54th section of the Constitution Act, the Governor recommends for the consideration of the Legislative Assembly the expediency of making provision to meet the requisite expenses in connection with a Bill to sanction the construction of a line of railway from Narrabri to Moree.

*Government House,
Sydney, 24th April, 1894.*

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

EXTENSION OF LISMORE-TWEED RAILWAY TO
TENTERFIELD.

(PETITION FROM LAURENCE EDWIN COPE, MAYOR, CHAIRMAN OF A PUBLIC MEETING AT
CASINO, IN FAVOUR OF.)

Received by the Legislative Assembly. 28 March, 1894.

To the Honorable the Speaker and Members of the Legislative Assembly of New South Wales, in
Parliament assembled.

The Petition of the undersigned Laurence Edwin Cope, Mayor of the Municipal District of Casino,
Chairman of a Public Meeting held in Casino, on 10th March, 1894,—

RESPECTFULLY SHOWETH:—

1. That the extension of the Lismore-Tweed line of railway from Lismore to Tenterfield by the newly-surveyed route, connecting both the Clarence and Richmond River Districts with the tableland, would result in the immediate development of a very considerable trade and in the economical consolidation of the railway system of the Colony, and the construction of such a line is therefore of great national importance.

2. That as the first section of the proposed line, viz., from Lismore to Casino, has been approved of by the Sectional Committee on Public Works at an estimated cost of about £7,000 or £8,000 per mile, the claim of this district to be connected with the railway system is superior to that of any other portion of the Colony, more especially as the construction of this section must necessarily form the first step in any scheme of communication between the tableland and the North Coast districts.

3. That your petitioner considers that the Lismore-Casino section is deserving of earlier attention than other schemes which have not yet been approved of by the Public Works Committee.

Your Petitioner therefore humbly prays that your Honorable House will take the foregoing premises into your early and favourable consideration.

And your Petitioner, as in duty bound, will ever pray.

L. E. COPE.

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

GLEN INNES TO INVERELL RAILWAY BILL.
(MESSAGE No. 9.)

Ordered by the Legislative Assembly to be printed, 24 January, 1894.

R. W. DUFF,
Governor.

Message No. 9.

In accordance with the provisions contained in the 54th section of the Constitution Act, the Governor recommends for the consideration of the Legislative Assembly the expediency of making provision to meet the requisite expenses in connection with a Bill to sanction the construction of a line of railway from Glen Innes to Inverell.

*Government House,
Sydney, 23rd January, 1894.*

1894.

NEW SOUTH WALES.

PARLIAMENTARY STANDING COMMITTEE ON
PUBLIC WORKS.

REPORT

TOGETHER WITH

MINUTES OF EVIDENCE, APPENDICES, AND PLANS,

RELATING TO THE

PROPOSED DEVIATION

TO

AVOID THE LITHGOW ZIGZAG.

Presented to Parliament in accordance with the provisions of the Public Works Act,
51 Vic. No. 37.

SYDNEY: CHARLES POTTER, GOVERNMENT PRINTER.

MEMBERS OF THE COMMITTEE.

LEGISLATIVE COUNCIL.

The Honorable WILLIAM HENRY SUTTON, Vice-Chairman.
 The Honorable JAMES HOSKINS.
 The Honorable FREDERICK THOMAS HUMPHREY.
 The Honorable JOHN DAVIES, C.M.G.
 The Honorable WILLIAM JOSEPH TRICKETT.

LEGISLATIVE ASSEMBLY.

JACOB GARRARD, Esquire, Chairman.
 THOMAS THOMSON EWING, Esquire.
 WILLIAM CHANDOS WALL, Esquire.
 WILLIAM McCOURT, Esquire.
 JOHN CASH NEILD, Esquire.
 EDWARD WILLIAM O'SULLIVAN, Esquire.
 CHARLES COLLINS, Esquire.
 HENRY DAWSON, Esquire.

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PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS.

DEVIATION TO AVOID THE LITHGOW ZIGZAG.

REPORT.

THE PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS, appointed during the first session of the present Parliament, under the Public Works Act of 1888, 51 Vic. No. 37, the Public Works Act Amendment Act of 1889, 52 Vic. No. 26, and the Public Works (Committees' Remuneration) Act of 1889, 53 Vic. No. 11, to whom was referred the duty of considering and reporting upon "the expediency of carrying out a deviation on the Great Western Line of Railway for the purpose of avoiding the Lithgow Zigzag" have, after due inquiry, resolved that it is not expedient the proposed deviation should be carried out; and, in accordance with the provision of sub-section IV, of clause 13, of the Public Works Act, report their resolution to the Legislative Assembly:—

1. According to the evidence before the Committee the idea of doing away with the Zigzag is not a recent one. As far back as 1885 the matter was mentioned in the Legislative Assembly, the suggestion being to make the deviation as now proposed between Dargan's Creek and the Zigzag bottom points. At that time Mr. John Whitton, then Engineer-in-Chief for Railways, disapproved of the proposal on the grounds of the great expense that would have to be incurred and the small improvement that would be effected. This led to the matter remaining in abeyance for some years, and it was not until 1892 that the subject again came into prominent notice. In that year it was reported to the Minister for Works by the Engineer-in-Chief for Railway Construction, Mr. H. Deane, that the Railway Commissioners were desirous of having the necessary deviation made if it could be done at a reasonable cost, and after some delay three schemes were suggested by Mr. Deane from reports submitted to him by his officers, and referred by him to the Railway Commissioners. In November, 1893, the Commissioners brought the matter under the notice of the Minister for Railways in a communication in which they mentioned the disadvantage to traffic and risk to passengers passing up and down the Lithgow Zigzag, and the beneficial effects which had followed the cutting out of the Lapstone Zigzag. The circumstances, they were of opinion, justified them in asking the Government to consider the expediency of providing the money necessary for doing away with the Lithgow Zigzag, and they proposed the scheme which subsequently was submitted to the Committee, and will be found referred to in this Report as No. 1 Scheme. The work, they stated, would in all ways be advantageous, and would more than return interest on the capital expended. A conversation which the Premier, Sir George Dibbs, had with the Chief Commissioner on the question of providing work for the unemployed, prior to the date of the communication addressed to the Minister for Railways, gave additional importance to the proposed deviation as one that might lead to the employment of a large number of men in ordinary pick and shovel labour. The Premier expressed a wish that the work should be put in progress with the least possible delay, and steps were then taken by the Commissioners to have the plans

plans of their scheme completed. Shortly afterwards the question was raised as to whether the work should be carried out by the Commissioners or by the Government through the Department of Public Works. If carried out by the Government a reference to the Public Works Committee was indispensable. The Attorney-General, to whom the matter was referred, advised that under the provisions of the Railways Act it was within the power of the Commissioners to make the deviation without inquiry by this Committee; but the Minister for Works, being of opinion that it was not contemplated by the Legislature, when passing the Railways and Public Works Acts; that any public work estimated to cost more than £20,000 should be constructed without first being investigated by the Public Works Committee, submitted the question to the Cabinet, and the Cabinet decided that the proposal should be referred by the Legislative Assembly to the Committee. This, and the subsequent reference by the Legislative Assembly, removed both the construction and the designing of the work from the Railway Commissioners. A letter, stating the decision of the Cabinet, was addressed to the Railway Commissioners on 8th January, 1894, and the plans and sections of their scheme were handed over by them to the Department of Public Works. As explained to the Committee by the Under-Secretary for Public Works, the Minister considers that, although the carrying out of such works as this deviation "might be technically in accord with the provisions of the Railways Act, yet it is entirely opposed to the spirit of legislation as embodied in the Public Works Act, which lays it down very clearly that no public work estimated to cost more than the sum of £20,000 shall be undertaken except after being reported on by this Committee, and subsequently sanctioned by Parliament." The proposed work was referred to the Committee on 25th January, 1894, and measures which had been taken by the Department of Public Works immediately the Cabinet decision was known, to have the country in the vicinity of the Zigzag explored for the purpose of finding the best route for the deviation, were pushed on rapidly.

Different schemes before the Committee.

2. As many as six schemes for deviating from the Western main line to avoid the Zigzag have, in the course of their inquiry, been put before the Committee. Two have been submitted by the Railway Construction Branch of the Department of Public Works, two by the Railway Commissioners, and two by private persons, one of these being put forward primarily in the interests of Hartley Vale. For convenient reference the schemes submitted by the Railway Construction Branch and the Railway Commissioners are numbered in the order in which they were prepared, from 1 to 4; the two others are respectively known as Mr. J. W. Rock's proposal, and a proposal by Mr. E. M. Munford. In addition to these, two lines, known respectively as the Colo Valley line and the Blacktown to Blayney line, were explained to the Committee, but as they are more of the nature of new and distinct railways than of mere deviations they do not in any material respect affect the real subject for consideration.

No. 1 scheme.

3. No. 1 scheme is that proposed by the Railway Commissioners in the first instance, and fully matured before the duty of preparing a definite scheme for the consideration of the Committee was, by the resolution of Parliament referring the proposed deviation to the Committee, transferred from the Commissioners to the Minister for Works. By this scheme the deviation would leave the existing line at a point near Dargan's Creek, about 86 miles 48 chains from Sydney, and proceed by a route north of the present line, through cutting and tunnel, to the bottom points of the Zigzag. The tunnel is the principal feature of the scheme. It would be 1 mile 52 chains long, the total length of the deviation being 2 miles 53 chains. Ventilation would be secured by making the tunnel large enough for a double line, and it would be assisted to some extent by two vertical shafts. The grade of the line through the tunnel would be a continuously ascending one of about 1 in 50 from the bottom points to Dargan's Creek. On the portion of the existing line proposed to be done away with, 5 miles 36 chains in length, the grades vary from 1 in 33 to 1 in 42, the ruling grade westerly towards Bathurst being 1 in 33, and the ruling grade towards Sydney 1 in 42. The first-mentioned grade, which extends from Dargan's Creek to Clarence Siding, a distance of 1 mile 32 chains, is a great obstruction to the traffic from Sydney to the west. By carrying out the tunnel scheme this 1 in 33 grade as well as a portion of the 1 in 42 would be got rid of, and the western-going traffic correspondingly benefited; while, in addition to this, the risk of

of accident from the necessity to descend and ascend the Zigzag would be permanently removed. The estimated cost of the work in accordance with this scheme was, in the first instance, £225,000, subsequently reduced to £213,000, which includes two lines of permanent way with 80-lb. rails.

4. No. 2 scheme is one prepared by the Railway Construction Branch, but afterwards withdrawn. It is coloured red on the plan, and is known as the "spiral" route. Its chief point is the idea of having three comparatively short tunnels instead of one long one. These three tunnels would be, respectively, 474 yards, 257 yards, and 977 yards. Through the two shorter tunnels the grade would be 1 in 50, and through the longest 1 in 77; or, without much additional expense, the grade in each could be made 1 in 60. The 1 in 33 grade ascending to the Clarence Tunnel would not be done away with by adopting the "spiral" route, but by a method shown on the plan this grade could, in connection with this scheme, be cut out, and at not much extra expense. The estimated cost of this No. 2 proposal is £108,000, exclusive of permanent way and of the cutting out of the 1 in 33 grade, and £127,000, including the excision of this grade. No. 2 scheme.

5. No. 3 scheme is the second of the two schemes prepared by the Railway Construction Branch, and that which the Department definitely proposed should be carried out. It is coloured green on the plan, and is referred to in the evidence as the "green" route. In length it is 4 miles 60 chains, the ruling grade being 1 in 60, and it shows during its course seven tunnels of a total length of about 1 mile, the longest being 768 yards. The estimated cost, exclusive of permanent way, is £165,000, and inclusive of permanent way, £186,318, subsequently reduced to £181,072. For an additional £45,000 it is estimated that the grade could be made 1 in 90. The distinguishing differences between this scheme and No. 1, or the long-tunnel scheme of the Commissioners, are the shorter tunnels and the more favourable grade. In total length it is rather more than 2 miles longer than the Commissioners' scheme. No. 3 scheme.

6. No. 4 scheme, the Engineer-in-Chief for Existing Lines states, would branch off from the present line on the northern side at 85 miles from Sydney, near Bell, and following the ridge to a point near the trigonometrical station would pass through the ridge by means of tunnels to the head of Farmer's Creek, down the valley of which it would proceed to the 94-mile peg, near the Eskbank coal-siding. The total length of this deviation would be 8 miles, and it would dispense with 9 miles 10 chains of the existing line. The grade would be 1 in 60, and the curves 15 chains. The tunnels would number two—one of 1,600 and the other of 682 yards. The estimated cost, providing for a double line, was given as approximately £250,000. The Engineer-in-Chief further states that this scheme would cut out the whole of the 1 in 42 grade in connection with the Zigzag, the 1 in 33 east of Clarence siding, and the 1 in 50 on the Bell bank. No. 4 scheme.

7. Mr. J. W. Rock's scheme, the outcome of an effort on the part of the residents of Hartley Vale to secure a line advantageous to that district, would cause the deviation to leave the existing line at Mount Victoria, and proceed via Hartley Vale to Eskbank, the length being 14 miles and 26 chains, and the grade 1 in 50. Two tunnels would be necessary, of a total length of 1 mile 40 chains. Mr. Rock's estimate for carrying out this scheme, with a double line, is £345,000, and for a single line £230,000. An amendment of this scheme, suggested by Mr. Rock, by which the deviation would be taken as far as Bowenfels instead of Eskbank, represented a line 17 miles long, with a grade of 1 in 50 for about half the distance, and 1 in 75 for the remainder. There would be one tunnel of 30 chains, and the total cost, as estimated by Mr. Rock, was given as £255,000. Mr. J. W. Rock's scheme.

8. Mr. E. M. Munford's proposal is to deviate from the main line at the coal-stage, Eskbank, and join it again at the Clarence Tunnel, and then, after keeping to the existing line for a short distance, leaving it by a straight route which would cut out the portion of the present line as far as the 86-mile post, beyond Dargan's Creek. He proposes as many as three routes from Eskbank to the Clarence Tunnel, but the details of the schemes are incomplete, and the proposal generally merits little attention. Mr. E. M. Munford's proposal.

9. In their inquiry respecting this proposed work the Committee have endeavoured to elicit the fullest information. It was necessary first to learn the reasons why it was proposed the deviation should be made, then to become acquainted with the details of the schemes suggested for effecting the object desired The Committee's inquiry.
and

and after that to carefully consider the advantages expected to be gained, and whether, admitting the importance of these advantages, the proposed work was of a character sufficiently urgent to justify the expenditure. The witnesses examined included all from whom evidence of value was obtainable, either by their being summoned before the Committee or invited to come forward by publicity given to the inquiry in the newspapers. The Under Secretary for Public Works, the Secretary to the Railway Commissioners, and the Engineer-in-Chief for Railway Construction were the first witnesses in the inquiry. Their evidence was necessary to have the proposed work before the Committee in the manner requisite to enable them to proceed with the investigation expeditiously and in order. These three official witnesses having been heard, the Committee, accompanied by a surveyor from the Railway Construction Branch of the Department of Public Works, made a visit of inspection to the Zigzag and the localities of the several routes submitted for the proposed deviation. The inspection was commenced at Mount Victoria on 9th March. At 85½ miles from Sydney an examination was made of the locality where the Railway Commissioners, through their officers, were carrying out their northerly survey, near what is known as Bell's line of road. Thence the Committee proceeded to Dargan's Creek, where they inspected the starting-point of Nos. 1, 2, and 3 schemes; and from Dargan's Creek to Clarence Siding. There the train by which they were travelling was left, and they walked in a southerly direction for about three-quarters of a mile to a spot from which they obtained an extensive view of the upper portion of the present Zigzag, and of that portion of No. 3 route which embraces the tunnel-work. Returning to the train at the Clarence Siding, they continued their journey for about 2 miles, a stop being then made for the purpose of again viewing the course of the No. 3 route. The top points of the Zigzag were next visited. There the precipitous character of the cliffs was examined, and a good view was obtained of the course of the spiral-tunnel scheme, and also of Farmer's Creek and Valley, where the Commissioners proposed to join the main line with their northerly survey. The Committee then descended to the bottom points, and proceeding up the valley, inspected the outlet of Nos. 1, 2, and 3 schemes. An inspection was also made of the principal points in the route surveyed by Mr. J. W. Rock in the interests of the residents of Hartley Vale. At Lithgow some local evidence was taken, and the Committee then proceeded to Hartley Vale, where the residents of that locality were afforded an opportunity to explain their scheme, and to become acquainted with the other proposals. Returning to Sydney, the Committee took further evidence. The Secretary to the Railway Commissioners, the Out-door Superintendent of the Railway Department, the Chief Mechanical Engineer, and the Engineer-in-Chief for Existing Lines were now examined and re-examined on all points of importance to the subject of inquiry, and particularly in regard to the actual results anticipated from doing away with the Zigzag. The Government Geologist gave evidence as to the mineral deposits in the district. The Engineer-in-Chief for Railway Construction was recalled for further examination, rendered necessary by the Committee's visit of inspection and the evidence taken during and after that visit; and Mr. John Whitton, late Engineer-in-Chief for Railways, was called as a witness, whose examination appeared to the Committee essential to making the inquiry complete. Two other witnesses, who appeared before the Committee, described the Blacktown to Blayney route and the route through the Colo Valley.

Reasons in support of the deviation.

10. The reasons advanced by the Railway Commissioners to justify the proposed work, shortly stated, are the difficulty and expense of working the traffic down and up the Zigzag, and the risk that is present to both passenger and goods trains. The obstacles to the expeditious and economical management of the traffic cannot be removed it is alleged without doing away with the Zigzag; the risk to trains may be reduced very largely by close attention to the permanent way and to the safe running of the trains over it. The cost of wear and tear from a locomotive point of view—that is, to engines, carriages, and waggons—is considered to be as high as 50 per cent. above other portions of the Western line. This is due principally to severe grades which render necessary the use of a second or push-up engine, and to passing over the Zigzag with short trains and at slow rates of speed; but though this is represented in the evidence, it is also shown that an accurate estimate of the cost of traction over the Zigzag portion of the line cannot be given, for an account

account of it is not kept. Generally stated, there is increased wear and tear of locomotives, increased consumption of fuel, and an increase in men's wages because of the extended time occupied in the running of the trains. Push-up engines are used from Eskbank to the top of the incline at Clarence. The risk attendant upon the working of the traffic over the Zigzag is due to the shortness of what are called the wings or lengths of the runs forwards and backwards, and to the liability of portions of trains—chiefly goods trains, which have to be divided—to break away. At night it is very difficult, it is said, to stop a train in the exact place necessary, and the curves, combined with steep grades, add to the uncertainty of a safe working of the traffic. To some extent the locality has been a constant source of anxiety, and, as put by the Chief Mechanical Engineer, the very nature of the place is such as to impart to an accident occurring there a very considerable character, which is not felt when dealing with comparatively level country. But while this may be so, steep grades and traffic difficulties necessitating the use of push-up engines exist on other portions of the Western line, and the doing away with the Zigzag would not make the line over the mountains, as a whole, much the easier or the safer to work. Push-up engines are as indispensable between Emu Plains and Katoomba as between Eskbank and Clarence, and the additional cost, in consequence, is much the same on both these portions of the line as it is in most places where push-up engines are used. A reason which, perhaps, more strongly supports the proposal to have the deviation made is the pecuniary saving that, it is said, would be effected by it. This saving, as stated to the Committee, is £18,000 per annum. At an early stage of the inquiry the amount was given as £10,000, but further consideration led the Commissioners to alter it to £18,000, the additional sum being the result of a determination to estimate the advantages from the deviation as from Penrith to Lithgow instead of from Clarence to Lithgow. This £18,000, after paying the interest on both the cost of the present line and of the proposed deviation, would leave a net profit of about £3,000, the whole of the saving being in working expenses.

11. If it were considered necessary that the Zigzag should be done away with by the carrying out of a deviation as proposed it would not be difficult to decide which of the several schemes put before the Committee is the most suitable. The value of the No. 1 or long tunnel scheme submitted by the Commissioners is materially affected by the efforts made by them to find and put before the Committee another, being No. 4, scheme. It suffers also in comparison with this other scheme, or with No. 3 scheme. This second scheme was not before the Committee in a complete condition, time and unfavourable weather preventing the surveys from being proceeded with in the ordinary way; but from the statements made by the Engineer for Existing Lines there is much to recommend it, if at some future time the Zigzag should be excised, and further investigation respecting this route justify the opinions entertained regarding it. This second route appears to have been to the Railway Commissioners an afterthought, and if the proposed deviation had not been referred to the Committee it is not improbable that the tunnel scheme would have been adhered to and carried out. The No. 1 or tunnel scheme is not regarded by the Committee as suitable. The great length of tunnel would be unpleasant to passengers, and the permanent way would probably be difficult for traffic in consequence of the greasiness or dampness of the rails. There is some doubt also as to whether the necessity for push-up engines would be very much reduced. No. 3, or the "green" route, has the advantages of better grades and short tunnels. It is 2 miles longer than No. 1 route, but according to the evidence that is not a serious objection, and the line could be worked easily and safely. Compared with No. 1 route it appears to be much the more preferable. Its advantages, however, do not equal those indicated by the No. 4 route, or the second proposal of the Commissioners. The great improvement in grade, the cutting out of objectionably sharp curves, and the saving of distance, in addition to avoiding the Zigzag, as represented by this route, are strong recommendations in its favour. The possibility of finding a desirable route in the locality of this No. 4 scheme was known to the Engineer-in-Chief for Railway Construction as well as to the Engineer for Existing Lines, and it was only the presence of the surveyors of the latter in the field and a desire on the part of the Engineer-in-Chief for Railway Construction not to have what might appear as two rival parties at the same work that prevented him from having the country properly explored.

The various schemes.

Question of
urgency.

12. But however much one or two of the schemes may be deserving of consideration, it is clear from the evidence of the railway officials examined that a deviation to avoid the Zigzag is not a matter of urgency. It can very well remain in abeyance. The traffic over the Western line is showing signs of decrease rather than of increase, and the decrease may be lasting. It relates chiefly to the carriage of coal, and a revival in the Western coal trade which would improve the volume of traffic over the line is not looked for. The late Engineer-in-Chief for Railways is of opinion that the Zigzag may be used with safety and advantage for the next twenty years. The Engineer for Existing Lines states that there is no danger to be apprehended from the line itself. It is, he says, a splendid piece of work, and is in thorough repair. The Chief Mechanical Engineer does not consider the deviation to be absolutely necessary, and admits that the Department could go on working the Zigzag for years to come with safety, though the deviation, in his opinion, would be an advantage. Generally, the evidence indicates an absence of urgency in relation to the proposed work; and considering this, together with the fact that the probable expenditure would amount to about £250,000, there seems to the Committee to be strong grounds for not recommending the construction of the work, for the present.

The
Committee's
decision.

13. The professional, as well as much of the evidence generally, indicating that the proposed deviation is not a matter of urgency, the Committee are of opinion that it is not expedient that the work be carried out. There is undoubtedly some risk of accident with the traffic over the Zigzag, but it is and can always be reduced to a minimum by careful management. It is the fact that though the Zigzag has been in existence for twenty-five years, no accident of a serious nature has occurred there in connection with passenger trains, and none to goods trains which careful working could not have avoided. The anticipated reduction in working expenses claims attention, but is not considered by the Committee to be so important as to justify the expenditure of a quarter of a million of money and the abandonment of a portion of the existing line which has cost the country about £170,000. At the same time it appears to them that the estimate of this saving is somewhat speculative. In the future traffic necessities may make the cutting out of the Zigzag imperative. If the traffic should increase very largely, and the increase prove to be permanent, the Zigzag will have to go, but before the question again comes forward the Department of Public Works will have been able to thoroughly investigate the apparent advantages of No. 4 Scheme, and also to ascertain whether even that scheme shows the best route that can be found. The Committee took the evidence given before them into consideration on the 5th instant, and passed, without division, the following resolution:—

“That, in the opinion of the Committee, it is not expedient that the proposed deviation to avoid the Lithgow Zigzag, as referred to the Committee by the Legislative Assembly, be carried out.”

The Railway
Commissioners and
the Department
of
Public Works.

14. Before closing this Report the Committee think it desirable to say that when any proposed public work, in which the Railway Commissioners are concerned, is referred by the Legislative Assembly to the Committee for consideration and report, the respective positions of the Railway Commissioners and their professional officers, and the Department of Public Works and its professional officers, in relation to such work, should be strictly observed; and that while this is done there should also be every effort made to act together in the public interest. In this inquiry the Department has not received from the Commissioners the recognition of its position in the matter to which it was entitled.

J. GARRARD,
Chairman.

Office of the Parliamentary Standing Committee on Public Works, .
Sydney, 16 April, 1894.

PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS.

MINUTES OF EVIDENCE.

DEVIATION TO AVOID THE LITHGOW ZIGZAG.

TUESDAY, 6 MARCH, 1894.

Present:—

	JACOB GARRARD, Esq. (CHAIRMAN).
The Hon. WILLIAM HENRY SUTTOR.	THOMAS THOMSON EWING, Esq.
The Hon. JAMES HOSKINS,	WILLIAM CHANDOS WALL, Esq.
The Hon. FREDERICK THOMAS HUMPHERY.	WILLIAM MCCOURT, Esq.
The Hon. JOHN DAVIES, C.M.G.	JOHN CASH NEILD, Esq.
The Hon. WILLIAM JOSEPH TRICKETT.	EDWARD WILLIAM O'SULLIVAN, Esq.
	CHARLES COLLINS, Esq.

The Committee proceeded to consider the proposed Deviation to avoid the Lithgow Zigzag.

Joseph Barling, Esq., Under Secretary, Department of Public Works, sworn, and examined:—

1. *Chairman.*] Do you desire to make a statement in connection with the matter now under the consideration of the Committee? I do: it is as follows:—The proposal before the Committee is that described in the resolution which was passed by the Legislative Assembly on the 25th of January last, on the motion of Mr. Lyne, Secretary for Public Works; namely, "That it be referred to the Parliamentary Standing Committee on Public Works, to consider and report on the expediency of carrying out a deviation on the Great Western line of railway, for the purpose of avoiding the Lithgow Zigzag." I do not propose to go into the earlier schemes which have been suggested for avoiding this Zigzag. The *précis* which I hand in [*Vide Appendix*] will, I think, give a pretty full account of the early history of this movement, and will obviate any necessity for me to refer to the matter at length. The question was brought to a practical issue by the Railway Commissioners, on the 24th of November last, addressing a communication to the Minister for Railways, the Honorable John See, in which they stated that ever since they had been in office, the disadvantage of passing traffic over the Lithgow Zigzag had been continually before them, as well as the continual risk in the working, consequent on trains loaded with passengers having to be propelled both up and down over the intermediate section of the Zigzag. They further said that the cutting out of the Lapstone Zigzag had so greatly facilitated the working, that they felt justified in asking the Government to consider the expediency of providing sufficient money to carry out a further alteration of the line to permit of the Lithgow Zigzag being avoided. The work, they stated, would in all ways be beneficial, and more than return interest on the capital expended. The scheme they proposed was one for leaving the existing line at a point near Dargan's Creek, about 86 miles 46 chains, and proceeding by a route through cutting and tunnel north of the existing main line to the bottom points of the Zigzag, where the existing double line of railway would be connected with. This line would be 2 miles and 48 chains in length, about 1 mile 52 chains being in tunnel. They proposed that the line should be a double one, because of the difficulty of properly ventilating so long a tunnel if only a single line were constructed. The grading through the tunnel would be a continuous ascending one from the bottom points towards Dargan's Creek, of about 1 in 50, the existing line being on varying grades of 1 in 33 and 1 in 42. The 1 in 33 grade was, they pointed out, against trains going to the west, and extended from Dargan's Creek to Clarence Siding, a distance of 1 mile 32 chains, and was a great obstruction to the whole of the traffic going from Sydney to the west. This would be entirely got rid of by their proposal, and thus materially assist the working of the western-going traffic. They estimated the whole cost of the work at about £225,000, which at 4 per cent. would mean an annual cost of £9,000; but they estimated that in addition to the great facility to the working and the avoidance of the continual risk which now takes place, the expenses would be reduced by about £10,000 per annum, so that as a commercial investment, the money would be well spent. The point they arose as to whether the work could be carried out without reference to the Public Works Committee, and on the 28th of December, the Honorable G. C. Heydon, the Attorney-General, to whom the question was referred, submitted his advising, which, perhaps, seeing the importance of the subject, it would be better for me to read to you at length. It is as follows:—

I have come to the conclusion that this work need not necessarily be referred to the Parliamentary Committee on Public Works.

From sections 12 and 13 of the Public Works Act of 1888 (though they are not at all plainly expressed) I think it appears with sufficient clearness that any work which the Railway Commissioners are authorised to carry out pursuant to the Government Railway Act of 1888, may be executed by them without reference to the Public Works Committee, notwithstanding such work may cost over £20,000.

J. Barling,
Esq.
6 Mar., 1894.

Sub-section 11 of section 23 of the Railway Act of 1888, specifies the works which the Railway Commissioners are authorised to carry out. After carefully considering that section I am of opinion that such a work as the one now contemplated comes within it. It is certainly an "alteration of a line," and it is also, I think, a "partial reconstruction of the roadway of an existing line." The section does not say "existing roadway" but "existing line"; and it seems to me clear that the line may still be the same line even if a portion of the roadway is taken over new ground.

In this case the deviation is merely for the facilitating of traffic. No question of policy of turning aside from one centre of population or producing district, and opening up another, is involved. The tract of country concerned is, I believe, barren, mountainous, unpopulated, and unproductive.

The question is one of gradients, distances, and curves—not of launching out into a new line, but solely of improving and shortening an old one.

I assume, of course, that it "appears to the Commissioners that this work is 'necessary' (which does not mean absolutely indispensable, but only that it will necessarily and materially promote the end in view) for the purpose of maintaining (which again includes the meaning of 'promoting,' 'facilitating') the traffic on an existing line." Unless they entertain this opinion, the work cannot be done at all.

This answers the question put to me, but I should like to add, that a difficulty appears to me to arise from the fact that some land will apparently have to be resumed.

Section 19 of the Public Works Act says, that the Governor may direct land to be acquired for "any authorised work," and work which may be done under the Railways Act is not (it appears to me after careful consideration) "authorised work" under the Public Works Act. However, after the money has been voted, it will be easy to bring in a short Bill declaring the work "an authorised work" and appointing the Railway Commissioners the Constructing Authorities. This is only what would have to be done, and is always done, when a work has been reported upon favorably by the Public Works Committee.

Of course, this work *could* be submitted to the Public Works Committee, but my opinion, as above, is, that it is not at all necessary to do so.

CHAS. G. HEYDON.—28/12/93.

To sum up Mr. Heydon's opinion, it was that he did not think the work need necessarily be referred to this Committee; but, on the matter being submitted to the Cabinet in January of this year, it was decided that the question should be so referred; and, in this connection, I am desired by Mr. Secretary Lyne to express his opinion, that all works of the kind should be brought before the Public Works Committee, in accordance with the Public Works Act. Mr. Lyne thinks that, although the carrying out of such works might be, technically, in accord with the provisions of the Railways Act, yet it is entirely opposed to the spirit of Legislation, as embodied in the Public Works Act, which lays it down very clearly that no public work, estimated to cost more than the sum of £20,000, shall be undertaken except after being reported on by this Committee and subsequently sanctioned by Parliament. Mr. Lyne considers that it was never for one moment contemplated by the Legislature that, while a Minister, who is directly responsible to Parliament should be required to submit public works proposals of any magnitude, to the criticism of the Committee, a body of gentlemen, who are not directly responsible to Parliament, should be relieved from this necessity. Mr. Lyne wishes me to take this opportunity to express his opinion on the matter, as this is the first occasion that a reference has been made to the Committee of a work connected with lines already opened, and under the management of the Commissioners; and he trusts that a precedent is now laid down which will be invariably followed in future. To come back again to the specific object of this inquiry, I may point out that the various proposals which have been submitted all have the object, in the first place, of cutting out the Zigzag and, secondly, the grade of 1 in 33 ascending to the Clarence tunnel. They all start at bottom points of the Zigzag, and they join the main line at approximately the same point, about the crossing of Dargan's Creek. The original line between these two points is 5 miles 40 chains in length including portions of Zigzag wings worked over; the ruling grade westerly, towards Bathurst, 1 in 33; and the ruling grade towards Sydney, 1 in 40. The first proposal, which may be called the No. 1 or "purple" route, is that proposed by the Railway Commissioners. It has a length of 2 miles 52 chains to middle of bottom wing, and, therefore, shows a considerable shortening as compared with the present line. The grade in the long tunnel is 1 in 50, and the cost, as estimated by Mr. Foxlee, is £225,000, which includes two lines of permanent way, with 80-lb rails, and a length of 2,893 lineal yards of tunnelling, or nearly 1½ miles, of which 2,816 yards are in one length. Two ventilating shafts are proposed, 12 feet in diameter. Proposal No. 2, or the "red" route, and which may be called "the spiral scheme," was suggested by this Department. In this case the length would be about the same as that of the existing line, no saving in that way being effected. The tunnelling is divided into three separate tunnels of the following lengths, viz.—tunnel No. 1, 474 yards, No. 2, 257 yards, and No. 3, 977 yards. The grade through tunnels Nos. 1 and 2 is 1 in 50, and through tunnel No. 3, 1 in 77, but without material additional expense could be made 1 in 60. This proposal alone, does not touch the 1 in 33 grade ascending to the Clarence tunnel, but this could be easily cut out at a small expense by the method shown on the plan. The estimated cost of this proposal, exclusive of permanent way, is £108,000, exclusive of the deviation to cut out the 1 in 33 grade ascending to the Clarence tunnel, the cost of which is estimated at £19,000. This would make the total estimated cost £127,000. Proposal No. 3, which may be called the "green" route, and which is the one adopted by the Department, has a length of 4 miles 60 chains. The ruling grade is 1 in 60, and includes a total length of about 1 mile of tunnelling, cut up into seven different tunnels, of a total length of about 1 mile, the longest being 768 yards. The estimated cost, exclusive of permanent way, is £165,000. The grade could be made 1 in 90, but the estimated cost would be then increased to £200,000. The proposal thus placed before you is, to a certain extent tentative, because examinations of the country are still being made, which may result in a modified proposal eventually being adopted; and to further explain this, I may mention that, on the 2nd instant, the Minister received the following letter from the Railway Commissioners:—

Office of the Railway Commissioners of New South Wales, Sydney, 2 March, 1894.

The Hon. W. J. Lyne, M.P., Minister for Public Works,—

Referring to the conversation the Chief Commissioner had with you yesterday in regard to the proposals for cutting out the Lithgow Zigzag, as intimated, another scheme which has special features of advantage in connection with it, has for some weeks been under examination by the officers of the Department; but owing to the great natural difficulties of getting over the country (the surveyors having to cut their way through the very dense bush), the plans are not in such a forward state as would enable us to say that the proposal is one that we can submit to the Public Works Committee for consideration, but from what can be seen of it, it will work out satisfactorily.

We should, therefore, be glad if it could be arranged for the Public Works Committee to postpone their investigation of the subject for a few weeks, until the proposal is further advanced.

E. M. G. EDDY,
Chief Commissioner.
W. M. FEHON,
Commissioner.
CHARLES OLIVER,
Commissioner.

And

And thereon, the Minister made the following minute:—

The route suggested by the Railway Commissioners was, I think, examined in 1886 at the suggestion of Mr. Targett, and then—for what reason I do not know—not adopted. The Public Works Committee might commence their investigation without delay, and if the Commissioners desire to submit another scheme—it can be taken later on in the inquiry.—
W.J.L., 3/3, 94.

J. Barling,
Esq.

6 Mar., 1894.

In pursuance, therefore, of the determination of Mr. Secretary Lyne, I now have the honour to bring the proposal of the Department before the Committee, which may be denominated, as I have previously said as the No. 3 or "green" route. I have only just touched upon the necessity for carrying out the proposed deviation because it will be the function of the Railway Commissioners to satisfy you on this point. I also hand in the Commissioners' original letter, on which the scheme was brought forward (*Vide Appendix*), a copy of Mr. Deane's report in regard to the cost of that particular portion of the existing line (*Vide Appendix*), and a small sketch plan which may be convenient for lithographing (*Vide Appendix*). With regard to the quantity of land likely to be resumed I may say that No. 1 route goes through 103 chains of private land, and the No. 2 route through 41 chains of private land, and the No. 3 route through 156 chains of private land. On the first of the three routes we shall require 58 chains of Crown land exclusive of railway reserves, on the No. 2 route no Crown land, and on the No. 3 route 165 chains of Crown Land. I have no estimate of the value of the land referred to, but it would be a very small item.

2. The Committee are to understand that the proposal put forward by the Commissioners is the one that they intended to have carried out had not this work been sent on to the Committee? All I can say is that the No. 1 scheme was the route they suggested in the report handed in, but they have since given an intimation that another route may be found.

3. Having passed the matter over to the Construction Branch with the recommendation of what they consider to be the best scheme for doing away with the Zigzag, how can they now bring forward an alternative scheme. Does not the duty of discovering alternative schemes devolve upon the Construction Branch? The Construction Branch would, undoubtedly, have to bring forward any alternative scheme.

4. We may now look upon any further project from the Railway Commissioners as somewhat of a rival to the proposal of the Construction Branch? I should not put it in that way, because I am sure that if the Commissioners found a better line, the Minister would be prepared to recommend its adoption. At present we do not know that there is such a line.

5. Did the Commissioners in the first instance consult the Constructing Branch as to whether, in their opinion, they were adopting the best route? I think not. I imagine that at that time they supposed that they would have to carry out the work themselves, as they carried out the Lapstone tunnel.

6. They did not avail themselves of any knowledge which the Construction Branch might have had as to a better route? I believe that Mr. Deane has been in communication with the Commissioners for some time past; but I am not in a position to say whether they actually consulted him before they propounded the scheme. Mr. Deane himself will be able to give you information on that point.

7. You propose to leave it to the Commissioners, or their representatives, to give evidence as to the necessity of this work from a commercial point of view? Quite so. It is not like a new railway, the recommendation of which we should have to justify ourselves. This proposal has been brought forward at the request of the Commissioners, who will put before the Committee the commercial reasons for suggesting an alternative line.

8. Has there been any official communication between your Department and the people of Hartley, with regard to another deviation? I believe that there have been such communications, but I do not think they were in writing. I know that Mr. Rock has seen Mr. Deane in connection with his scheme, which is shown very roughly on the plan which I have before me.

9. Have you had any official communication with Mr. Rock, or from the people of Hartley? I am not aware of any, except verbal communications.

10. Is there any reference to the matter in the *précis*? No; because we are not bringing Mr. Rock's scheme before the Committee. His line would go from Mount Victoria to Hartley Vale, and the length of it would be about 14 miles.

11. Has Mr. Gipps' project, the details of which were laid upon the table of the House some time since, to run a line of railway up the Cox Valley, come before your Department officially in any way? Yes; but I have not brought any of the papers connected with that proposal.

12. Mr. Gipps' scheme was to avoid crossing the mountains by taking the railway from Blacktown to Blayney along the Cox Valley? Yes; and Mr. Price, an officer of our Department, was instructed to report upon the scheme. His report was laid upon the table of the House on the 5th November, 1890. In it he says—

As the result of my investigations I have arrived at the following conclusions:—

- (1.) That it is necessary to take steps to relieve the congestion of traffic on the Mountain section of the Western Line.
- (2.) That the Blacktown-Blayney Line would not divert a sufficient proportion of the traffic to give permanent relief, or the saving in working expenses and wayside traffic be sufficient to justify its construction.
- (3.) That the traffic-producing districts opened up by the Blacktown-Blayney Line could be more economically served by branches from the main line.
- (4.) That the line from Richmond to Eskbank would divert fully half the traffic of the whole Western system, and therefore its point of connection is geographically correct.
- (5.) That the ruling grade of the Richmond-Eskbank Line would be so little superior to that of the present line that the consequent working expenses would be a little reduced.
- (6.) That the saving in working expenses on the Richmond-Eskbank Line, together with the wayside traffic, would not pay interest on its cost of construction.
- (7.) That it would be more economical, and better serve the interests of the country, to duplicate the present track and construct branches than to make either the Blacktown-Blayney or Richmond-Eskbank alternative line.
- (8.) That the construction of a branch from Liverpool to Mulgoa and from Perth to Rockley is well worthy of consideration.
- (9.) That the extension of the Richmond Line into the Kurrajong would eventually pay interest on the cost of the construction of a cheap railway, and, therefore, no permanent concessions should be granted to any private company.

13. *Mr. Neild.*] Have you any particulars with you as to the grades on the line between Mount Victoria and Glenbrook? No; but if you wish for the information I will ask Mr. Deane to have a table prepared showing the grades all along the line.

14. I understand that the "green" route—No. 3—possesses the best grade, and, roughly speaking, contains about the same length of tunnelling as the "red" route? Yes.

- J. Barling, Esq.
6 Mar., 1894.
15. The "red" route—No. 2—possesses a better grade than the No. 1 route? Yes, if you include the deviation.
16. And is the cheapest line of the three? Yes.
17. The Commissioners' line—the No. 1 route—has the worst grade, and would cost the most money, besides being at a disadvantage in having a tunnel 1½ miles long, which would be a longer tunnel than any we have in the Colony at the present time? Yes; I do not think we have a longer tunnel than that.
18. But it is the shortest route? Yes.
19. The No. 2 route comes next in length? Yes, as regards new construction but not as regards through distance.
20. And the No. 3—the official route—is the longest? Yes, as regards new construction.
21. I suppose the lengths you have given are the lengths that have to be constructed, apart from any of the existing line that may be taken in? Yes, quite so.
22. You propose to destroy the existing line by taking up the permanent way, and to abandon it? The Commissioners will be able to answer that question.
23. Have representations been made to the Department to the effect that if one of the proposed routes is adopted rather than another, claims for compensation will be made? Yes; a claim has been made by Mr. Reynolds for a very large amount. The matter is referred to in the *précis*.
24. And if one of the routes is carried out in preference to the others, private owners will give their land free? I think there have been such offers as that.
25. Is the fact disclosed in the statement which you have just handed in? I am not sure; but the value of the land is really so small that it is hardly worth taking into consideration.
26. I suppose the "green" route will be the best from a tourist's point of view? Do you mean as regards the scenery along it?
27. Yes? I cannot answer that question as I have not been over the ground.
28. Mr. Hoskins.] On what grounds has the claim for compensation, to which you have referred, been made? I have not gone into the matter; but I suppose it is made on the ground that the railway will be taken away from the claimant's property. The whole thing strikes me as very absurd.
29. Mr. Humphery.] On the 25th January, Mr. Deane asked for a further survey;—has that survey been made, and, if so, who made it? The survey in question was made by Mr. Cumming and Mr. Kennedy.
30. Has any route been recommended as the result of that survey? Yes; the "green" route is the outcome of the survey to which you refer.

WEDNESDAY, 7 MARCH, 1894.

Present:—

JACOB GARRARD, Esq. (CHAIRMAN).

The Hon. WILLIAM HENRY SUTTOR.

The Hon. JAMES HOSKINS.

The Hon. FREDERICK THOMAS HUMPHERY.

The Hon. JOHN DAVIES, C.M.G.

The Hon. WILLIAM JOSEPH TRICKETT.

THOMAS THOMSON EWING, Esq.

WILLIAM CHANDOS WALL, Esq.

WILLIAM MCCOURT, Esq.

JOHN CASH NEILD, Esq.

EDWARD WILLIAM O'SULLIVAN, Esq.

CHARLES COLLINS, Esq.

The Committee further considered the proposed deviation to avoid the Lithgow Zigzag.

Hugh McLachlan, Esq., Secretary to the Railway Commissioners, sworn, and examined:—

- H. McLachlan, Esq.
7 Mar., 1894.
31. Chairman.] Are you prepared to make a statement on behalf of the Railway Commissioners giving their reasons for proposing this deviation? I may say in reference to this matter that the Chief Commissioner, a few days ago, had an interview with the Minister for Works concerning the deviation proposal, the outcome of which was the following letter:—

Office of the Railway Commissioners of New South Wales, Sydney, 2 March, 1894.

The Honorable W. J. Lyne, M.P., Minister for Public Works,—

Referring to the conversation the Chief Commissioner had with you yesterday in regard to the proposals for cutting out the Lithgow Zigzag, as intimated, another scheme which has special features of advantage in connection with it, has for some weeks been under examination by the officers of the Department; but owing to the great natural difficulties of getting over the country (the surveyors having to cut their way through the very dense bush), the plans are not in such a forward state as would enable us to say that the proposal is one that we can submit to the Public Works Committee for consideration, but for what can be seen of it, it will work out satisfactorily.

We should, therefore, be glad if it could be arranged for the Public Works Committee to postpone their investigation of the subject for a few weeks, until the proposal is further advanced.

E. M. G. EDDY, Chief Commissioner.

W. M. FEHON, Commissioner.

CHARLES OLIVER, Commissioner.

That letter deals with the second proposal of the Commissioners. In regard to their first proposal they addressed a letter, which was practically the initiation of the matter in a definite form, to the Minister for Railways, on the 24th November, 1893. It was a joint letter, signed by the three Commissioners.

32. That letter has been placed before us, and the Committee wish to know the commercial reasons for recommending the proposal? I was going to say that the Commissioners, in the last paragraph of the letter I have just read, asked the Minister for Works if he could arrange for the postponement of this inquiry for a few weeks.

33. We want to get back to the starting point;—what was the reason for bringing forward the project in the first instance? Unfortunately I am not in a position to give any evidence on that matter to-day, because the Commissioners anticipated that the inquiry would be postponed until their second scheme could be worked out. I have not consulted them, or had any interview with them in regard to the inquiry.

34. Did not the Commissioners mature a certain scheme, known as No. 1, which was to cost £225,000, and every detail of which had been worked out;—that is the project which has come before us, and we want to know why it was put forward? The Commissioners now think that they have got a better scheme.

35. But we want to know why any deviation was suggested? The Commissioners recommend the deviation on two grounds—the economical and the safe working of the line. Unfortunately, however, I did not think the matter would be taken up to-day, and, therefore, I have not had an interview with the Commissioners in regard to it. I presume that you would like to have their evidence, not mine; but at present I cannot give you their views.

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36. Are the Commissioners away now? The Chief Commissioner is, and I think this is a matter upon which all the Commissioners would like to confer.

37. Are we then to understand from you, the mouthpiece of the Commissioners, that, although they were prepared to go on with a certain project, they had really decided upon it without holding any consultation at all amongst themselves? Not at all; because they made a minute which contains their reasons for recommending it; but they now think that they can, if a slight delay is granted, obtain a better route, which will save perhaps £50,000 or £60,000.

38. Will you read their first letter? Yes; it is as follows:—

Office of the Railway Commissioners of New South Wales, Sydney, 24 November, 1893.
To the Hon. John See, M.P., Minister for Railways,—

Lithgow Zigzag.

Ever since we have been in office the great disadvantage of passing traffic over what is known as the Lithgow Zigzag, on the western side of the Blue Mountains, has been continuously before us, as well as the continual risk in the working, consequent on trains loaded with passengers having to be propelled, both up and down, over the intermediate section of the Zigzag.

The cutting out of the Lapstone Hill Zigzag, on the eastern side of the Blue Mountains, has so greatly facilitated the working that we feel that we are justified in asking the Government, when dealing with the question of expenditure in connection with public works, to consider the expediency of providing sufficient money to carry out an alteration of the line to permit of the Lithgow Zigzag—which is a great obstruction to the working of the traffic on the western side of the mountains—being avoided. The work would in all ways be beneficial, and more than return interest on the capital expended.

Various schemes for effecting this object have been under our consideration for a considerable time past, but the cheapest and best plan which we have had before us is one for leaving the existing line at a point near Dargan's Creek, about 86 miles 48 chains, and proceeding by a route through cutting and tunnel north of the existing main line to the bottom points of the Zigzag, where the existing double line of railway would be connected with. This line would be 2 miles and 53 chains in length, 1 mile 52 chains being in tunnel. It is proposed the line shall be a double one, because of the difficulty of properly ventilating so long a tunnel if only a single line is constructed. The gradient through the tunnel would be a continuous ascending one, from the bottom points to Dargan's Creek, of about 1 in 50, the existing line being on varying grades of 1 in 33 and 1 in 42. The 1 in 33 grade is against trains going to the west, and extends from Dargan's Creek to Clarence Siding, a distance of 1 mile 32 chains, and is a great obstruction to the whole of the traffic going from Sydney to the west. This would be entirely got rid of by the proposal, and thus materially assist the working of the western-going traffic.

The estimated cost of the whole work is about £225,000, which, at 4 per cent., would be an annual cost of £9,000; but it is estimated that, in addition to the great facility to the working and the avoidance of the continual risk which now takes place, the expenses would be reduced by about £10,000 per annum, so that, as a commercial investment, the money would be well spent.

It may be pointed out that nearly the whole of the money would be expended in labour, as, with the exception of the rails and machinery required for the work, the whole expenditure would be for excavation and construction.

There are several other smaller grades on different parts of the line, and also some curves on the Blue Mountains, the cutting out of which would greatly facilitate the working, and we would be glad if the Government could see their way to obtain a vote from Parliament for the sum (including the £225,000 previously mentioned) of £250,000 on account of the grades and curves.

The construction of the tunnel would occupy from eighteen months to two years, and therefore the expenditure of the £250,000 would be spread over a period of quite two years.

Attached hereto is sketch plan showing the route of the existing line and of the proposed line.

E. M. G. EDDY, Chief Commissioner.
W. M. FEHON, Commissioner.
C. OLIVER, Commissioner.

39. We understand from that letter that the Commissioners came to the conclusion upon the reports of their officers, and also as the result of their own observation, that it would be desirable, on the ground of safe and economical working, to do away with the Lithgow Zigzag if possible? Yes

40. With that object in view, they instructed their engineers to prepare plans of suitable routes? Yes.

41. Several were submitted, but eventually they decided to adopt what is known as the No. 1 route, at a cost of £225,000? They recommended that route three or four months ago as the best before them at the time; but since then what seems a better scheme has been brought under their notice, the details of which are not quite complete, although it seems to have advantages over the first scheme, and they would, therefore, like to put it before you. A few weeks' delay does not seem to them to be a very great matter.

42. As a matter of fact, were not the Commissioners prepared to carry out this project when the Cabinet stepped in and decided that the work should be carried out by the Construction Department? I could not say anything as to that.

43. In the minute which you have just read the Commissioners say that they are prepared to carry out the work? They would recommend it, but I do not know who would carry it out.

44. As a matter of fact, are you not aware that it has been decided by the Cabinet that the Construction Department are to carry out this work? No; I do not know what has been done.

45. Is it not a fact that the Works Department have requested the Commissioners to hand over all plans, sections, &c., in connection with this proposal to the Construction Branch? That request has not been made to my knowledge. I know nothing of the details of this matter, because I did not anticipate any examination, and I have not spoken to the Commissioners in regard to the evidence they wish me to give.

46. Have you been on leave lately? Yes; for three weeks.

47. Therefore, you are not acquainted with the details of this matter? That may account for my not having seen some of the letters going through.

48. Is there no record in your office of the Commissioners having been informed by the Construction Branch that they are to carry out the work, and, therefore, that all plans, &c., in their possession must pass over to the Construction Branch? I have not seen any such letter; but, of course, if a request were made, it would go before the Commissioners officially.

49. May I direct your attention to the *précis* of the case put before us by the Under Secretary;—after reciting the minute to which you have just referred, and in which the Commissioners inform the Colonial Treasurer of the desirability of cutting out the Zigzag, Mr. Barling goes on to say,—

The Minister for Railways referred the matter for the advice of the Attorney-General as to whether the work could be carried out without reference to the Public Works Committee. On the 23th of December the Honorable C. G. Heydon submitted

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submitted his advising, and stated that he had come to the conclusion that the work need not necessarily be referred to the Parliamentary Standing Committee on Public Works, and for this opinion he gave his reasons at length. The matter was referred to Cabinet on the 2nd January, 1894, and it was then decided that the matter should be referred to the Public Works Committee as soon as convenient. The necessary resolution was accordingly, in pursuance of this decision, submitted by Mr. Secretary Lyne to Parliament on the 25th January, and duly passed. In the meantime the sum of £250,000 for the work was noted for placing on the Loan Estimates. In a minute of the 8th of January, 1894, the Minister stated that the Cabinet had decided the work should be carried out by this Department, and he directed that the Railway Commissioners should be asked to forward, for the use of the Engineer-in-Chief for Railway Construction, the plans and sections they had taken in connection with the matter. A letter to this effect was accordingly addressed to the Commissioners for Railways on the same date —

You know nothing about that? I do not recollect anything about it. The Commissioners made no claim to carry out the work themselves.

On the 22nd of January the Railway Commissioners forwarded, in compliance with the request which has been made to them, plans, sections, &c., in connection with the scheme which they proposed. They also forwarded a report from Mr. Foxlee, accompanying the plans, &c., in which he stated that the estimated cost of the deviation proposed by him was £225,000, exclusive of land and fencing. That the length of the proposed deviation was about 2 miles 33 chains, the ruling grade 1 in 50, and the sharpest curve 12 chains radius. The tunnel would have a length of about 2,840 yards. In forwarding the plans, the Commissioners wrote the following minute: "As the scheme is one that has been devised and worked out in detail by Mr. Foxlee, the Commissioners think that he should be associated with Mr. Deane in the carrying out of the work." With regard to this, Mr. Secretary Lyne minutes the papers as follows: "Divided authority in such a matter as this would not do at all, and there is certainly some error regarding the 'complete devising and working out of the plans by Mr. Foxlee.' I have no doubt that Mr. Deane will consult Mr. Foxlee, if he considers it desirable, upon any special point that may present itself to him."

50. Is it not rather strange that you are not aware of the facts which are mentioned there? I was not in the Colony at the time, and I have not familiarised myself with the case.
51. In the absence of the Chief Commissioner, have you communicated with his colleagues in regard to this matter? I mentioned to them that I had a letter from the Public Works Committee, asking me to go before them, and they referred me to the letter which had been sent to the Minister on the 2nd March, asking that the inquiry should be postponed, which seems to them such a reasonable request.
52. That is not the point;—the Commissioners decided upon a certain work, and, presumably, had it not come before this Committee, they would have gone on with it before now? No; they simply say that, if the work was to be carried out, they would like Mr. Foxlee to be associated with Mr. Deane in carrying it out.
53. We are to understand that, owing to the absence of the Chief Commissioner, his colleagues have instructed you to say that they are not in a position to give any further information? I did not say that at all.
54. You tell us that you are not in a position to give any information on the matter? Yes.
55. Then what does your answer amount to? It is simply this, that the Commissioners thought that the inquiry would be postponed, and the Chief Commissioner went away with that belief.
56. Are you not in a position to give the reasons of the Commissioners for proposing a deviation, irrespective of what route may be chosen? No; I am not, at the present time.
57. Did they come to their conclusion from the reports furnished to them by their Traffic Manager, their Locomotive Superintendent, or by whom? I can only repeat that, anticipating that the reasonable request of the Commissioners for the postponement of the inquiry would be complied with, I have not gone into the matter at all.
58. Does not what I have read to you from the *précis* prove that this matter has gone out of the hands of the Commissioners into the hands of the Public Works Department; that being so, what have the Commissioners to do with it, except to explain their reasons for suggesting the deviation? If the matter is entirely out of the hands of the Commissioners, why should they be called upon to give evidence in regard to it. The first scheme that was put before them was to cost over £300,000, but with that they were not satisfied, and said, "Make it less." The cost was then brought down to £225,000, and now they think that it can be brought still lower. I should think it would be the object of the Committee to assist the Commissioners in getting a cheaper route.
59. It is not for you, Mr. McLachlan, to advise the Committee. As a matter of fact, you say the first proposal put before the Committee was to cost over £300,000? Yes.
60. Did they at that time make any definite proposals to the Minister for Railways? No.
61. It was not until they brought the cost down to £225,000, and had had all the details of the scheme worked out that (*vide* minute) they put it before the Minister? Yes.
62. You cannot tell us whether, at that time, they intended to carry out the work themselves? No; I cannot.
63. You stated that, owing to the absence of the Chief Commissioner, neither his colleagues nor yourself are quite ready to place the facts of this proposal before us? I did not say that. What I said was that the Commissioners had sent a memo. to the Public Works Department asking for the postponement of the inquiry, and, anticipating that their request would have been complied with, I have not come prepared with any evidence.
64. But, as a matter of fact, you were summoned to give evidence on this matter, in spite of the memo.? Certainly.
65. Was that not sufficient notice that the whole matter would be gone into? Not under the circumstances, because the Commissioners considered that the position is to some extent altered by information which has been placed before you since, I think, the date of your letter.
66. It does not matter what route the proposed deviation is to take—whether you take the trains up in a balloon, or go down to the very centre of gravity—there must be reasons necessitating a deviation, and these reasons you are not in a position to give us? No.
67. Do I understand that when the Chief Commissioner returns you will, after consultation with him, be in a position to give us the reasons for the proposed deviation? Yes. I do not say the Chief Commissioner necessarily; but this is an important matter, upon which all three Commissioners would like to confer before directing me to give evidence.
68. When will the Chief Commissioner be back? He will be back early next week.
69. Will he not be back on Friday? I am not certain. I do not think that he will be back until Saturday or Monday.
70. If we postpone your evidence until Wednesday next, an opportunity will be presented to the Commissioners of conferring together, and you may obtain the result of their deliberations? I think so; the Commissioners

Commissioners wish to put pretty complete evidence before you, and they intend to ask you to call leading officers who have gone into the matter from the locomotive point of view, from the traffic point of view, and from the engineering point of view. I think that the evidence which the Commissioners are prepared to put before you will be very full.

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71. *Mr. Hoskins.*] I wish to ask you if, when you are next examined, you will, if possible, furnish us with information in reply to the following questions:—What number of accidents have taken place at the Zigzag since the line was opened to traffic: what number of persons were injured therein; what was the nature of the injuries to individuals caused by the same; and the amount of compensation paid by the Government in each case; what was the damage caused to the rolling-stock by each accident, and what expense was incurred in repairing damages? Yes; I will do so.

72-3. *Mr. Humphrey.*] I should like some additional information in regard to the Lapstone Zigzag—the cost of the deviation, including everything, and the saving effected by the Department in working the line during the year 1893.

Henry Deane, Esq., M.I.C.E., Engineer-in-Chief, Railway Construction Branch, Department of Public Works, sworn, and examined:—

74. *Chairman.*] How long have you been connected with the Department? A little over fourteen years.

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75. You were not engaged upon any portion of the Great Western line over the mountains? No.

76. It was all constructed before you joined the Department? Yes.

77. You are familiar with all the various projects that have been put forward for the purpose of avoiding the Zigzag? Yes; and I have been over the country myself with the surveyors, and have examined it carefully.

78. You furnished a statement to the Minister for Works showing the actual cost of the existing line from Dargan's Creek to the lower points of the Lithgow Zigzag? Yes.

79. You also made an estimate of what it would have cost to construct a tunnel somewhat similar to that suggested by the Commissioners in their scheme for a single line, and also for a double line? Yes.

80. I think you estimated that at the prices then ruling, a tunnel for a single line would cost £321,862, and for a double line, £445,055? Yes; I believe those are the figures.

81. Are there no records in your office to show whether the desirability of making a long tunnel instead of constructing the Zigzag was ever considered? No; I think not. There is nothing earlier than Mr. Targett's first proposal. I understand—but I only speak from hearsay, because I was not in the Department at the time—that a tunnel was not contemplated in those days, because it was considered impracticable, and would have taken too long to make.

82. They had very much less efficient means of making tunnels in those days than they have at the present time? Yes.

83. We understand that there is a grade of 1 in 33 between Dargan's Creek and Clarence Siding? Yes.

84. Was it because of the expense of constructing tunnels in those days that they left that severe grade? I expect it was that they thought that as there was a 1 in 33 grade on this side of the mountains, a similar grade there did not matter.

85. That grade could have been got rid of by making the Clarence tunnel longer? No; by lengthening the line before getting to the tunnel. I have no doubt that they adopted the present line because it was the shortest.

86. A *précis* has been furnished to the Committee by the Under Secretary showing the connection of the Department with these various proposals; I understand that the first line suggested by the Department was one proposed by Mr. Burge, which left the existing line at about 9½ miles, and went in a more northerly direction than any of the lines shown on the plan? Yes.

87. Another route was put forward, going in a very similar direction, but a few chains shorter? Yes.

88. How long is it since the Commissioners proposal—the No. 1 route—was put before your Department? I could not tell you the exact date. I think I got the plans just about the time, or a little before the time, when the matter was being brought before the Assembly. It is only very recently.

89. Your action on receiving instructions, and examining the plans, was to say that the line could be improved, I presume? Yes.

90. I understand that the first alternative proposal that suggested itself to you and your officers was what was known as the No. 2 route? Yes; that is the "spiral" route.

91. It leaves the existing line at the top of the Zigzag, and by a series of tunnels joins it again at the lower points? Yes.

92. There is also a deviation on the eastern side of Clarence tunnel to escape the 1 in 33 grade? Yes.

93. Since then you have had officers in the field surveying the No. 3 route? Yes; I have had both the "red" and the "green" routes surveyed.

94. You put the "green" route before the Committee as the one you prefer above both the others? Yes; I prefer it, because it has better grades and short tunnels.

95. Will you give us, concisely, your reasons for preferring the "spiral" route to the No. 1 route, and for preferring the No. 3 route to both the No. 2 and the No. 1 route? I do not make any comparison between route No. 1 and No. 2. Of course, the No. 2 route has the advantage that it is the cheapest way of getting rid of the Zigzag; but I am not prepared to say that it is a better route than No. 1, except in that particular, and because the tunnels are shorter. Instead of there being a long tunnel of nearly 1½ miles, as on the No. 1 route, you have three tunnels, the longest of which is a little over half-a-mile. The No. 2 route is put upon the plan more as a matter of history, to show the Committee the various steps of the investigation; but my attention has been turned particularly to the No. 3 route.

96. Will you give us a comparison of the No. 3 and the No. 1 route. The Committee does not require you to discuss the policy of making a deviation, or to deal with the matter from a commercial point of view? It is the custom in most countries to get an opinion from the engineer in such matters; but I am not in a position to give you such information, so that, should the Committee ask me for an opinion on the subject, I should be obliged to decline to give one. There is one little matter, however, to which I might refer, and it is a traffic consideration affecting the No. 3 route. That route is 2 miles longer than the No. 1 route, and will, therefore, be apparently more costly to work, because every train would have to go over 2 miles of line more than on the No. 1 route; but, in comparing the two routes, it would be unfair

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unfair to debit against the No. 3 route the full cost of the train mile set down by the Commissioners—4s. 7½d. according to the last report of the Commissioners—because that includes central expenses, office expenses, management and so on, whereas no extra expenso has to be incurred on that score where it is a mere question of lengthening the line by a couple of miles. The trains will merely have to run two additional miles over easy gradients and under the best possible conditions. There will be no stations to stop at, so that it will be merely a question of adding an extra five or six minutes to the journey, and that cannot cost very much.*

97. In other words, you say that the No. 3 route should not be debited with twice 4s. 7½d. a mile for running expenses, but with a lesser amount, because there are no sidings, stations, or anything of that kind upon it? Yes. The trains would only have to run another 2 miles on flat grades. There would be no extra station staff or central staff required for the working of these 2 miles, and if they were cut out the Commissioners would not receive less than they receive now, nor would any of the office staff, while there would be no fewer station hands—porters, clerks, and so on—required. All that would happen would be that the locomotives would take five or six minutes more to run from point to point, and you would have to estimate the value of the services of the driver, firemen, and guard for that period.

98. Would not a train do the distance in less time because of the grade being flatter? Well, I am putting the worst possible case. There is one charge, however, that will make a definite increase, and that is the maintenance of the permanent way. Mr. Foxlee informed me that the cost of maintaining the permanent way between Penrith and Wallerawang was rather heavy, and I can understand that it is, because, with the heavy grades, the trains going down with the brakes on, drag the road about, and the climatic conditions may possibly be against the line. On the other hand a great deal of the road is old, and some of the old ballast has never been renewed, and consequently the line has frequently to be picked up and repaired. If a new line were made, the maintenance charges on it would be comparatively small. Then, on the No. 3 line, the ruling grade is 1 in 60, as compared with a ruling grade of 1 in 50 upon the No. 1 line. Now I think a tunnel on the ruling grade is to be avoided, because the tendency is to load up the trains and give the locomotives as much as they can possibly drag behind them, and consequently, on the ruling grade, tunnel, or no tunnel, their power will be strained to the utmost, and there will then be the maximum consumption of coal, and the maximum products of combustion given out, which, happening in a tunnel would tend to foul it very much. In most of the long tunnels in the world the grades are easy, and where any trouble is caused by the smoke, ventilating apparatus of some kind or another has been adopted. Ventilating shafts, however, have not proved very efficient, and I do not think they would be altogether a success in this case. But it will be clear that, whatever difficulties might be caused by smoke, and the want of ventilation in a long tunnel on the ruling grade, such difficulties would not exist in a much shorter tunnel—a tunnel of less than half a mile in length, on a grade less than the ruling grade, namely 1 in 60.

99. Where does the 1 in 50 grade come in on any portion of the old line? One in 50 towards Sydney is practically the ruling grade between Eskbank and Sydney, because, although there is a 1 in 42 grade from Eskbank, an additional engine is used to work it. Even if the long tunnel scheme were adopted, an additional engine—so I was informed by the Chief Commissioner—would still be used to help to get the load up the incline. One in 50 is practically the ruling grade for a single engine.

100. A second engine would be used on the lower Zigzag in any of the projects? Yes; unless the load were regulated for a 1 in 42 grade. Another possible difficulty in connection with a long tunnel is the greasiness of the rails—that condition of the rails when they are neither thoroughly wet, nor quite dry. That would be against having ruling grade in the tunnel.

101. Can you tell us the length of the 1 in 42 grade on the Lithgow side? About 1½ miles. It starts at about 93½ miles. Another reason for preferring short tunnels is the lighter cost of the work, and the less time it would take to complete it. The probability is that a long tunnel like that on the No. 1 route would take a year longer to construct than the tunnels on the No. 3 route, the earthworks included. In fact, the whole line would probably take a year longer. That, of course, would mean, if a saving of £10,000 a year is to be effected by doing away with the Zigzag, that £10,000 would be lost—that £10,000 which would be saved if the No. 3 route were carried out, would not be saved if the No. 1 route were carried out. I went into a calculation as to the time it would take to make these tunnels, and I found that at the Otford tunnel, which is a long tunnel for a single line, the progress of the heading was about 1½ chains per month at each face, so that it is very easy to calculate how long the work would take in this case. After the heading has been done the general section of the tunnel has to be broken down, and then there is the lining to do. The Otford tunnel took over three years to construct, but there was some delay in connection with the supplying of the bricks.

102. What is the length of the Otford tunnel? It is nearly a mile long.

103. What is the length of the longest tunnel on the No. 3 route? Seven hundred and sixty-eight yards. In making a comparison between route No. 3 and route No. 1, I should have to criticise route No. 1 to some extent, and that I do not think it would be fair to do. I think the No. 1 proposal has been worked out in a proper manner, and is a very good line as far as it goes. The only objection I have to it is the formation that it is laid to. It starts on a 1 in 42 grade, which I think is a pity. The 1 in 42 grade at present terminates at the points, but in the No. 1 proposal it is carried on through the short tunnel up to the face of the long tunnel. That might very well be obviated, but at an increased cost. If I had been laying out the line I should have started the 1 in 50 grade for the top of the grade at the lower points, or I should have continued the 1 in 66 grade that is shown on the plan.

104. But there is no 1 in 66 grade on the lower points now? Not below the lower points; but there is a grade of 1 in 66 on the tongue of line which is common to the two lines. In the Commissioners' scheme it is proposed to raise that 1 in 66 and continue the 1 in 42 up from the points. It is not possible to show that on the wall, however. According to their scheme, the 1 in 66 will be done away with. 105. It will be made 1 in 42, so as to tally with the grade at the commencement of the tunnel? Yes.

106. How far does it continue into the tunnel? Right through the short tunnel, up to the face of the big tunnel—14 chains.

107. Does that include a grade of 1 in 66? Yes; it is 14 chains from the lower points of the Zigzag up to the face of the big tunnel.

108. That is where they begin the 1 in 50 grade? Yes; at the face of the big tunnel.

109. They carry that grade right through the long tunnel? Yes.

110.

* Note (on revision):—See Wellington on Railway Location, 1888 edition, p. 207.

110. There is also a down grade after getting through the long tunnel? Yes; it is 1 in 75.
111. I understood you to say that the proposed ventilators would not act very well? I doubt if they will be altogether satisfactory, and I would sooner have short tunnels. There are many long tunnels which are ventilated with shafts; but the ventilation is extremely unsatisfactory, and many engineers consider that the ventilating shafts are a mistake—that they cause a disturbance of the ventilation of the tunnel. What I am afraid of is that if you construct the long tunnel it may be necessary to use an engine to work a ventilating fan.
112. Is there any other point in the No. 1 proposal which you think calls for criticism? I do not think so.
113. I take it that you do not approve of a grade of 1 in 50 in the long tunnel where the rails are likely to be greasy and wet? Yes; I do not approve of the tunnel on the ruling grade if you can get anything better.
114. But the long tunnel will not be on the ruling grade, because the ruling grade on the Lithgow side would be 1 in 42? Yes; but I have already explained that it is customary to use an additional engine there.
115. You refer to the ruling grade for one engine? Yes. I think that some day or other, if one of these schemes is carried out, the Commissioners will find it desirable to cut out that 1 in 42 grade separately, and, in that case, the tunnel would be actually on the ruling grade.
116. Coming now to the route you propose;—you tell us that it will be 2 miles longer than the Commissioners' route? Yes.
117. And that the aggregate length of the seven tunnels on that route would be equal to the length of the long tunnel on the Commissioners' route? No. Their total length would be 1,674 yards, or less than a mile.
118. What would be the length of the long tunnel? Two thousand eight hundred and ninety-three yards.
119. Would there be any difficulty in ventilating the tunnels upon the No. 3 route? I do not think they will want ventilating. The short tunnels will, of course clear themselves, and I think it will be an easy matter for the long tunnel, which is 4 chains short of half a mile, to clear itself.
120. Do I understand that on both routes provision is made for a double line of rails in the tunnels? Yes. In the estimate which I gave Mr. Barling I did not include the cost of the permanent way, because it seemed to me a little doubtful whether that should be charged against the work. I can, however, give that information to the Committee now.
121. We will take the information later on. Does the Commissioners' line run over an embankment or through a cutting between Dargan's Creek and the long tunnel? There is a little bit of an embankment, but the rest is cutting.
122. Is the embankment and cutting to be wide enough for a double line? Yes.
123. Then all the works upon both routes are for a double line? Yes.
124. You have not merely made the tunnels broad enough for two lines, but every portion of the work upon both routes is for a double line? Yes.
125. You were about to explain the reason why you did not charge the cost of the permanent way in your estimate, although it is included in the estimate of the No. 1 route? I left it to be added afterwards: but I can give it to the Committee now if it is required.
126. What were your reasons for omitting it? I did not quite think that it should be charged to any of the proposed routes, because, although we cannot take up the rails upon the existing line and use them for the deviation, we can, after putting down new rails upon the deviation, take up the rails upon the existing line, and credit the deviation with them, though something, of course, should be charged for the work of taking up the old line and laying down the new line.
127. Will you, for the sake of comparison, give us the estimated cost of the No. 3 scheme, adding to it the cost of the permanent way which was omitted in the first instance, together with the estimated cost of the No. 2 scheme, adding to it the cost of the permanent way? Yes. Mr. Foxlee proposed to use 80-lb. rails upon the No. 1 route, and sandstone ballast, which he reckoned would cost 25s. 6d. per lineal yard, or 51s. for a double line, making the total cost of the permanent way for the No. 1 route £11,668 16s. The No. 2 route is a very short one, and the permanent way on it would cost only £6,507 12s., making its total cost £133,507 12s. The cost of the permanent way on the No. 3 route would be £21,318, which is a larger sum than the others which I have mentioned, because the line will be nearly twice as long, making the total cost £186,318. I do not know if you wish me to refer to the cost of the modification of the No. 3 route, which would have a grade of 1 in 90, because a grade of 1 in 60 would be more economical, and would, no doubt, be preferable.
128. Could you get a 1 in 90 grade all through? The 1 in 90 grade would come out somewhere about the middle of the 1 in 156, and from there it would practically be level as far as Dargan's Creek.
129. What would be the additional cost of that modification? It was given by Mr. Barling yesterday.
130. Would it increase the length of the line? By only 11 chains. I mentioned it because I thought it was just as well that the Under Secretary should include it in his statement. When the line was first suggested to me by the surveyor, and I told him to report upon it, he thought that he could get a 1 in 90 grade all through, the cost of which would not be greater than the cost of the Commissioners' route. It seemed to me, however, that it would be more economical to adopt a grade of 1 in 60; but for the purpose of comparison, and in order to prove the value of the suggestion, I had the cost of the modification worked out. Without the permanent way, I put it down as £200,000, and adding the permanent way, it comes to £221,935. That does not differ materially from the estimated cost of the Commissioners' route—£225,000.
131. But the line would be a little longer, and you would have a 1 in 90 grade as against the 1 in 50 grade? Yes; a grade over which you could run at a high rate of speed.
132. Would you have to increase the length of the tunnels to get the 1 in 90 grade? Yes.
133. To what extent? If I remember rightly the length of the tunnels would be 1 mile 30 chains, though the length of the longest tunnel would not be increased.
134. The length of some of the other tunnels would be increased? Yes; and there would be an additional tunnel at the summit.
135. There are a number of viaducts across the water-way;—how would they be constructed? I do not propose to make any viaducts; I intend to fill up the embankments.

- H. Deane, Esq., M.I.C.E.
7 Mar., 1894.
136. With the spoil from the tunnels and cuttings? Yes. There will be nothing there worse than the banks upon the Hawkesbury line, where at Deep Creek there is an embankment about 100 feet above the creek, the outer side of which runs down to a salt marsh at a depth of about 150 feet.
137. I suppose these creeks do not drain any very large area? No.
138. There is no danger of a bank being washed away by the rush of water? No; and very little provision would have to be made for water. The peculiarity of the eastern ridges is that very often directly you get on to the top they begin to slope back so that practically there is no drainage from the top.

THURSDAY, 8 MARCH, 1894.

Present:—

JACOB GARRARD, Esq. (CHAIRMAN).

The Hon. WILLIAM HENRY SUTTOR.	THOMAS THOMSON EWING, Esq.
The Hon. JAMES HOSKINS.	WILLIAM CHANDOS WALL, Esq.
The Hon. FREDERICK THOMAS HUMPHERY.	WILLIAM MCCOURT, Esq.
The Hon. JOHN DAVIES, C.M.G.	JOHN CASH NEILD, Esq.
The Hon. WILLIAM JOSEPH TRICKETT.	EDWARD WILLIAM O'SULLIVAN, Esq.
	CHARLES COLLINS, Esq.

The Committee further considered the proposed Deviation to avoid the Lithgow Zigzag.

Henry Deane, Esq., M.I.C.E., Engineer-in-Chief, Railway Construction Branch, Department of Public Works, sworn, and further examined:—

- H. Deane, Esq., M.I.C.E.
8 Mar., 1894.
139. *Chairman.*] You come prepared with a statement showing the various grades on the line from Penrith to Dargan's Creek? Yes; I hand it in. [*Vide Appendix*].
140. You also produce a section showing that it is possible to get a 1 in 90 grade on the No. 3 route? Yes; I referred to that route in my evidence yesterday, and the Under Secretary also referred to it.
141. Although it is possible, you do not recommend it—you prefer the 1 in 60 grade? Yes, because it would be more economical; but if I had to choose between the 1 in 90 grade and the Commissioners' proposal, with the long tunnel, I should prefer the 1 in 90 grade.
142. I may add that the total length of the tunnel on the 1 in 90 grade line would be 2,459 lineal yards.
143. There would be more tunnelling on the No. 3 route with a grade of 1 in 90 than with a grade of 1 in 60? Yes. I mentioned that fact yesterday; but I had not the exact particulars with me then.
144. *Mr. O'Sullivan.*] I understand that you propose filling up the gullies between the hills through which you tunnel, instead of constructing bridges or viaducts? Yes.
145. Will there be any danger of the culverts being carried away by floods? None whatever. There will be very little water to be provided for.
146. You will make due provision for carrying off all water? Yes.
147. *Mr. Davies.*] What will be the length of the No. 3 route? There is a slight difference between the comparative lengths and the lengths actually to be constructed. The comparative lengths of line for working are as follows:—Original line, 5 miles 36 chains; No. 1 route, 2 miles 50 chains; No. 2 route, 5 miles 40 chains; No. 3 route, with a grade of 1 in 60, 4 miles 55 chains, and, with a grade of 1 in 90, 4 miles 67 chains.
148. *Chairman.*] In a statement handed in by Mr. Barling the length of the existing line appears as 5 miles 14 chains? I think I can explain how that occurs. The length of the existing line between Dargan's Creek and the lower points of the Zigzag depends a little upon the way in which the ends of Zigzag are reckoned. For the purpose of this comparison I have taken the distance from a certain point at or near Dargan's Creek to the middle of where the trains would stand on the upper points of the Zigzag, and to the middle of where the trains would stand on the lower points of the Zigzag, so in that way the length I have given you is exactly correct.
149. *Mr. Davies.*] In your calculation of the cost of constructing the deviation, have you taken into account the original cost of the 5 miles of existing line which will be abandoned? The cost of the original line was £167,000 odd.
150. What do you estimate the cost of the deviation you suggest, including the tunnels? With a grade of 1 in 60, £165,000, plus the cost of the permanent way for two sets of rails, £21,318, or a total of £186,318.
151. I presume that your estimates are based on prices paid for work of a similar character to that which is being carried on at the present time? Yes.
152. You are of opinion that the deviation could be carried out for a sum not exceeding the amount of your estimate? Yes.
153. I presume that you have examined the No. 1 scheme, and that you have all the sections and plans in your office? Yes; I have also been over the ground.
154. As an engineer, do you think the scheme as practicable as the one you propose? It is quite practicable; but I do not like the long tunnel or the grade.
155. What is the difference in grade? The grade on the No. 1 route is 1 in 50, and on the No. 3 route 1 in 60.
156. You entirely object to the tunnel, which will be $1\frac{3}{4}$ mile in length? Yes.
157. Do you know if it is the practice in the old country now, when carrying out the construction or deviation of railways, to do away with tunnels where it is possible to get another road? I am not aware of that; but I know of tunnels being made to shorten lines.
158. But not tunnels anything like so long as this tunnel? The big tunnels through the Alps—the Mont Cenis and the St. Gothard tunnel—you may take as attempts to shorten lines, and so also is the Severn tunnel.
159. Have you any idea of the length of the tunnels to which you refer? The Severn tunnel is about $3\frac{3}{4}$ miles long; the Mont Cenis tunnel is about 8 miles; and the St. Gothard, about $9\frac{1}{2}$ miles.

160. I gathered from your evidence yesterday that it was impossible to properly ventilate long tunnels? I referred to tunnels on the ruling grade. One in 50 would be the ruling grade on the No. 1 route, and although the proposed tunnel is very much shorter than many of the long tunnels in the world, I am afraid it would be exceedingly difficult to ventilate it properly.

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161. Do you know how they effect the ventilation of the long tunnels to which you have referred? Sometimes by fans, sometimes by forcing in air. In the Mont Cenis tunnel they force in air, but the system is not very satisfactory. The natural currents that are produced under certain conditions of the atmosphere seem to clear the tunnel better than anything else.

162. Have there been great complaints about these long tunnels? I could not give you instances; but I know from hearsay, and from the reports that reach me, that the ventilation of some of the tunnels is very unsatisfactory, even where they have ventilating shafts.

163. I think another objection you had to the proposed tunnel on the No. 1 route was that the rails would be kept wet and greasy by the steam and smoke? Yes; and that would be particularly noticeable with a tunnel on the ruling grade, where the locomotives were being forced to do their utmost. Where a tunnel was not on the ruling grade it would not have the same effect.

164. Suppose the grade were 1 in 60, as it is on the No. 3 route, would the same objection apply? Greasiness of the rails has the effect of lessening the adhesion, and thus reduces the load which a locomotive can draw behind it. On the ruling grade this is a very serious matter, because the engine is then strained to its utmost, but on a grade less than the ruling grade it is not of so much consequence, because there is a margin to spare.

165. What would be the length of the longest of the seven tunnels on the No. 3 route? Seven hundred and sixty-eight lineal yards.

166. What is the character of the formation—is it sandstone? It is all sandstone.

167. Coming down to Dargan's Creek the grade is very steep on the No. 3 route, is it not? A grade of 1 in 61 is shown on the map, but it could easily be modified, and made a little flatter.

168. That would give a ruling grade right through of 1 in 60? Yes.

169. Have you, in your calculation of capital cost, taken into account the value of the rails and sleepers on the existing line which could be used elsewhere? No; I have not.

170. Do you propose to use them in any way, or would they go back to the Commissioners? I think that the cost of the deviation should be relieved of the value of the permanent way materials on the old line.

171. They would be credited to the Construction Department? Some arrangement would have to be made about that. It would depend which store account they were placed in.

172. What weight of rails do you propose to use on the No. 3 route? I have made provision for an 80-lb. rail, because I believe the Commissioners wanted it, and I have taken the prices given by Mr. Foxlee in his estimate of £225,000, so as to make the comparison of more value.

173. Is 80 lb. to the yard the weight of rails generally used on the existing line? I believe that the rails on the existing line are 75 lb. to the yard.

174. Is it necessary to use a heavier rail on a grade of 1 in 60 than on a grade of 1 in 42? I have no particular opinion to express on that subject. As a rule, I prefer a heavy rail to a light one. I consider that the 71½-lb rail which we have been using so much is a very satisfactory rail, and if I had been laying down this line I should have used it, but I see no objection to adopting a heavier rail.

175. If an error, it would be on the right side? Yes.

176. What is the difference in cost per ton between 71-lb. rails and 80-lb. rails? I have no figures with me, but the difference in cost would come to about £100 a mile.

177. I suppose you propose to use the same kind of sleeper as you use now? Yes; on that portion of the line large sleepers are used wherever the permanent way has been renewed, and I think it would be desirable to use them here—sleepers, 9 feet long by 10 inches by 5.

178. Do you provide for the lining of the tunnel with brick? No, I would line the tunnels with concrete at the side, and brick at the top, just as the Hawkesbury tunnels are lined. I think Mr. Foxlee proposes to use sandstone concrete all through; but I should prefer to have brick for the top. I have used bluestone concrete for single-line tunnels; but for double-line tunnels I think brick makes a more satisfactory arch.*

179. Your estimate provides for the lining of all the tunnels? Yes.

180. *Mr. Hoskins.*] What is the length of that portion of the line between the top of the first incline on the Zigzag and the reversing station at the end of it? Do you mean from the summit at Clarence tunnel down to the top points? That would be a little under 3 miles.

181. But the incline at the Zigzag does not commence near the Clarence tunnel. I am talking of the descending gradient at the commencement of the Zigzag? The line falls all the way from Clarence Siding right through Clarence tunnel, with the exception of a short length of level track.

182. What is the length of the second incline on the Zigzag? Roughly, it is nearly a mile.

183. What is the length of the third incline? That is about 1½ mile from the bottom points, down towards Eskbank.

184. Now will you tell me what are the grades on those inclines, and the length of each grade? The principal grade is 1 in 42.

185. On what part of the line is that? The greater part of the upper portion of the line has a grade of 1 in 42. Roughly, there is about 1½ mile of that grade. Then there is about ½ of a mile of 1 in 40, while the rest of the line is made up of two grades of about 1 in 66, and a small length of level.

186. Then the steepest grade on the three inclines is 1 in 42? As a matter of fact, it is 1 in 40.

187. That is only a very short length? Yes; and of very little consequence, because the train could rush it, I think.

188. Having visited the locality a great number of times, and being an engineer of great experience, have you observed that there is any special risk attaching to the working of the Zigzag beyond the usual risk attaching to the working of lines with steep grades and sharp curves? I wish you would excuse me from answering any questions relating to the traffic. I have no doubt that every precaution is taken to minimise the risk. I do not think there have been many accidents there, if that is what you mean.

189. I hold in my hand a return which you have handed in [*Vide Appendix*], giving a list of the grades steeper than 1 in 60 between Penrith and Dargan's Creek, and I find that there is 1 mile 62 chains of 1 in 30, and 13 miles 2 chains of 1 in 33. Those are steeper grades than the steepest grade on the Zigzag, and

* NOTE (on revision):—In any case sandstone concrete is objectionable. I do not allow sandstone to be used myself.

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and I ask you, as an engineer, whether there is any greater risk in working the inclines at the Zigzag, with a grade of 1 in 42, or 1 in 40, than in working other inclines in a grade of 1 in 30 or 1 in 33? No; I do not consider that the so-called risk of the Zigzag is due to the grades at all. Of course, perhaps, the steeper the grade the greater the risk, but the safety of a train depends upon the strength of its couplings, and you can make it as safe upon a very steep incline as it would be upon a flat one.

190. Therefore, if a train is furnished with Westinghouse or other continuous brakes, and the brakes are in good order, there is no greater risk in working the line between here and Bathurst than there is in working a mountain line anywhere else? I did not expect to be examined upon this point; but there is one thing I should like to say. The risk at the Zigzag is not a question of grade. It is due to the fact that trains have to be backed, and especially that they have sometimes to be backed up a hill. When a train is being pulled, the draw-bars are strained in their proper direction; but when it is being pushed up a hill with a steep grade and sharp curves, another set of conditions come in. Where there is a curve, and an engine pushing, the tendency is to drive the train off the road; but where the engine is in front, and is pulling, the tendency is to keep it on the road.

191. Is it not a fact that the inclines at the Zigzag are comparatively straight—that they are only slightly curved? No; they are very much curved.

192. But the long incline from Clarence tunnel down to the first points is pretty straight? No; it is not very straight, as you will see by looking at the map. There are sharp S-chain curves there.

193. Is that on the Zigzag itself? Yes.

194. I find, according to the return you have handed in, that there is one incline of 1 in 33, 1 mile and 26 chains long;—can you say whether long lengths of steep gradients like that have sharper curves than there are on the upper portion of the Zigzag? They have the curves usually adopted on the mountain line—S-chain curves are the sharpest there. In some cases these curves have been cut out; but some still remain.

195. Are there any S-chain curves on the Zigzag? I think I can show you that there are.

196. If one of the reasons for dispensing with the Zigzag is the steep gradients upon it, what advantage should we get from a deviation, seeing that there are upwards of 13 miles of steeper gradients between Penrith and the Zigzag? I think I can explain that. The heavy gradient which is mentioned in the Commissioners' report, and which they specially desire to get rid of, is the 1 in 33 near the Clarence tunnel. In order to get up that incline, trains have frequently to be divided at Bell, the old Mount Wilson platform, but in working the long series of inclines from Emu Plains to Katoomba, the Commissioners make special arrangements, and employ extra hauling power. They make that portion of the line a special section, and run on from there.

197. They use extra locomotive power where there are grades of 1 in 30 and 1 in 33? Yes; and then they run on with less locomotive power as far as Bell. If the 1 in 33 to which I have referred were cut out, they would be able to run on to Eskbank, or even beyond that place. The 1 in 33 grade is so objectionable, because it is the only heavy grade between Katoomba and Eskbank.

198. Could it not be cut out without dispensing with the Zigzag? Yes; by the deviation shown on the map by a dotted red line, at a cost of £19,000.

199. If the inclines on the Zigzag are not excessive, and the real obstacle to the successful working of the line is the gradient of 1 in 33 east of the Clarence tunnel, would it not be sufficient to cut out that gradient without going to the large expense of making a deviation such as you propose? Not altogether; because, although trains might be able to run right through if that gradient were cut out, there would be no room at the ends of the Zigzag for long trains. There would not be room for them to stand there before the points were opened, so that they could go down the lower line.

200. Could not the difficulty be obviated by using some of the spoil from the overhanging banks to make a roadway? It could easily be obviated at the lower points; but it would be a difficult thing to do at the upper points.

201. What would be the difficulty? If you cut through the little bit left at the end of the line there, you would drop into a gorge. The available length there is very small.

202. Could you not make a road by using the spoil from the high banks there? The line would not be safe unless you had a very effective stop-block. There would be a very real danger then.

203. If you lengthened the reverse incline, so that the trains would be reversed with the steep incline against them, would not that arrest their momentum? That would mean an extra length of itself, because, of course, a train would not stand at the reversing place.

204. It would while it was being reversed from one line to another? Perhaps by dropping down the brakes very quickly it might; but I do not think there would be room for that.

205. Even supposing that there is a deep gulch on the other side of the cutting, could not the difficulty be got over by the erection of an iron culvert? No; because you would have to go, perhaps, three-quarters of a mile before you got on to the ground again. The Commissioners in recommending the cutting out of the Zigzag have referred to the cost of working it. There are signal-boxes at both the top and bottom points, and this necessitates the employment of labour and increases the time of running.

206. Will you kindly furnish, as an appendix to your evidence, a statement showing the grades from Dargan's Creek to Eskbank, together with the number of curves and their radius—that is, on the existing line? I will have that information carefully made out.

207. From your knowledge of the working of railways here and in other parts of the world, do you consider that there is less, or that there is more danger in running an ordinarily laden train down an incline of 1 in 50 than in running it down a shorter incline of, perhaps, 1 in 42? I do not think there would be very much difference if you had efficient brakes. The safety of a train depends upon its brake-power.

208. I may summarise your evidence by saying that you do not consider that there is more than ordinary danger with steep gradients and sharp curves, provided a train is properly equipped with continuous brakes? I think so. There is a slight element of danger with sharp curves; but it is surprising how few accidents occur.

209. The curves are got over by adopting different rolling-stock and bogeys? Yes.

210. *Mr. Neild.*] The danger of pushing trains is partly due to the fact that the carriages being lighter than the engine they are more likely to leave the rails when they are in front? Yes; there is a greater chance of lifting.

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211. Is there more risk in propelling trains with one engine pushing and the other pulling than where there is only an engine pushing? Yes; because where there is only one engine, and that is pushing, the risk extends over the whole length of the train. If there is one engine pushing and another pulling you may assume that each engine does about half the work of propelling the train—the hind engine pushes up half the train while the front engine pulls up the other half.
212. So that the risk is minimised? Yes.
213. I suppose on the steep gradients between Dargan's Creek and Penrith, when two engines are used, you have always one pulling? I am not sure how that line is worked, but I do not think that they have pushing engines there, but double engines.
214. You have submitted a modification of the No. 3 route, with a grade of 1 in 90, leaving a little bit of 1 in 60 at the Bathurst end. Is the portion of 1 in 42, which is shown on the first plan of the No. 3 route, cut out? That 1 in 42 grade is not touched by any of the deviations.
215. So that if the 1 in 90 grade were adopted it would bring you up to a piece of 1 in 42 forthwith? Yes.
216. Is there much of the 1 in 42? About $1\frac{1}{2}$ mile below the lower points.
217. Do you know if it is intended to cut out any part of the 13 miles of 1 in 33 between Dargan's Creek and Penrith? No.
218. Has that matter come before you officially? No; it would be a very expensive thing to do, and would mean an entirely new line.
219. So that while it is now sought to get rid of 5 miles of 1 in 40, there will be 13 miles of 1 in 33 left behind? The proposition is perfectly sound. The grouping of heavy grades is a recognised practice in railway management. When heavy grades come together like that, there is not the same objection to them as when they are scattered, because pushing engines can be used to advantage. In the case of the mountain line these heavy grades are near Penrith, and there is only a comparatively short run up to Katoomba and back. If they were scattered all over the line there would be a long additional distance to be run.
220. Is it not proposed to make a considerable alteration in the line at Linden, cutting out the S curve and changing the grade? I do not know what the Commissioners propose to do there; but a great many changes have been made. I started laying out some myself.
221. But this matter does not come before you as Engineer-in-Chief for Railway Construction? No.
222. I think you stated yesterday that it was an open question with engineers whether the introduction of ventilating shafts did not interfere with the natural ventilation of a tunnel? Yes.
223. Are we to gather from that that, supposing the tunnel on the No. 1 route were constructed with direct ventilating shafts, there would be a tendency for the air going in at each end to pass up the shafts, leaving the middle of the tunnel unventilated? That might happen under some conditions of the atmosphere. This is a matter which has been reported upon several times; but there still seems to be great uncertainty about it.
224. Had you anything to do with the construction of the tunnel at Lapstone Hill? I laid out that line, but I did not construct it.
225. You have travelled through the tunnel? Yes.
226. Have you noticed that in certain states of the wind passengers experience a sensation of suffocation in the tunnel? It is very hot sometimes, even if you shut the windows.
227. Have you noticed that the sulphur produced by the combustion of coal has a suffocating effect there? Yes; but it is the same in many other tunnels—Oxford tunnel, for instance.
228. What is the length of the Lapstone tunnel? About 35 chains—770 yards.
229. That would be 2,000 yards shorter than the tunnel on the No. 1 route? Yes; but you must recollect that it is a single-line tunnel.
230. A double-line tunnel would be better ventilated? Yes; the products of combustion would not foul the larger body of air in a double-line tunnel as they would foul the air in a single-line tunnel.
231. You spoke of lining the tunnels on the No. 3 route with brick arches and concrete at the sides;—is there any truth in the popular idea that concrete has a tendency to detach itself from live rock? I do not think it would matter particularly if it did.
232. You think it would be kept in place by the weight of the brickwork? Yes.
233. What would be the thickness of the concrete? Eighteen inches.
234. And of the brickwork? That would also be about 18 inches.
235. The bricks would be set in cement? Yes.
236. Would you use pressed bricks or ordinary bricks? I should use a good, sound, strong brick.
237. You have no preference for the pressed bricks? Pressed bricks look very nice; but some of them are very brittle. If I got a good strong brick I would accept it, even if it were not so pretty to look at.
238. Would the brickwork be set wet or dry? All wet.
239. Do you use mortar for such work? Not lime mortar. There is a great deal of work done in England with lime, but it is hydraulic lime. There is no such lime out here, or at any rate it is not marketable. There is New Zealand lime.
240. If you fill up the gullies with the material excavated from the tunnels, that will minimise the cost of the tunnelling to some extent, because you will not have to remove the debris any great distance? Yes.
241. As a very large portion of the traffic on the Western line, especially as far as Lithgow, is tourist traffic, which of the three proposed deviations would be the best from a passenger point of view? As to comfort, I think No. 3 would certainly be the best, and would give some good views of the Hartley Valley.
242. Do you think the tunnel on the No. 1 route, especially in this hot climate, would be a deterrent to the passenger traffic? I am afraid that the cutting out of the Zigzag will deter many people from travelling down there. At times a good many people travel from Mount Victoria, Katoomba, and those places simply to look at the Zigzag, and if we can give them something in exchange for it that will, perhaps, be so much gained.
243. A tunnel $1\frac{3}{4}$ mile long would be a very bad exchange? Yes.
244. I understand that you do not put the No. 2 proposal forward for investigation? I do not recommend the No. 2 proposal, though I think it provides a very nice method of getting rid of the Zigzag, if that is all you wanted.
245. Would there not be a very sharp curve between the second and third tunnels on the spiral? No; they are all 15-chain curves.
246. Why do you recommend specially large sleepers for this work? Because of the heavy traffic.

- H. Deane,
Esq.,
M.I.C.E.
8 Mar., 1894.
247. Suppose the No. 3 route were adopted, would not the traffic be lighter than it is now? It would; but you would have the same heavy engines going over the line, and it is far better to have heavy sleepers, because they make a safe road. If I had to relay the whole of the mountain line, I would put down big sleepers.
248. You put them down wherever an alteration is made? Yes; if I were making an alteration in any part of the line, I would put down the best class of permanent way as far as sleepers, ballast, and rails went.
249. Notwithstanding that the No. 3 route would cost something like £50,000 more than the No. 2 route, you prefer it? Yes.
250. Do you think that its advantages more than outweigh the additional £50,000? Yes; because it is such an improvement to the line.
251. And the improved grades and reduced cost of the No. 3 route are a very sufficient set-off to the shorter length of the No. 1 route? Yes. I should like to say in regard to the No. 2 route, that although it is much shorter and less expensive than the others, it leaves a great length of the line unduplicated. On the No. 1 and the No. 3 routes a double line is provided for right through.
252. The tunnels are constructed for a double line; but will you lay a double line of rails in them? Yes; that is included in the estimate.
253. And will you lay a double line of rails between the tunnels? Yes; there will be a double line right through.
254. *Mr. Wall.*] Do you regard the mountain line as likely to be the main line of communication to the west in the future? Yes.
255. Reference has been made from time to time to alternative routes up the Colo Valley from Blacktown to Blayney, do you think it likely that these lines will be made? I do not think so;—not as competing lines.
256. Do you know for what distance an additional engine is used in connection with the Zigzag? I think the pusher engines are run up to Clarence Siding and then run back again.
257. Have you any idea of the number of engines used for that work at the present time? No; I have seen no return.
258. Would the construction of the proposed deviation do away with the necessity of employing those engines? They would still have to push the train up to the lower points.
259. Over the 1 in 42 grade? Yes.
260. Do you know how many trucks an engine is supposed to be able to haul on the mountain grades without the assistance of a pushing engine? I would rather you got that information from the Traffic Manager.
261. I presume you have only regarded this proposal from an engineering point of view. You cannot say whether the deviation is necessary as a matter of economy? No; I have not entered into calculations of that kind.
262. I understand that the deviation will save time which is now wasted on the Zigzag, and will avoid danger. Can you tell us what will be gained by the saving of time? No; I cannot.
263. Speaking as an engineer, is there any great risk in running over the Zigzag? I do not think there is very much risk. It is more an inconvenience to the traffic, I should say.
264. You think that the present line is comparatively safe? Yes, if proper precautions are taken.
265. Such as have been exercised in times past? Yes.
266. You think the only advantage to be gained by making the deviation would be the saving in time? Yes; and in hauling power.
267. Is there any advantage in increasing the hauling power of an engine at one particular part of the line when there are steep gradients in several other places? Not if the steep gradients are scattered; but if they are grouped together there is. It is advantageous to cut out an isolated gradient.
268. Do you know the estimated cost of the extra engine power required for goods traffic on the mountains per annum? No; I have no particulars.
269. What saving in distance will be effected by the construction of No. 3 route? Sixty-one chains.
270. And by the construction of No. 2 route? There will be no saving there. The distance is approximately the same.
271. The only advantage to be gained by the construction of No. 2 route would be the lessening of the gradients, and the avoidance of the Zigzag? The avoidance of the Zigzag is the one advantage.
272. What saving in distance would be effected by the construction of the Commissioners' deviation? About 2 miles 66 chains.
273. A little more than 2 miles more than the saving on the No. 3 route? Yes.
274. I understand that the grade on the Commissioners' deviation is 1 in 50;—have you examined the plans and sections of that proposal? Yes.
275. Do you think that the line could be constructed from its starting point to its point of convergence with the main line with no steeper gradient than 1 in 50, the present 1 in 42 grade being done away with? That would make it more expensive, because it would bring the formation lower down.
276. What do you think would be the extra cost? I do not know, because I have not gone into the matter.
277. This 1 in 42 grade would remain, even if either of your proposed deviations were carried out? It is shown on the plan of the No. 2 route; but I do not recommend that route. I have simply put it before the Committee to show a certain stage in the progress of the investigation.
278. Taking into consideration the fact that pushing engines will accompany the trains up the gradient of 1 in 42, while single engines will take them over the 1 in 50 grade, may we not say that the work would be as well performed by two engines on the 1 in 42 grade as by one engine on the 1 in 50 grade? Yes; but I do not know what the Commissioners propose to do in this matter, or how far they will run their pushing engines, but I believe to Dargan's Creek. It would not be absolutely necessary to run an additional engine further than the top of the 1 in 42 grade.
279. Would not a grade of 1 in 50 compare very favourably with other grades on the Blue Mountains? All the other grades in that direction are 1 in 50; but in the tunnel the bad ventilation would be a disadvantage.
280. Would not an engine which could draw a load up the 1 in 50 grade in the tunnel be able to take it over the stiff gradients already existing on the line? Yes; 1 in 50 being the ruling grade, if an engine could

could take a train through the tunnel, it could take it up any other grade on the line, unless there were very unfavourable conditions elsewhere.

281. If an engine could take a train through the tunnel on a 1 in 50 grade, do you think it would be wise for him to lengthen the tunnel in order to lessen the grade? The difficulty of dealing with the smoke would be very great. I think that if it were an open line a grade of 1 in 50 would do very well.

282. The great objection to the Commissioners' proposal is the difficulty of properly ventilating the tunnel? Yes.

283. Do you think it probable that at some future time the mountain grades will be uniformly reduced, or, at any rate, reduced to a very great extent? I doubt if very much could be done in the way of cutting out the 1 in 30 and the 1 in 33 gradients on the eastern side. It looks as if the mountains had actually been made for those gradients.

284. When you speak of the ruling grade on the mountains being 1 in 50, I take it that you include several steeper gradients, which, however, are only short, and which the engines can therefore deal with? I am speaking of the ruling grade in one direction only.

285. Are we to infer that an engine which could take a train up a 1 in 50 grade, could take it over any portion of the mountain line? Yes; in an easterly direction, with the exception of the 1 in 42 grade on the western side of the Clarence tunnel. There is a grade of 1 in 50 on the Sydney side of Dargan's Creek, running for about $1\frac{1}{2}$ miles.

286. Have you any idea as to the cost of running engines per train mile? Over this line?

287. Yes? You could get that information from the Department. The Commissioners, in their last report, say that the average cost of working the railways over all the lines per train mile is 4s. 7 $\frac{1}{2}$ d., and from the report it would be easy to work out what any particular part of the expense of running a train is.

288. What is the distance from the point where the pushing-engine ceases to run now to the point where it would cease to run if the deviation were made? That would depend upon the working of the line.

289. Assuming that it went over the 1 in 42 grade, what is the distance from the 1 in 42 grade to the Clarence siding? The steep grades run up to the Clarence tunnel.

290. But I am supposing that the Commissioners' proposal is carried out? The steep grade will then terminate at the lower end of the big tunnel.

291. I want to ascertain what distance would be saved in the running of the pushing-engines by the construction of the deviation? I should think about 4 miles, unless they run to Dargan's Creek.

292. I take it that the distance from the lower points to Clarence siding would be saved? Yes; from the 88 miles down to near the 92 miles.

293. *Mr. Collins.*] How long has your Department had this matter in hand? Since about the beginning of the year.

294. Do you think you have exhausted all means of getting the best route? I believe that the line I suggest will prove to be the best line; but I gave instructions to Mr. Kennedy, the gentleman who surveyed and suggested the line, to look on the north side of the existing line, because it was suggested some years ago that a line could be taken down Farmer's Creek. When he had run No. 3 line, and had time to go into the matter more fully, he reported to me that some of the Commissioners' engineers were down there, so I left the matter as it stood, only telling him to take a few aneroid levels.

295. Your Department is not working against the Commissioners? I am not working contrary to the Commissioners. I am trying to get the best line for them.

296. If the Commissioners should find a better line, would you adopt it? Certainly; but I think it rather a pity that young men without experience should have been sent out. I am certain that if some of my men had been sent up I could have got reliable information long before this.

297. *Mr. Ewing.*] This is simply a matter of route, is it not? Yes.

298. It is a matter of the best way to get through a piece of difficult country? Yes.

299. Looking at the time-table, you will find the height of Mount Victoria given as 3,422 feet; then we come to Hartley Vale, 3,318 feet; Bell, 3,478 feet; Clarence siding, 3,658 feet; and there you are upon the crest of the ridge? Yes.

300. Then, when you get down to the water of the Cox, you have 3,470 feet at the bottom of the Zigzag, 3,033 feet at Eskbank, 3,006 feet at Lithgow, 2,972 feet at Bowenfels, and then you are on comparatively level country again? You are in the valley there.

301. Your difficulty is to cut out the 588 feet between the crest of the hill and the waters of the Cox? You mean from Clarence Siding down; but we do not start there.

302. I know that; you start at Dargan's Creek? Yes; Dargan's Creek is about 230 feet lower.

303. All the way from Katoomba to Blackheath you are on the watershed between the Colo and the Cox? Between the Grose and the Cox. You only get the Colo River when you come to Bell.

304. But it is the same water. You want to get off that table-land down to the water of the Cox. Now if you follow along the red line marked on the map, showing "constructed lines and trial surveys" which is before you—the trial survey from Richmond to Wallerawang—to near the 90 miles, you have headed the water of the Cox, following it down on the northern side, and that gives you a long run into Eskbank, enabling you to cut out the 300 feet which you now cut out by the Zigzag? That is very rough country, and the range rises along there.

305. But the map appears to show that if there is a route to be found through there it will be found on the northern side of the existing line? I do not altogether see that.

306. I grant that there may be local reasons why such a route would not be practicable, but if you keep on the ridge between the waters, until you get a long run down into Eskbank on the northern side of the creek, you get all that you want? I can see that that looks possible on the map. That is where you would naturally look for a good route, and I believe the matter has been inquired into.

307. You think it has been looked into? I have not the slightest doubt of it from what I have been told, but it was before I had anything to do with the line.

308. You have no personal knowledge of it? That is so.

309. You do not know what caused them to build the Zigzag in the first instance? No; if you called Mr. Whitton I believe he would be able to tell you all about it.

310. You know nothing about a route from Eskbank following up the northern side of the Cox water? Nothing, except this, that generally speaking, the range, instead of becoming lower, rises. There may be some gaps or short saddles through which it would be possible to get, but in the main the country rises.

H. Deane,
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311. What fall is there in the Commissioners' tunnel from end to end—about 170 feet? Yes; I suppose about that, roughly.
312. You get rid of that fall by following round a kind of plateau to the south? Yes; it is a very old idea, that of going through, and is one that naturally suggests itself. I pointed out to Mr. Eddy, soon after he came here, that it would be possible to get through there by means of a tunnel.
313. *Mr. Humphery.*] You were asked some questions by Mr. Davies about tunnels. I notice that in Whittaker's Almanac there are several long tunnels mentioned. There is one under the Severn, on the Great Western line, nearly $4\frac{1}{2}$ miles long;—do you know that tunnel? I know it by repute. I have an account of it in the office.
314. Then there is the Totley tunnel, on the Midland line, 6,200 yards long; the Standege on the North-western, and the Woodhead on the Manchester and Sheffield, each between 5,000 and 6,000 yards long. Can you say if the conditions under which the proposed tunnel would be constructed differ very materially from the conditions under which those tunnels were constructed? Yes, they do. I have not seen the Severn tunnel, but I believe that they have artificial means of ventilating it. The Totley tunnel has easy grades, but I believe the Standege and the Woodhead tunnels have been very troublesome as regards ventilation.
315. Do you know what means are employed for ventilation? I believe they use a fan for ventilating the Severn tunnel. The Woodhead tunnel has a ruling grade of 1 in 200.
316. Is it for a double line? I expect so. I am inclined to think that Mr. Eddy told me that the Standege tunnel was a troublesome one to ventilate.
317. The No. 1 route is about 2 miles shorter than No. 3 route;—what would be the difference in annual cost in favour of the No. 1 route? That would depend upon the number of trains going over the line.
318. Taking the present traffic as a guide in your calculation? I believe that the average number of trains in both directions is eighteen or nineteen a day. It would be very easy to make a calculation.
319. Will you make an approximate calculation, taking the traffic as twenty trains a day? That would be about 6,260 trains a year, taking six days a week, so that an extra mileage of 12,520 miles would have to be run.
320. What would be the average cost per mile? It would not be fair to charge the full train mile estimated by the Commissioners.
321. *Chairman.*] Have you arrived at any idea as to what would be a fair charge per mile? I do not think myself that the cost per mile will be more than 2s.—it would be something between 2s. and 2s. 6d., because the "green" line is a better and more favourable line in every respect.
322. *Mr. Humphery.*] Two shillings and sixpence a mile would give about £1,500 a year in favour of the No. 1 line in the matter of haulage expenses? Yes, it would be about that. I find that in Western Australia, where they have been going in heavily for improving the grades, the Engineer-in-Chief put down the cost of running at 2s. per train mile, so that 2s. 6d. would be a very fair estimate here. It is not a question of cutting out stations or cutting down the staff—it is merely the shortening the actual running of the trains on better grades.
323. Two shillings and sixpence is a liberal estimate? I think so, under the circumstances.
324. *Mr. Neild.*] You would do away with the station at Clarence Siding? I think there would be a station on the top, but that would be the same in each case.
325. *Mr. Humphery.*] Is there any other feature in the No. 1 proposal which would reduce the annual expenses, as compared with the No. 3 proposal? I do not think so. The advantage would be all the other way. If the tunnel were troublesome and very smoky there might be an annual charge for maintaining ventilating machinery.
326. The saving in annual cost which you have mentioned is the only advantage that the No. 1 scheme has over No. 3? Yes; in my opinion it is.
327. What advantage has the No. 3 scheme over the No. 1 scheme in the matter of saving? There would be the saving of the interest on £40,000, which would be the difference in the cost of construction.*
328. What other saving would there be? It is rather difficult to put the saving in actual figures, but you would save in being able to use the line earlier. If £10,000 a year is to be saved by the use of a deviation, you would commence to save that money a year sooner by adopting the No. 3 scheme than you would save it by adopting the No. 1 scheme, because I am quite sure there would be very considerable difficulties in connection with the carrying out of No. 1 scheme.
329. Is there anything else? There is the problematic saving in ventilation, but that I cannot give you.
330. You cannot get figures to represent that? No; nor can I give you figures showing the greater comfort to be derived by the passengers.
331. *Mr. Davies.*] What is the distance on the existing line from Clarence tunnel to the top of your proposed deviation? A little over 1 mile.
332. Is there any settlement along the existing line? No, there is no settlement there. There is a house belonging to Mr. Munford near the $89\frac{1}{2}$ miles.
333. No injury will be done to existing settlers or landed proprietors by the deviation? I should not think so, but letters have been sent in to the Department threatening claims. You will find that mentioned in the *précis* handed in by the Under Secretary.
334. The residents on the existing line are likely to put in claims for compensation if the deviation is made? They say so, but they would have very great difficulty in showing that they were under a disadvantage.
335. I presume that you do not regard that as a serious charge against the proposal? No.
336. *Mr. Humphery.*] Were any claims made by the people of Lucasville, because of the deviation at Lapstone Hill? I was not engaged in that work.
337. Did you hear of any? No; but I did not make inquiries.

FRIDAY,

* Note (on revision):—Provided always the estimates are right, but I am inclined to think that Mr. Foxlee has made far too little allowance in his prices for the difficulties of executing such a long tunnel on such a steep grade.

FRIDAY, 9 MARCH, 1894.

[The Committee met at the Council Chambers, Lithgow, at 7 p.m.]

Present:—

JACOB GARRARD, Esq. (CHAIRMAN).	
The Hon. WILLIAM HENRY SUTTOR.	WILLIAM CHANDOS WALL, Esq.
The Hon. FREDERICK THOMAS HUMPHREY.	WILLIAM McCOURT, Esq.
The Hon. JOHN DAVIES, C.M.G.	JOHN CASH NEILD, Esq.
The Hon. WILLIAM JOSEPH TRICKETT.	EDWARD WILLIAM O'SULLIVAN, Esq.
THOMAS THOMSON EWING, Esq.	CHARLES COLLINS, Esq.

The Committee further considered the proposed Deviation to avoid the Lithgow Zigzag.

Edward Merigold Munford, Esq., sworn, and examined:—

338. *Chairman.*] What is your occupation? I have no business at the present time.
339. Are you in any way a professional man? I have been. I was on the survey with Mr. Whitton at the time he was surveying from Bathurst to Rydal. I was also with him when he made the tunnel—from twenty-five to thirty years ago.
340. Are you a licensed surveyor? No.
341. Do I understand that you were engaged under Mr. Whitton in the laying out of the line? Yes; I was with the party of Mr. Ashplant, who was surveying the line from Bathurst to Rydal, and from Rydal to Lithgow, without emolument.
342. What are we to understand by that? I joined them for the sake of having something to do, and knowing something about the country and engineering. Being a Canadian, I knew something of the Pacific Railway.
343. You were not a surveyor, but you joined the surveying party? Yes.
344. What as? I acted then as staff man for the purpose of gaining information.
345. You have been residing in this district for some years? About thirty-five years in the Bathurst and Hartley districts.
346. Whereabouts is your residence? On the Great Zigzag. I am interested in the Mount Edgecombe estate with others—very much interested, having a great opinion of the vast beds of minerals it contains.
347. We understand from a letter which you have sent to us that you have forwarded a communication to the Minister for Works in connection with this matter? Yes.
348. When was that—in February last? I think it was.
349. Do you know if the Constructing Department has made any inquiries into the feasibility of your proposed scheme? I am not aware, except that one line has been surveyed. I found the pegs the other day on the top of the hill above the New Vale line as proposed by me.
350. How did you arrive at the details contained in your letter? From the Government levels, which I took myself, and from observations; I know every ravine and gorge in the vicinity for miles around.
351. You have just taken the different heights shown on the various points of the existing line, and made your deductions from them? Yes.
352. You have done no work with instruments? None whatever; but I think you will find my details correct.
353. Your proposed deviation is from about the 86-mile post to the Clarence tunnel in the first instance? Yes; a direct line from the 86-mile post to Clarence station—slightly curving.
354. Would there be any tunnelling in that piece? Not any; it would be all cuttings and fillings.
355. The deviation would shorten the line between those two points? Yes, very much; at least 1 mile.
356. Your next deviation is on the south side of the Clarence tunnel. How far south of the tunnel would you leave the main line? About a mile and a half from Clarence station.
357. One of your routes comes down the Vale, as you call it? It comes down to the New Vale colliery direct under the village reserve of 513 acres. It follows that for 56 chains.
358. That is tunnelling? Yes.
359. Then you have another project called the Vale of Clwydd deviation? Yes.
360. Which turns off where? About a mile from the main line, or this side of Clarence station.
361. On the second deviation? Yes; terminating at the Eskbank coal and water stage on the main line.
362. That is also a tunnel? There are two tunnels, each 25 chains long. The rest of the line is all cutting and filling. The total distance is about $2\frac{3}{4}$ miles to the intersections of the main line.
363. Might I ask how you are able to state definitely that the length will be so many chains, without having used any instruments upon the ground? I took the levels from the Government marks at Clarence Siding, at the bottom points, and at the Eskbank platform. From these I find that the fall, 633 feet, gives a gradient of 1 in 47. You could not be mistaken in regard to the Government heights at those places.
364. But how did you arrive at the distance between the various points? Taking out the Zigzag, which we know makes a difference of 2 miles in the line, it makes the distance 5 miles from Clarence station to Eskbank, or less.
365. That is a very rough way of calculating? Well, it is only an approximation; it might be even more.
366. You are not aware whether the constructing authorities have sent an officer to report upon your scheme? No.
367. Have you had any reply from the Works Office in regard to it? No; and I have not urged the matter too much. I was willing to go to expense myself to show the Government that there might be a route, and a more useful one, and less expensive in construction.
368. Not being a professional man, you could not give us any idea of the cost of your proposals? I should be very pleased to take a contract at £25,000 a mile for a single line of railway. The public opinion here is that the Zigzag should not be done away with. Let the Zigzag or present line be only a down line.
369. But if the Commissioners who are working the line are of opinion that it is an obstacle to the efficient, not to say the safe working of the traffic, do you not think that they are the better judges? That is a question very possible; but we have fewer accidents on the Great Zigzag than on any other part of the line, because greater care has been taken there, and the road is in a perfectly good state. The beds of the viaducts are thoroughly settled, and there is nothing to show but what the line is perfectly safe in every respect.
370. What is the approximate length of the deviation which you would be pleased to construct at £25,000 a mile? From the coal-stage to Dargan's Creek?
371. Yes? Altogether it would be about 5 miles. There would be $1\frac{1}{2}$ miles of the old line used, the deviations coming out at the levels where we were to-day. The total distance would be $6\frac{1}{2}$ miles from Eskbank to the crossing at Dargan's Creek by the proposed deviation in contemplation as suggested by me.

E. M.
Munford,
Esq.
9 Mar., 1894.

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372. What grade would you get between Dargan's Creek and the Clarence tunnel? I did not calculate that in particular, but it would be 1 in 43, approximated from the Government levels.
373. Are you aware that between those two points on the existing line, although the distance is longer than your proposed deviation, the grade is 1 in 33? I am aware that it is 1 in 33 at the present time; but the deviation would be 1 in 43 or 1 in 45, as near as possible from the 86-mile post to Clarence station.
374. How do you manage to get a flatter grade in a shorter distance without tunnelling? That is very simple—by the viaducts being heightened. If you build the viaducts up high, you, of course, have to bring your works up to them.
375. That would be at Dargan's Creek? Yes; a high level viaduct.
376. But it would alter the grades to the east of Dargan's Creek, would it not? Not at all. It would reach the 86-mile post at Dargan's Creek on the opposite side. The grade there, where it struck the main line, would be 1 in 66 going to Bell station.
377. Do you know what the grade is now, running down to Dargan's Creek from Mount Victoria? It is 1 in 66, 1 in 70, and 1 in 81, and I think 1 in 45 near the crossing at Dargan's Creek.
378. Is it an ascending or a down grade? It is a down grade, except for a dead level of 2 miles. Then there is a descent of 1 in 66, 1 in 43, and 1 in 33. There is a level and an up-grade of 1 in 33 to Clarence station.
379. Then, coming westward, it is an ascending grade of 1 in 33? Yes.
380. You propose to get a shorter route and a better grade by raising the bridge over Dargan's Creek? Yes; it would be very easily done, and there would be a beautiful spot to land upon.
381. Did you make an offer to the Department to construct these deviations? I did.
382. Did you give any substantial guarantee? Well, to get the money is, of course, a guarantee. There is a big firm in Sydney who say that they would supply the money and build the line, taking Treasury notes for five or six years in payment.
383. On such an approximate estimate as this? Exactly. Of course, we should have to have a survey. We could not do without that, and our guidance would be by the cost of other works in approximating.
384. And if the instruments were more accurate than your fancy, the scheme might tumble to pieces? Of course. I would not say but it might, though I do not think so. The offer to the Government was conditionally.
385. You heard me describe the proposal of the Railway Commissioners to make a tunnel from Dargan's Creek to the bottom points. Are you in a position to give us any information as to whether that is a good proposal? It is a very bad one for all those who own property on the mountains.
386. Why? In the first place I have travelled often through the tunnel at Lapstone Hill, and I can assure you that, some day, passengers with weak lungs will be found dead there. On one occasion, when I was coming through, two ladies fainted away before we got out of the tunnel. I do not believe in tunnelling at all, if it can be helped. In this case, with a 66-chain tunnel, I should certainly advocate the construction of two or three air-shafts, if not more, 20 chains apart.
387. Do you think that that would effectually provide for ventilation? Yes, greatly; it would depend upon the size.
388. Then there is not so much difficulty in providing ventilation? It would cost a lot of money to do the work. Cavity air shafts, 4 feet by 8 feet, would cost £100 each. All would depend upon thickness of cutting for shaft.
389. Are you aware that all these proposals contemplate a double line? It is not stated whether the line is to be double or single. If double, the cost would be one-third more.
390. Yes; it is so stated. Are you aware if it is easier to ventilate a double tunnel than to ventilate a single tunnel? It is a great deal more expensive to ventilate a double tunnel.
391. On what grounds do you arrive at that conclusion? In the first place there is the foundation to the air-shafts. Unless pillars were built in the centre that could not be done. I have travelled a good deal in my lifetime, and I have seen some splendid railways in Canada, and other parts of the world.
392. It is only because a double tunnel would give you a less secure foundation for your proposed air-shafts that this ventilation would be more expensive? Well, that could be obviated by building from the bottom, and running shafts, called cavity air-shafts, up to the top of the tunnel, on each side.
393. Are you aware that engineers generally think that it is a far easier matter to ventilate a double-line tunnel than a single-line tunnel? Of course, I have never gone into that matter properly myself. These air-shafts did not concern me, but may do so some day.
394. Does it not commend itself to your common sense that since the volume of air in a double-line tunnel is greater than that in a single-line tunnel it must be purer? No doubt a double-line tunnel would be an improvement in that way, and double the quantity of air would be in circulation.
395. Is that the only objection you have to the Commissioners scheme? That is the only objection, together with the expense and damage to resident owners of property by the deviation. The public, if money is to be expended, would like to see the results of the expenditure. We do not want it to take place underground. On the Great Pacific Railway, wherever they could show scenery that would induce people to travel over the line, they did so, and the evidence taken before committees in Canada was principally from the Hudson Bay Company, and from hunters. The Indians themselves gave the greatest amount of evidence in regard to those lines, and the railway officers were always pleased to obtain the information.
396. Then you think that the primary object in constructing railways is, not to give speedy communication between various places; but to allow people to look at scenery? Yes; it is the passengers who pay for the railway, not the produce that is sent along it altogether; to wit, the mountain tours.
397. Do you know what proportion of travellers go over this mountain line by night? No; I could not say what it is, but many, if not all, return by day trains to view the Zigzag.
398. I suppose the night passengers do not stop in order to see the beauties of the country? I have travelled by moonlight, and seen a great many people enjoying the Zigzag. Thousands of people have come to this part of the country for the purpose of seeing the Zigzag. When it was opened by Lady Bolmore, it was the greatest sight that was ever seen in this country.
399. But is it not a fact that by your deviations you propose to take people underground where they now go overground? I only proposed a single line, so that the Zigzag may be used as a down line. Passengers are not afraid of being killed on the Zigzag by any means.
400. Do you know anything about the No. 3 route? I do not.
401. I think you accompanied the Committee in their inspection to-day? Yes.
402. Did you see the plans? I could not get a proper look at them.
403. Then you have no knowledge of the route? No; except what I saw on the ground.

404. Suppose the No. 3 route will serve a larger area of country, give more extensive views, and require less tunnelling than your route, what would you say? I do not think it could, and neither would it. Quite to the contrary.
405. During your employment under Mr. Whitton, and your residence in this district, have you explored the country at the top of the mountains? Yes; for miles and miles.
406. Do you think it practicable to secure a route, starting (say) from Dargan's Creek, or just this side of Bell, and following Bell's line, coming down Farmer's Creek? There is nothing impossible about it, but it is very improbable.
407. You are not aware whether the country offers special facilities? No; I am not. I know the head of the Wollongabbie, and I know the Colowell and the Walgan. If the Clarence tunnel is cut out we shall not be able to get away from there; but if the Clarence Siding station remains, we shall be able to open tens of thousands of acres of the finest land in the country.
408. Is it because the carrying out of either of the proposed deviations would do away with the main line from Dargan's Creek to the bottom points, and cut you off from railway communication, that you object to them? Yes. If the deviation were constructed, it would cut me, and others, off from railway communication. The land I refer to contains very large quantities of ores, coal, and shale.
409. Is there anything else you desire to state? I do not know of anything else. There are only three practical routes for a deviation, and they must be single lines, the Zigzag being utilised as the down line, from Sydney to Bourke.
410. The three practical routes are those which you have suggested? Yes.
411. They must be single lines? They can be double lines if you go to the expense.
412. *Mr. Suttor.*] Where do you propose to start your line? About 10 chains to the west side of the 86-mile post from Sydney.
413. How far is that from your place? It would be about $1\frac{1}{2}$ mile from Clarence Siding, passing through the Mount Clarence Estate, which is owned by Mr. Reynolds.
414. Where is your estate? It adjoins Mr. Reynolds.
415. Is your line a straight one from the 86-mile post to the Clarence tunnel? Yes; from that spot we would leave the present line to the Clarence tunnel to the north of the one proposed by me in 43 grades.
416. You have three different routes? Yes; they are marked on the plan which I have submitted.
417. *Mr. Humphery.*] You estimate the cost of a single line at £25,000 a mile? Yes.
418. What would be your estimate for a double line, including the cost of enlarging the Clarence tunnel? I can hardly say; but it would be about one-third more.
419. Then it would only cost you £8,000 a mile for enlarging the Clarence tunnel? That tunnel cost £27,000.
420. Could you enlarge it for £9,000, making provision for a double line? At the present time I could. When it was made it was very inconvenient to work, and a great deal was spent in getting stone for the casing.
421. Should you require a viaduct over Dargan's Creek? Yes, it must be done with a viaduct, and filling in from both sides.
422. What would be the cost of filling in? I did not estimate that.
423. What would be the cost of the viaduct? The three viaducts would cost about £30,000.
424. But the viaduct over Dargan's Creek? It could be built very nicely for £10,000, and its junction with the main line would add greatly to the value of land in the neighbourhood.
425. Where would the next viaduct be? In the valley opposite the levels.
426. What would be the cost of it? £10,000, and the one at Isandula Creek would cost the same.
427. What is the distance from the 86-mile post to the Clarence tunnel by your route? Less than 2 miles in a direct line with a slight curve.
428. Then you use $1\frac{1}{2}$ mile of the existing line, and afterwards make a further deviation? Yes; and I have $3\frac{1}{2}$ miles to take me down to the coal stage of easy construction.
429. So you would have five additional miles to construct? Yes; using $1\frac{1}{2}$ mile of the existing line.
430. That would give you about $6\frac{1}{2}$ miles, as against the Railway Commissioners' proposed 2 miles? They could not do it in 2 miles; they might do it in $2\frac{1}{2}$ miles.
431. It is 2 miles 53 chains? I suppose it is about $2\frac{1}{2}$ miles.
432. The No. 3 scheme would cover 4 miles 65 chains. You have had that scheme explained to you by the Chairman;—do you think that it would cost more than yours? I do not know; I could not tell you.
433. Do you think that the double line, taken along the No. 3 route, would be more costly to construct than your line? I have made no calculations for a double line.
434. But from your general observation? I should think it would be. No doubt it would be a very nice line, and would show some very nice scenery. I do not think there is any line that could be built underground more cheaply than that proposed by me; in fact, I am certain of it.
435. *Mr. O'Sullivan.*] Are you aware that since the Zigzag was opened only one accident has taken place upon it, and that that was the fault of the man who was injured by it? There have been one or two accidents, but they have been the fault of the men themselves.
436. That being our experience of twenty-three years' working, do you think it is worth while to construct another line? I do not think so. I think it is preposterous to alter the line at all. We have a great many visitors coming here to see the Zigzag. No one can say that it has not been a very great draw, and a great source of revenue to the Government outside of haulage of products.
437. Bearing in mind the fact that the Zigzag is a safe line, that they are able to carry their freight waggons up there very well with the aid of an engine pushing behind, and also that the Zigzag is one of the great sights of the country, do you think it is worth our while to construct another line to supplant it? No; I think it has always been a grievance with many people in the district that the rates of carriage have increased so much. They think some other line should be adopted—a single line, allowing the Zigzag to remain for the down traffic. Almost everyone objects to the Zigzag being done away with if it can be avoided.
438. Your idea and their idea appears to be that while another line might be constructed for the purpose of relieving the traffic, the Zigzag should be allowed to remain? Decidedly. I think all here will join me in saying that it should be retained. Hundreds of people visit the watering tanks and scenery on picnic days and holidays. I have seen 500 people there from Orange and Bathurst and other places. They make it a practice yearly to do so.
439. You have suggested a route for this relieving line? Yes. I suppose they are determined to change the route if possible, and we know that the traffic on the line is increasing to such an extent that something should perhaps be done in part, and a single up line would be quite sufficient.
440. Has any skilled officer reported upon your route? No. I have never asked anyone to do so.

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441. So far we have only got your own opinion in favour of it? You have only my ideas of what can be done. If a Government officer comes up I shall be pleased to tell him all I know about the line suggested.
442. If you have not been able to get skilled information in support of your proposal, may it not turn out that you have been carried away with enthusiasm for your own idea? I am not carried away by enthusiasm nor the idea simply. I thought over the matter before ever it was determined to alter the Zigzag. There is a tunnel just above the 93-mile post, which was commenced by Mr. Whitton. They had gone in 150 feet when word came from Sydney that the Government had decided to make the Zigzag—a wise decision.
443. From the enthusiastic way in which your letter is written, I should think that you might be liable to be led away by too strong a regard for your own proposal? I might be, but others are interested as well as I am, and who would suffer quite as much by the deviation.
444. If you have this good route—and you certainly have not hid your light under a bushel—why is it that the skilled officers of the State, who are paid to look into these matters, have not taken it up and reported upon it? There have been so many routes submitted by persons who do not know anything about the country. The Government officers never take the trouble to ask private individuals about these matters, as they do in other countries. When the promoters of the Canadian Pacific Railway desired information they asked the residents of the districts about it, and even the Indians.
445. But you have brought this project under their notice by letter, therefore they must be well aware of your discovery; why, then, have they not taken it up and endeavoured to obtain the route which you have referred to? I am sure I do not know; but engineers and others do not like to solicit information from private individuals for fear of being displaced in their own opinions.
446. We can only regard your project as a suggestion; it does not come before us as a practical scheme? No; but I offered, if the Government would not take the trouble to survey the ground, to bring up an English engineer, who would survey it and tell you all about it, and pay him myself; but I do not want to interfere with our colonial engineers, because I do not think it is my place to do so until the last moment.
447. *Mr. Neild.*] I understand that one strong objection which you have to doing away with the Great Zigzag is that your property and some of the adjoining properties would be left without the railway communication which they now possess, and which probably influenced you in purchasing the land? Yes; we purchased the land because the railway was there, otherwise I would not give 1s. an acre for it, because there are no means of access provided.
448. You consider that the proposed deviation would seriously injure you? And others, yes. I would not take £130,000 for the Mount Edgecombe minerals at a royalty of 6d. a ton from what I know of the estate, though if the railway were not there I would not give 1s. an acre for it. It would be a ruinous thing if the railway were taken away from it and from other estates in the vicinity.
449. Is your land described as bounded by the railway? Yes. There is a road reserved to Mount Victoria and another to Eskbank; but we have no chance of using them, because of the nature of the country.
450. Did you buy your land from the Crown? Yes.
451. Did the adjoining owner buy from the Crown? I think he bought part from the Crown and part from a private individual in order to make the estate up to 880 acres.
452. Is the Clarence platform upon your property? No; it is upon Government land.
453. Is it in the immediate vicinity of your property? It adjoins the property known as Mount Clarence—Mr. Reynolds' estate.
454. Has your estate a frontage to the station? No; I am 1½ miles from the station. Mr. Reynolds has a frontage to the line, except in regard to about 25 acres which is reserved for railway purposes.
455. Have you made any representation to the Government to the effect that in the event of the line being altered you would expect compensation? Decidedly.
456. Have you received any reply? I have.
457. Have you any objection to state the nature of it? The nature of the reply was that the matter would be duly considered.
458. From your knowledge of Government matters, I suppose you regarded that as a stereotyped reply? I took it for what it is worth. I do not intend, nor does Mr. Reynolds intend, to allow the Government to take the line from us without compensation.
459. Mr. O'Sullivan asked you how it was that your proposals had not been investigated by Government surveyors; but your letter is only a fortnight old? That is all. It was only when I found that something would be done that I thought it would be better to make a statement.
460. I suppose you did not expect that a proposal so important as yours would be investigated forthwith? Not at all. Some time would have to be taken up in investigating it.
461. And although you have not been informed that your proposal will be investigated, you do not regard that as evidence that it will not be considered? I do not, because it is possible that it may be investigated. I would very much like the Government to order a survey of the three routes by their own officers. I shall give them every assistance in my power.
462. This afternoon you were with the Committee when they visited a piece of rising ground to the southward of the Clarence tunnel, and you then saw roughly, part of what is known as the No. 3 route? Yes.
463. Supposing that route were followed, would you have railway communication? We should not; I understand that it is 250 feet from the top of the incline to where the line would be in the gorge of the river Lett.
464. You would be above the line? Yes; it is only just possible that I could get to it.
465. Would that be a disadvantage in working coal measures? Yes.
466. But is not your coal a long way below the surface? The coal is at a depth of 450 feet; but there is no ground to work upon, nor flats for machinery and sidings.
467. Would it not be possible to communicate with the line by means of a tunnel? No; it could not be done.
468. Would the No. 3 route give access to Mr. Reynolds' property? No; it would spoil his property, as well as my own; in fact, all other interests.
469. If that line were constructed, both Mr. Reynolds' property and yours would be deprived of the railway communication which you now enjoy? Yes.
470. That is your chief objection to the Government proposal? It is, in one sense of the word, and doubly so in others.
471. Suppose part of the existing line were left by way of a siding, would that suit you? It could only be done at great expense; and you would have to make either Dargan's Creek or Eskbank the depôt, which would mean so much extra hauling.
472. Not as compared with the present route? No; but if the route were altered, we should lose the line altogether.
473. Was your claim for compensation made to the Government before 23rd February, or subsequently? It was made a year ago.

474. Have you revised your original claim? I have not, because I have consulted with my friends, and they think it better to try to avoid any unpleasantness or any lawsuit. The Government can fight any private individual, and I am a loser by them now to the extent of £10,000. I do not intend to lose any more by them.

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475. *Mr. Trickett.*] Have you a large holding? Six hundred and eighty acres of freehold, and nearly 1,380 acres of leasehold.

476. What is the extent of the Mount Edgcombe property? Six hundred and eighty acres.

477. Did you buy it the other day? No.

478. Did you bid for it? Yes; it is held by two or three gentlemen; but the whole of it is in my name.

479. I am not talking of the property you have got, but of the property which you proposed to buy the other day? We wanted to see what it would bring at public auction, while the doing away with the Zigzag was in contemplation; but we did not get a bid the second time.

480. Did not you, yourself, bid for it? Yes.

481. What did you bid for it? £1,100.

482. Why did you not complete the purchase? I found that it would be better for me not to do so.

483. Did the vendor let you off? Yes; he acted most honourably about it when he saw the result.

484. You said a little while ago that you were prepared, with the aid of some persons, to construct the line you suggest for £25,000 a mile? Yes.

485. Who are associated with you in that offer? I am not at liberty to mention names, but a big Sydney firm.

486. You decline to tell us who they are? I am bound not to mention any names until the thing is settled.

487. But you mean to say that certain gentlemen would construct that line for £25,000 a mile? Yes.

488. You want this Committee to believe that a certain number of gentlemen in Sydney have agreed to construct this line for £25,000 a mile, although you have stated that you have not made a detailed survey and have none of the details of the line prepared? No; it is merely an approximated proposition. The suggestion was made by me, and they said, "Very well; if it can be done for that, the money shall be forthcoming."

489. Then it is quite a conditional offer; nothing definite has been done? Yes; it is a definite offer. I have only spoken of a single line, because I did not suppose that the Government were going to destroy the Zigzag.

490. But you apparently admit that it is desirable to have a new line to carry the traffic going towards Sydney? Yes; for the heavy traffic towards Sydney by a single line.

491. You admit that? Yes; there would always be a shove up to Dargan's Creek.

492. You admit that it is desirable, in the interest of the heavy traffic going towards Sydney, to construct a new line, but, for the benefit of your own property, you wish the Zigzag to be retained? Not at all. It is no benefit to me at all at present; but it brings to the district persons who are travelling for pleasure from all parts of the world. It will probably be a large manufacturing town in the future.

493. You have coal on your property? Three very valuable seams, and a fine iron mine; also paint pigments and graphite.

494. How long have you had it? Since 1881.

495. How much coal have you taken out of it? None; because the matter of dealing with the Zigzag is in so undecided a state. We could not get a bid for the land the other day because of the proposed alteration.

496. The deviation is a proposal that has only been made during the last four or five years? During the last five or seven years. Years ago, when I found that something was going to be done, I thought it my duty to state my claims. I will sell the land to the Government if they give me £10,000 for it. That is what has been expended upon it. I daresay Mr. Reynolds would be glad to sell his property.

497. Did you not offer only £1,100 for 680 acres? Yes.*

498. And yet you want the Government to give you £10,000 for land which is 1½ miles from the station? That has nothing to do with it as to its prospective value.

499. Is not your suggestion purely a selfish one, from your own showing? Not at all.

500. Are you not deeply interested in this matter? I acknowledge that.

501. If you had not lived up here you would not have bothered at all about it? I do not think I would; it would have been none of my business.

502. *Mr. Wall.*] You value your property at £10,000? I would take that for it to-morrow, and be very glad to get it.

503. Do you know, as a matter of fact, that this property has been offered to a dozen people for £1,000? Yes; I was told so.

504. And that it could be purchased to-morrow for that? No; it could not, only an interest, because they cannot get a title except through me.

505. You know that it has been repeatedly offered in Sydney for £1,000 by the people who hold a lien on it. Do you expect that the Government will give £10,000 for property that can be bought in the open market for £1,000? I am the only person who has a title, and I am going to keep it.

506. You submitted a proposed route to a firm of contractors in Sydney, and they have undertaken to construct it for £25,000 without knowing anything about it? Only from my statement.

507. But you know nothing about it, not having made any survey, or entered into details? I have gone into it pretty deeply; I am not mistaken.

508. But you are mistaken in the line which has been surveyed for the Commissioners. You state that the Commissioners are wrong in their estimate, which is based upon plans and sections; you state that they cannot make the line the length which they say it will be? Well, it is possible, and I may be 2 or 3 miles out; but I do not think I shall be when the whole line is completed.

William Mylecharane, Esq., licensed surveyor, sworn, and examined:—

509. *Chairman.*] You are a licensed surveyor by profession? Yes.

510. For some time you occupied a position in the Lands Department? Yes; from 1863 until 1867. I then passed my examination and was subsequently in charge of districts.

511. You are not now connected with the Civil Service? No.

512. You are engaged in private practice in Lithgow and the surrounding district? Quite so.

513. Are you familiar with the country here? I was born here in 1843. I have known it for fifty-one years.

514. Your professional duties require you to visit various portions of the district? Yes. 515.

W.
Mylecharane,
Esq.

9 Mar., 1894.

* NOTE (on revision):—For one gentleman's interest.

- W. Mylecharane, Esq.
9 Mar., 1894.
515. *Mr. Suttor.*] Do you know anything of the deviations before the Committee? Not having seen the plans I am quite at sea in regard to the whole of them, except the projected line *via* Hartley Vale. I know something about the tunnel deviation, but I am quite unacquainted with the alternative lines. [*The various routes were explained to witness by the Chairman.*]
516. Which do you think would be the best line to make. Take first the deviation proposed by the Commissioners, with a tunnel through the range? I must confess that my knowledge is limited to surveying rather than to engineering; but I should certainly favour that or the No. 3 route. I know that there are objections to tunnels, whilst certain arguments may be advanced in favour of open railways.
517. What about the No. 3 proposal? I think that the length would be objectionable, though the grade may be less. I should prefer the tunnel to it.
518. On what ground? There would probably be less compensation to start with.
519. But the work would cost more? Perhaps it would; but you have heard to-night something about compensation.
520. We are told that it would take a year longer to make the Commissioners' line than to carry out the No. 2 route. Does that modify your opinion with regard to their line? Of course, its earlier construction would be in favour of the No. 3 route.
521. We are told that there would be great difficulty in ventilating the tunnel on the Commissioners' line? Certainly there will be that difficulty to contend against. As a native of the place, and knowing the whole district, I am totally against Mr. Rock's line.
522. Upon what ground? That it passes through private property the entire distance, and opens up no Crown land at all.
523. *Mr. Humphery.*] You intimated to the Chairman that you desired to give evidence on this matter? I had no particular desire to give evidence. I was invited to do so.
524. By whom? By the Mayor.
525. Will you kindly give us any evidence which you think will be useful to the Committee in arriving at a decision with regard to the route? I should be in favour of any line that would avoid the heavy grade of the Zigzag, if it were shorter, or the same length as the existing line.
526. Do you know the physical features of the surrounding district? I do.
527. Can you suggest such a line? I have not practically explored the country, but I am told there is a line up where we are to get our water supply, which would do away with tunnelling; but I am very much of opinion that it is impracticable.
528. *Mr. O'Sullivan.*] Mr. Munford has submitted a plan of a new route which, upon paper, seems an admirable one. As you know the country well, being born and reared here, you can tell the Committee whether it will be a perfect route? I have not actually seen Mr. Munford's plan.
529. One of his routes, which appears to be the chief one, starts from the coal stage, and seems to strike the end of the Zigzag Reserve, and then goes through the Clarence tunnel, and takes a straight course away past Dargan's Creek? I could not give you any definite information in regard to it.
530. You know the country? Yes; but without anything tangible in regard to levels I am not in a position to give you any advice, no practical engineer having been over the route.
531. But as a surveyor who knows the general contour of the country, do you think it is possible to bring a line down from the Zigzag Reserve to the coal stage? I do not think so.
532. Do you think that it is possible to make the deviation marked with a straight line bearing eastward of Dargan's Creek? No, I do not.
533. *Mr. Wall.*] Have you any knowledge of the general desire for an alteration of the line. What is your opinion with regard to the necessity for altering the present Zigzag? The views I have generally heard expressed are that if the existing grades were eased, we should be able to do a better trade in our coal, because the haulage rates that we now pay are excessive as compared with other places.
534. You think that the doing away with the heavy grade would have the effect of lowering the rates? Yes.
535. If an easier grade would not increase the haulage rate, you think that people would have no objection to using the present line;—is the Zigzag looked upon as a dangerous line to travel? I have not heard it spoken of as more dangerous than elsewhere.
536. You think the result of the deviation would be to reduce the rate of haulage? Yes; I think so. It would give us some opportunity of competing with other places, but I do not know that it would bring about the desired result entirely.
537. *Mr. Trickett.*] As a professional man, would you advocate a line to Lithgow by way of the Zigzag, and a line to Sydney by a different route;—do you think that that would be desirable? I certainly do not.
538. *Mr. Ewing.*] You have already said that you know this country intimately? Yes.
539. Do you know the surveys that have been carried on in it? The engineering surveys?
540. The land surveys? Yes; most of them.
541. What is this "D 1, 681"? It is a feature survey.
542. Showing the crest of the main range? Yes; I think it is a topographical survey.
543. "M.S. 85" appears to be a road survey? Yes.
544. Also following the crest of the range? Yes.
545. That survey locates the crest of the range? Yes; pretty nearly.
546. It divides the rainfall between the Cox and the Hawkesbury? Yes; that is so.
547. From the railway at Bell, following along the crest of the range, what kind of country is it, presuming that these surveys are on Bell's line? They are on Maddock's line, the cattle route.
548. Following from the railway along Maddock's line on the crest of the hill, what sort of country is it? Tolerably level; much of a table-land, except in a few places.
549. Do you know of any approach from Eskbank up to the table-land? Not beyond what I have recently heard.
550. You know of no route up there? No. I have followed Farmer's Creek up to the corner of travelling stock reserve 148.
551. Do you know of any connection between that place and the table-land? No.
552. You know nothing of that? I cannot say anything of that.
553. *Mr. Collins.*] It has been stated that between £9,000 and £10,000 a year would be saved if a proper deviation were made;—do you not think that that should be taken into consideration? Yes.
554. Do you think it would be feasible, if a proper gradient were obtained, to take coal at a cheaper rate to Sydney? Yes.
555. That matter should be taken into consideration? Yes.
556. Therefore you think it advisable that a deviation should be made? Yes; that is so.

SATURDAY, 10 MARCH, 1894.

[The Committee met at the Oddfellows' Hall, Hartley Vale, at 1:30 p.m.]

Present:—

JACOB GARRARD, Esq. (CHAIRMAN).

The Hon. WILLIAM HENRY SUTTON.	WILLIAM CHANDOS WALL, Esq.
The Hon. FREDERICK THOMAS HUMPHERY.	WILLIAM McCOURT, Esq.
The Hon. JOHN DAVIES, C.M.G.	JOHN CASH NEILD, Esq.
The Hon. WILLIAM JOSEPH TRICKETT.	EDWARD WILLIAM O'SULLIVAN, Esq.
THOMAS THOMSON EWING, Esq.	CHARLES COLLINS, Esq.

The Committee further considered the proposed Deviation to avoid the Lithgow Zigzag.

John William Rock, Esq., M.I.M.E., sworn, and examined:—

557. *Chairman.*] Where did you learn your profession? At Leith, in Scotland.
558. With whom? With Tennant & Co.
559. Of Leith? Yes; I afterwards finished it in Glasgow, at Napier's.
560. They are also mechanical engineers? They are also mechanical engineers.
561. Did you follow your profession in the old country? Yes; I then entered the service of Simpson & Co., well-known mechanical engineers in Pimlico. I afterwards went to Westminster, to a civil engineer's office.
562. What works were you engaged on there? Chiefly on water-works. I was engaged on the Canterbury water-works principally, and also in connection with the Adelaide water-works, the plans for which were originally prepared in London.
563. From there, where did you go? To New Zealand, where I was engaged upon other works. There I introduced the use of water-power from hydraulic mains, and practised my profession in regard to general engineering; but particularly in regard to hydraulic engineering.
564. How long were you there? About seven years.
565. Were you connected with any public works? I was managing foundries in Dunedin, principally.
566. How long have you been in this Colony? Nearly ten years.
567. Have you been practising your profession ever since you have been here? I have been entirely engaged in that way, except for a short time when I was sent home to England on business.
568. What is the nature of the works upon which you have been engaged in this country? I began with a purely mechanical line of business, but I gradually found that my work drifted largely into mining, and more generally, into civil engineering.
569. Have you had anything to do with the laying out of railways or tramways in the Colony? I never did any Government work, but I have laid out one or two lines in different parts of the country, including Newcastle.
570. Will you mention them? I completed the Northumberland Land and Coal Company's line.
571. That is a railway which has been actually carried out? Yes.
572. What is its length? About 1½ miles. It goes through country of the heaviest description.
573. Are there any others? I have also laid out a line for the New South Wales Shale and Oil Company. I laid out over a mile of private line, which I superintended and passed. Then I have done almost all the engineering work for the Lucknow mines lately. They are situated near Orange, and my work involved some railway construction.
574. Have the lines been actually constructed? Yes, and they are open for traffic.
575. Have you anything else you would like to say in reference to the works which you have carried out? I can only say that I am at present fully occupied with general, and, very largely, with mining-engineering works. I have been instructed to proceed to Western Australia to engage in work of a similar character there whenever I like to go.
576. Will you briefly tell us how you came to find this line, or to be requested to find it;—who were your employers? This is in no way a speculation on my part. I was requested by the gentleman who is the mouthpiece of an association here to find, or perhaps, re-find, from what I can hear in the neighbourhood, the line which was, many years ago, proposed to be a portion of the main line from Sydney westward. Into the merits or demerits of the existing line, or the proposed deviations, I need not enter. I received instructions to find a line which was to start from Mount Victoria and come out at Eskbank. My limits were that the grades were in no place to exceed 1 in 50, and that I should have no small curves or anything that would be a retrogression as regarded the engineering portion of the route. I started to work at the beginning of the year.
577. What are your curves? The smallest curve I have is 12 chains radius, and except in one place these curves could be enlarged by what I considered excessive earthworks, but which would not be really detrimental to the line. It was in order to do the thing on the most economical scale possible that I did not enlarge these curves. I ran the line from point to point, having first of all examined very much as a commission of one all the people who knew the place. I ran tentative lines along every route which they said could be taken, and I feel sure in my own mind, that the line which I proposed is the only practicable one. There has been no favouritism about this line. I have taken the most favourable route and the shortest route that could be obtained between the two points. The real engineering difficulties occur, of course, in getting down into the valley, and in getting out again. The route across the valley presents no difficulties, and when I once got down I took almost a bee-line from one point to another. Therefore, I have not considered the real wants of the people as any one who had been working from that object might have done. I have run the easy portion of the route in a direct line.
578. Will you briefly state the direction in which your line runs, either from Mount Victoria or from Eskbank? I leave the existing line at a point about 5 chains on the Sydney side of Mount Victoria station, and a curve of about 15 chains radius brings me right under the station-master's house, across the entrance to the station, and across the road which runs along the side of the railway to Hartley Vale siding, where there must be a small bridge. My route then runs along on the sidling ground below the "Grand Hotel," and below the school. It passes through the property of the late Mr. Piddington—all through sidling ground, and through the lower portion of the Eltham Estate, which is marked on the

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plan, "Piddington, Milson, and Roxburgh." Still keeping along the sidling ground, and along what becomes a high-level piece of ground, it approaches the well-known place of interest which tourists go to see, called Titania's Glen, to a point almost touching "water reserve 103," of 80 acres. Then it runs in what is really more than half a circle round the point. This is the only place on the whole route where I think it would be expensive to have a curve of more than 12 chains radius, but a curve of 12 chains radius can be obtained. Leaving there, the line goes through what is marked as Bentley's Selection, with a curve of 15 chains radius, and keeps on as far as a road in which a zigzag is marked on the map and which goes to Hartley Vale. Before quite getting to that point it enters a tunnel which runs the rest of the straight line, which you see marked on the plan. At a varying distance of from 5 to 10 chains from there the ground consists of a lot of rocks, which would involve a very large amount of engineering difficulty, and this tunnel is for the purpose of escaping this.

579. What is the length of that tunnel? Practically, 30 chains.

580. Is it on a curve? No; it is on a straight line, between two curves, and it might be shortened with a little engineering enterprise by blowing down a lot of these turreted rocks. The section marked "John Hay, junior," is in reality a precipitous rock, about 150 feet high, and the levels bring you out exactly at the bottom of it. The line comes out on to a clean face of rock, and from there starts a sidling cutting. That point is the extreme convergence of the Mount York Range and the ranges which run away into the Kanimbla Valley. You look down into the whole length of that valley. From there the line is hardly worthy of any comment. You run, perhaps, for about 20 chains at the foot of firm, vertical, solid rocks, and fall, by a grade of 1 in 50, until you get into an easy sidling of 10 or 12 degrees. You keep on until you get to Mount York itself, which you make round without any remarkable ground until you touch the corner of the recreation reserve. I had to take advantage of the valley lying at the back of Mr. Tabrett's house, in order to make distance. That valley is about 30 chains across, and you can get a large curve, the ground being a partly sidling of 10 or 12 degrees and partly level. You then keep on until you hit the main road at the very edge of A. Armstrong's property, which is the nearest approach this route makes to the township of Hartley Vale, which is 60 chains from here. Then follows a slight curve and a straight piece 70 chains long until you get to the river Lett, which is a very small stream, the water itself being about 10 feet wide, but it would require a bridge of about $1\frac{1}{2}$ chains and about 10 feet high to cover any flood. The line keeps straight on until, with a curve, it reaches the extreme edge of Thomas Morris's 98 acres. The whole of the 2 miles through which we have passed is thoroughly flat ground; but now you begin to rise, in order to get up into Eskbank, and pass along the gradually increasing spurs upon the ranges, first with a convex, and then with a concave curve, until you come to the 30 acres marked "M. J. Finn."

581. What about Morris's Creek? All the creeks that are marked on the plan mean culverts. There is nothing that means a bridge.

582. There is nothing larger than the Lett? Not half or a quarter the size of that river. Then you come to what looks the most remarkable piece of the whole line—that extremely deep curve which is shown on the plan. It is yet to be decided whether that piece will be put in—because it means nearly 100 feet of extra elevation—or whether we shall lengthen the tunnel. The ground rises so extremely gradually up to Eskbank station that every 10 feet of elevation means an immense decrease in the length of the tunnel. I ran that curve round in order to cut down the length of the tunnel. When I ran straight across my tunnel was so hopelessly long—about 180 chains—that I went back and reduced it to 70 chains. At the head of that gully there is a stream as big as the river Lett, and is, I should say, the most important piece of water we pass over. From bank to bank it measures, I suppose, fully 4 chains, and though, of course, the gully will be filled in, provision would have to be made for quite as big a stream of water as comes down the river Lett. Then you run again on a gradually steepening sidling until you come to Campbell Mitchell's 45 acres and Mackenzie's 40 acres, where you observe the road takes a V shape. That is nearly the top of Doctor's Gap. The tunnel begins 17 chains this side of that point, and ends just about the crossing of the road into Lithgow. After that the line simply runs down the flat, until, with a 20 chains curve, it joins the existing line near the Semaphore. The total length of the survey from end to end, which is, of course, subject to correction, in rounding off curves, and so on, is 1,146 chains, or 14 miles 26 chains.

583. And the ruling grade? One in 50.

584. Is that the best grade you could get? No; we could make it easier if we liked to lengthen the line up the valley.

585. Do you know the length of the existing lines between the two points connected by your line? Rather over 19 miles. If, instead of crossing the road, where I indicated, you were to run near the township, we could make the grade what we liked by increasing the length of the line. We have a certain distance to fall, and dividing the grade into that, we get the length.

586. Of course there are points on the line where it is almost flat for a bit? That grade is calculated to run right through, and I have 28 feet to spare.

587. But it is not a continuous 1 in 50 grade down and 1 in 50 grade up;—I suppose the 1 in 50 grade only occurs here and there? It occurs right through.

588. But from Mount York, for 2 or 3 miles west from here, you would have a much flatter grade? Starting at Mount Victoria, and coming out at the blazed tree at Armstrong's house, I have calculated that it would run a grade of 1 in 50 right through, and I have about 28 feet to the good—that is, I could afford to waste 28 feet in various places throughout the whole length. After that, of course, there is a long flat piece.

589. Your instructions were to find a practicable route with a grade of 1 in 50 between the two places you have mentioned;—I suppose you have not gone further and taken out sections in order to make an estimate of the probable cost? I have all the details ready and collated; but I had not time to make an estimate of the cost. I thought if I were allowed to give evidence on a future occasion I would have the information all ready. The only thing I can state is that there is no practical difficulty in the work, and I shall be able to get out all the quantities and give an estimate at a very early date.

590. You make the detour through Finn's and Mackenzie's for the purpose of decreasing the length of the tunnel. Presuming that piece were cut out, and you went in for a longer tunnel, how long would the tunnel be? Its length would be doubled.

591. Do you know, from your knowledge of the district and the contour of the country, whether it would be possible to strike the Western Line at a point further west than Eskbank, and avoid the tunnel altogether? Yes; we could then get more length, and, by running into Bowenfels, do away with the tunnel altogether.

592. If your instructions had been to take the line from Mount Victoria to Bowenfels, instead of to Eskbank, you could have made it shorter, and have done away with the tunnel? Yes; I could have done both.
593. Roughly, how much shorter would it be? I suppose I should save a mile on the total length.
594. And without a tunnel? I mean that the existing line to Bowenfels would be shortened by 6 miles, instead of by 5, as it would be by my proposed line to Eskbank, while a tunnel could be dispensed with altogether. It is in order to save Eskbank that I have run the line through there.
595. That would mean considerably less in total construction? Yes.
596. The tunnel-work being excessively heavy? Yes; the total cost would be less.
597. Could you obtain the same grades? Easily.
598. If you were doing that, whereabouts would you branch off from your present survey? From the knowledge I possess at the present time, I should say in Mackenzie's 40 acres. After making a detour I would keep more downwards.
599. Instead of commencing a tunnel, you would continue round the side of the hill? Yes; along the northern boundary of Mackenzie's 120 acres, where it touches the 40 acres, until you come to the boundary of Brown's Gap. Just there it would cross the Gap road, and you would require 1 chain, or perhaps 2 chains of tunnelling. Then, roughly speaking, it would run in a more northerly direction through the 61 acres belonging to the Lithgow Valley Colliery.
600. On which side? Pretty well northerly, going through Higgins, Waltons, and Gill's 320 acres, and then as much as practicable making a straight line to the round part of the curve between Bowenfels and Lithgow.
601. That would be a less costly line than a line to Eskbank? It would be less costly, because it would all be upon sidling cutting.
602. If the line were made from Mount Victoria to Bowenfels, the coal trade of the Lithgow Valley would all have to be brought down to Bowenfels Junction? There are two points to be considered in that. If the line were taken direct to Bowenfels, the portion of the existing line which would be left between Bowenfels and the bottom of the Zigzag would be turned virtually into a station-yard. That would be no disadvantage to Lithgow, but rather an advantage to the collieries there. Apart from that, a much wider view of the thing is this, that if the line were constructed to the point we have been considering, on the south side of the long tunnel where the narrow curve is, is the real outcrop of all the coal-seams, and the collieries would be worked by drives from there.
603. But are there not some on the other side of the Lithgow Valley, which could not get access from this side. For instance, have not the Vale Colliery Company all their land on the north-western side of the line, rather than on the south-eastern side? I cannot speak authoritatively on the matter; but in nearly every case they come over on to this side of the range.
604. At all events, independently of whether they work or could work on this side of the mountain range, you say that the fact of having to run down to Lithgow or Bowenfels would not be of great consequence, because of the great facilities for shunting there would be at Lithgow? Yes; and as regards the passenger traffic there need not be any disadvantage. I would suggest that the refreshment-room should be placed there, and the running in of any local people could be done during the refreshment-time.
605. *Mr. O'Sullivan.*] How long have you been on this particular survey? I began it two days before the new year. I spent about three weeks upon it then, and I spent another three weeks upon it afterwards.
606. I understand that you have gone over every possible route, and have selected this as the best of them? Yes; I have tried every possible route.
607. I presume you have been ready to receive suggestions from residents, even though they be laymen? Yes, I have. I requested interviews, both with those who said it was as easy as anything to find a line, and with those who said it was impracticable. Whenever anyone said there was an easier route, I tried it, not only by eye, but by running a line along it, to my great disappointment, and I am now certain that there is no other route.
608. Did you discover this route, or did anyone suggest it to you? I discovered it in this way. I found that unless I could get a fair start below the precipices at the junction of the Mount York road and the Old Hartley road, I might give the job up. The larger portion of my time was spent in getting a route to go down that depth. When I got that, the rest was comparatively simple. I ran the line completely round the ranges for about 8 miles the other way, so I have tried the thing very carefully.
609. You are confident of having overcome the difficulty of rounding Mount York? There is no question to be considered except the earthwork. There is no doubt the line can be constructed.
610. *Mr. Davies.*] Have you made yourself familiar with the proposals now before the Committee? No; I have not had the opportunity.
611. Have you seen the Commissioners' proposal? No; I had one glance at the map, but I do not know anything about the details.
612. Have you seen the proposal of the Construction Department? No; I have not seen any of them.
613. You have surveyed both the routes you speak of yourself? Yes.
614. You have no idea of there being any difficulty beyond the points you have already explained? No; it is a mere matter of cost. There will be no excess in the way of cost.
615. You can secure a uniform grade of 1 in 50? I have done that, and the grade might be made 1 in 60 without any great expense. It would only mean the lengthening of the line.
616. Are you aware that the Commissioners' proposal includes a tunnel $1\frac{3}{4}$ mile long? The only knowledge I have of it is what I read in the public newspapers.
617. You have no knowledge of it? No.
618. *Mr. Ewing.*] To the best of your belief, did any engineer ever look at the route you have described? The only thing that makes me know that it has been tried is that upon a lithograph given to me by the Engineer-in-Chief, there was marked, in green colouring, a line which got to about where my difficulties commenced, and then stopped, just as if the surveyors could not get any further. That is the only thing that makes me think that the line has been tried.
619. You saw no evidence of work on the ground? No.
620. You say that the more difficult part of the work had, apparently, been investigated? Instead of going from Mount Victoria downwards, I thought they had started from the flat, and that when they had got to the big grades, 5 or 6 miles from Mount Victoria, they had gone no further.

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- 621-2. Your lowest point, I presume, would be in the River Lett? Yes.
623. How high is Mount Victoria over that? Eight hundred and seventy feet.
624. How far is it from the bridge over the Lett to where you join the main line at Mount Victoria? Six hundred and eighty-one chains.
625. How many chains of level country would there be in that? None, except where they put in stations.
626. Then you have to rise 870 feet in 681 chains? Yes; that is a little better than 1 in 50.
627. The whole line is going to run on a grade of 1 in 50? In that case it would have to do so.
628. Would any of it be more level than 1 in 50? In that case it would not. I am taking right down to the water level, but I would propose to make the bridge perhaps 25 feet high, getting a help in that way.
629. You have told us that the grade would be 1 in 50. It is perfectly clear then that if some is less than 1 in 50 some of it must be more than that? Yes; but I picked out the route so that it might run 1 in 50 all through.
630. You believe that there is no flat country to be utilised? There is no flat country to utilise.
631. It will be cutting the whole way? It will be sidling country.
632. You have looked into it, and you believe you can do that? Yes.
633. *Chairman.*] Is there anything else you would like to add? I mentioned that I had literally fulfilled my instructions in finding a 1 in 50 grade, and in wasting no mileage. I think I also mentioned that by adding a little distance, say a mile, it would be quite possible to ease the grade off. If I crossed the road 30 chains from here, instead of 60 chains, I should have all that to spare.
634. If your route is not tied up too much you will be able to get length where you want it? We can run practically any distance in the valley and ease the grade.

John Francis Tabrett, Esq., auctioneer, sworn, and examined:—

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635. *Chairman.*] What is your occupation? At present I am an auctioneer.
636. Residing in Hartley Vale? Yes.
637. *Mr. O'Sullivan.*] Are you well acquainted with this district? Yes, very well.
638. I understand that you are a member of the Association who have provided for the survey made by Mr. Rock? Yes, I am Secretary to that Association.
639. What induced you to undertake the work? Well, I may perhaps claim to be the originator of the scheme.
640. What induced you to originate it? I saw the disadvantages the agriculturists were labouring under in this particular district, and I took a patriotic view of the question.
641. What are those disadvantages? They cannot get out of the valley without climbing up a hill, which is about 4 miles long, and has a grade in some places of as much as 1 in 8. People who have raised produce in the outlying districts have to face that mountain in order to get their produce away.
642. The road you refer to is near Clarence siding? No, I refer to the road to Mount Victoria. Hartley Vale is situated right in a valley; and besides Hartley Vale there are the other three Hartleys, Kanimbla, Liddleton, Lowther, and all those places. They have either to go to Mount Victoria, up a road with a very steep grade, or to Bowenfels, where the grade is not so heavy, but the distance is longer. They can also go to Eskbank, or to Hartley Vale station on equally heavy grades.
643. Are the districts you have named settled by agriculturists? Yes, to a certain extent, and I am positive, from what I know, that if the railway were constructed the population would be four times as great as it is now.
644. What produce do these agriculturists raise? They can raise any produce that can be grown in any other part of the country, even including corn.
645. Do they raise much produce? No, because they cannot get it to market. They can raise corn, wheat, oats, maize, rye, potatoes, pumpkins, indeed any kind of vegetable or cereal that can be produced in any other part of the country, except it is a tropical or semi-tropical district.
646. Is there room for much production here? Yes; there are at present 126,000 acres of land in the Lowther, Kanimbla, and Megalong Valleys. In addition to that, there are 8,000 acres in the Hartley District.
647. Do you mean Crown land? No; from what I can glean, there are about 30,000 acres of Crown land available for settlement.
648. The other land you refer to is already alienated? Yes, or leased.
649. You have one or two graziers here? Yes, we have Liddleton, Kanimbla, and Rose Vale.
650. Do they raise sheep, or cattle? Both.
651. What other industries labour under disadvantages in these valleys? There are none at present that I am aware of; but if a line is constructed we shall have coal, shale, timber, granite, silver, gold, and limestone, all of which would be worked.
652. Have you ever worked any silver mines in these parts? There have been some worked.
653. Have you had much gold-mining? No; there is one mine which is said to be a success. They sent some stuff down to Sydney to be assayed, and it has proved to be worth 3 ounces to the ton.
654. *Chairman.*] You cannot tell us where that is? It is at Liddleton, on Dean Marryat's land.
655. *Mr. O'Sullivan.*] Is there much of it? I believe that the reef they are working will extend for miles.
656. How would the railway assist the shale and kerosene industry? By opening up new fields. It would assist the Hartley Vale people, because, at the present time, they have to draw all their stuff up to the siding, a height of 400 or 500 feet.
657. But they have a tramway of their own? Yes.
658. Do you think they would abandon that tramway, and use the main line? I should imagine they would; but their manager will be able to answer the question.
659. You think that, as business men, they would use it? On a rough estimate, I believe that it would save them £1,000 a year.
660. Are there any other industries? Yes, shale would be opened up at the Sugarloaf Mountain. Shale has also been proved to exist on Delancy's property, and on other properties round here. At Hartley they have as good a granite as could be procured in any other part of the Colony. I am not speaking scientifically, but as a practical man, because I know what granite is.

661. You consider that this district has been languishing for the want of assistance which a railway would give it? I am positive of that.
662. And that a railway would give a great impetus to all these industries? Yes; and to agriculturists as well. Last year 2,000 fruit trees were planted in this valley near Hartley, and there will be more planted this year. If there were a possibility of the railway coming this way, however, instead of 2,000 being planted, 10,000 would be put in.
663. Who are the members of the Association to whom you refer? They are all local men.
664. They are likely to be interested in this railway? Every one of them are local men; but in addition to that, I may say that a great many of them are working men who do not own a foot of land in the district.
665. They have taken the matter up largely on public grounds, with a view to a public benefit? Yes. They consider, with myself and others, that if the railway were constructed, from 2,000 to 2,500 men could be employed upon it at one time, which would mean a great benefit, not only to Lithgow, but to all the districts right round, and it would also be the means of drawing from Sydney a large section of the unemployed.
666. Have you a timber industry to be developed? No; but we have as good timber in the district as you could imagine.
667. What timber? Principally ironbark and gums. There is cedar, but we have to go some distance down for it. This is the only outlet for the whole of the valleys south.
668. Is there any other point that you would like to bring out? You have had all the evidence with regard to the line itself. It would shorten the distance to Lithgow, and would place all the districts west of Eskbank in closer communication with the city.
669. I presume you hold also that instead of having a line for about 19 miles giving little or no freight to the railway, this line will give a considerable business to the railway? Yes. At the present time I am informed that the line between Mount Victoria and Eskbank, leaving out those two places, does not cover working expenses. If the line I suggest were constructed, however, I am positive that there would be a saving of at least £2,000 in wages alone. There are a great number of people employed as fettlers, signalmen, pointsmen, &c., on the present line, who would not be required on this line. That would mean a saving to the Department of at least £2,000, and some of us estimate it at £3,000.
670. *Mr. Davies.*] You are familiar with the project submitted by Mr. Rock? Yes.
671. You are one of those who employed that gentleman to find a deviation which would be an improvement upon the existing line? Yes.
672. Do you, and the gentlemen associated with you, approve of the proposal as submitted by him? Yes; his plans have been adopted by the Association.
673. Do you know anything about the Commissioners' proposed deviation? I only know what has transpired through the press.
674. Have you seen the plans showing the Departmental scheme? I have not.
675. Your great object has been to secure a better route with an easier grade and a shorter distance between Mount Victoria and Lithgow? Yes; and to open up this particular district.
676. For agricultural purposes? Yes. The district right through to the Jenolan Caves would be benefited by the proposed line.
677. The great advantage accruing would be the saving in haulage and mileage? Yes, and in working expenses, wear and tear, &c.
678. Besides that, you say that the line would lead to the development of additional industries? Yes, and I believe, from what I can learn, that it can be constructed for considerably less than any other route.
679. Having been engaged in building and that kind of occupation for a number of years, could you give us a rough estimate of the cost of the line per mile? My opinion, after seeing the plans, and going over the route with Mr. Rock a good part of the way, is that the work could be done at considerably less than £200,000.
680. You also stated that in your judgment, and in the judgment of those associated with you, there would be a saving of £2,000 year in working expenses? That is in the way of fettlers, pointsmen, and others; it has nothing to do with the wear and tear, which we cannot get at.
681. You also believe that a very great saving would be effected in wear and tear because of the easier grades? Yes.
682. Is there any other advantage which would accrue to the district? Yes. The Government have expended a very large sum of money in opening up the celebrated Jenolan Caves, and I believe that if the railway were brought here the number of people going to those caves would be increased, because of the distance being shortened by 5 or 6 miles, and there being no hill to climb.
683. Would any of the industries now being carried on in the district be affected to their disadvantage by the deviation? Not that I am aware of. I think it would be all to their advantage. The new Vale and the old Vale collieries would both work on this side, and in addition to that there are other properties where coal would be worked.
684. Are these industries in full operation now? I think not—they are languishing at the present time.
685. Are they affected by railway communication? I believe they are. I believe they are affected by heavy haulage rates charged for taking the coal to Sydney.
686. Would the coal companies you speak of be improved in position, if the deviation were made? Certainly, because in the first place, there would be 5 miles less freight to pay, while the wear and tear would not be so heavy, and the Commissioners ought, therefore, to be able to reduce the rates.
687. Would that apply to all the collieries and to the Shale and Oil Company? Yes; to every one of them. That was the object the Committee had in view when they recommended that the line should be taken down into the Valley and through Eskbank.
688. How would the properties be affected that did not come out on this side of the valley? They would be affected by getting a reduction in freight.
689. In the trainage on the other side? Yes; the shortening of the distance would affect them.
690. The only advantage they would have would be the shorter distance and easier grade? Just so.
691. Is there anything you think you ought to tell the Committee that would strengthen the opinion expressed by your professional representative in favour of the line? I believe it would be just possible to put down a double line for one and the same cost as a single line.

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692. Would that be so where nearly all the work was side cutting? The side cutting is very gradual.
693. Would it not entail the lifting and discharging of a very much larger quantity of material? No; I think it could all be excavated, and pitched over the side.
694. But you would not like to undertake a double line for the same price as a single line? Certainly not. I am speaking figuratively. I believe that in some of the other schemes it would be impossible to have a double line.
695. *Mr. McCourt.*] But Mr. Rock says that he could save a 70 chain tunnel and make a better line by junctioning at Bowenfels;—would your Committee agree to that? A resolution was passed by the Committee to this effect, that the object of the league was to get railway communication with the valley, and it was unanimously decided that the Committee did not care one iota which way the line went so long as it came into the valley.
696. Then you would not object to the junction being at Bowenfels? Not in the least.
697. You have already approved of it by resolution? Yes. We consider that our duty to the public and to the country is at an end, inasmuch as we have shown that a practical route exists which could be made use of. We think it is the duty of the State to bear the rest of the expense.
698. You did not bind Mr. Rock to junction at Eskbank? We did at the time. The instructions we gave him were to take a line into the valley with a ruling grade of 1 in 50, joining the main line at Eskbank and Mount Victoria.
699. Do you not think it would be an advantage to cut out the 70 chain tunnel and join at Bowenfels? I have not considered the matter. It certainly would not be an advantage to the Lithgow people.
700. Then you are considering the Lithgow people, not the cheapness of the line or the best line? I do not say that. I say that we have now procured a practical route which, in our opinion, is the best that can be made. We have not ascertained anything to the contrary.
701. If Mr. Rock says that he can cut out a 70 chain tunnel on his proposed line, do you not think that would be an advantage? Certainly.
702. Do you not think that the Committee would adopt his suggestion and pass by Eskbank? I could not say.
703. Was not the Committee formed to assist the general public? That would have to be new business.
704. Will your Committee consider the question? I cannot promise you that they will, inasmuch as they have an objection to incurring a fresh liability.
705. You do not care what happens so long as the line comes through the valley? So long as the line comes through the valley and communication is given to the outlying settlers.
706. *Chairman.*] You said just now that by the construction of the proposed line the Lithgow collieries would be at an advantage, having a better grade, shorter mileage, and so on;—would not the construction of the deviation load the capital cost of the main line? So will the Commissioners' deviation.
707. Where then is the interest to come from to pay for the deviation? I am only one of a very great many who believe that if the deviation is not made a calamity will happen which will perhaps cost the country a great deal more than a deviation would cost.
708. And, as a matter of fact, interest has to be paid on the money expended on the existing line, and will have to be paid on the construction of any deviation? Yes.
709. Therefore, how can the Commissioners reduce the freights between Mount Victoria and Eskbank when they have to pay interest on an increased capital cost? They would take it in the aggregate.
710. Load some of the other lines with it? Yes; because other people, right back to Orange, would get a great advantage from the deviation.
711. Suppose the Commissioners do not anticipate that they will be able to reduce the freights by cutting out these grades? If they had not to carry the produce so far, they would have to reduce the freights to correspond with the reduced mileage.
712. At any rate the Commissioners are the masters of the situation so far as rates are concerned? Perhaps too much so in the interests of the district.
713. Can you show how the interest on the increased capital cost would be provided for if the rates were reduced? Yes; by the natural increase in the freight to be carried.
714. That natural increase coming from the Vale district? Yes; from the outlying districts about here.
715. What area of land in this district do you think would be directly benefited by a line such as you suggest? If you confine yourself to Hartley, I should say about 8,000 acres.
716. The produce from that land would come to a station at Hartley Vale? I believe a line such as I suggest would serve about 500,000 acres, inasmuch as it would serve the people right out to Jenolan Caves, Megalong, Liddleton, Hartley, Irish Corner, Hampton, and other places.
717. Do you think those places would make use of a station at Hartley Vale? I do.
718. And that this large area of country which is now only partly used will largely increase its production? I am sure that it would. I formed that opinion from what was said by those who hold the land.
719. The large amount of produce sent by the railway would help the Commissioners to pay an extra £8,000 a year interest? I am positive that it would. A reduction in the first place would have to be set against the earnings. For instance, if they saved £5,000 in wages and wear and tear, they would have so much less to make up.
720. Is there anything else you would like to add? I do not think there is anything else.
721. *Mr. O'Sullivan.*] Nearly all the land along this route is in private hands, is it not? I think it passes through two freeholds.
722. Do you think that the owners of that land would be prepared to give the land required for railway purposes without compensation? Yes; and I believe that the people who are there would willingly submit to the betterment principle, if it were the law of the land.

William Hall, Esq., Manager, New South Wales Shale and Oil Company, sworn, and examined:—

W. Hall, Esq.
10 Mar., 1894.

723. *Mr. Davies.*] You are one of those who employed Mr. Rock to find a better route for the proposed deviation of the existing line? The matter was brought under the notice of the Board by the residents of the district, and they contributed their quota of the expense. I being a sort of *ex-officio* member of the Committee.

724. Your Company contributed through you towards the expense of the survey? Quite so. 725.

W. Hall, Esq.

10 Mar., 1894.

725. You have heard Mr. Rock's evidence, and his description of the proposed line? Yes.
726. Do you approve of his scheme? I believe that it is the only practicable scheme, comparing it with the other routes that have been submitted to us from time to time.
727. How long have you been in charge of the Company's works here? I am not located here—I belong to the Sydney Office. I have been connected with the Company for twelve years.
728. You know the surrounding district fairly well? Fairly well.
729. And make frequent visits to it? Weekly visits as a rule.
730. To what extent would your Company benefit by the carrying out of Mr. Rock's deviation? We should have to dismantle our incline and tramway, and it would probably cost us £2,000 or £3,000 to make another connection with the railway, but I do not think our people would object to that, if they could save in the mine expenses.
731. I presume that the working of the tramway is very expensive, because of the steepness of the incline? Yes. It is 3 miles altogether from the bottom of the incline to the main line.
732. If the deviation were carried out, would your Company be able to open up fresh workings? No; but we should have to make a fresh connection with the main line.
733. On the lower level? Yes.
734. Would you send your oil and shale from there by rail? We should have to do so, unless the Commissioners choose to keep the present standing at Clarence Siding. We should prefer to send our stuff away over the flat country, if we could get a siding there.
735. Would the deviation affect your output? Not at all.
736. You cannot increase it? We cannot increase it.
737. What is the extent of the Company's holdings? Four thousand acres.
738. How much of that has been worked out? About 50 acres are working, or have been worked. Most of the remainder is high land on the railway frontage, and other land in which there is no shale.
739. So you practically have only a small portion to work? Quite so.
740. At your present output, how long would your workings last? It is impossible to say; but we are living in hopes that they may last for ever. We have shale in sight for many years.
741. In the 50 acres? In the present holding.
742. Have you seen the plan of the deviation proposed by the Commissioners? I have not seen any plans, other than Mr. Rock's rough drawings.
743. You do not know anything about the Commissioners' proposal? Nothing beyond what I have seen in the daily papers.
744. The only scheme with which you are familiar is that propounded by Mr. Rock? Quite so.
745. You believe, from your local knowledge, that it is the best scheme that can be adopted? I do.
746. Is there anything you would like to tell the Committee to show how you came to that conclusion? I support the line on the broad grounds that it will benefit the whole of this valley, because I know the difficulties which the people have to contend with in bringing their produce from outlying districts to Mount Victoria. Even if they go to our siding or to Lithgow, they have these enormous hills to climb, which is a great drawback. You may see the deserted farms all about. These places have been left because the farmers have no means of getting their produce to market.
747. The railway at present is inaccessible, and that prevents the settlers from sending their produce to Sydney? Yes.
748. Does much of the local produce find its way to Sydney? Very little.
749. Most of it is consumed in the district? Most of it is locally consumed.
750. Have you any other reason for recommending the scheme? There are plenty of local people here who can speak for themselves. I speak because of my connection with others.
751. *Mr. McCourt.*] Does your Company make any complaints about the freight charges? We always try to get things as cheap as we can; but the freights are not a heavy burden upon us.
752. You are satisfied with them? We are not satisfied; but we are not complaining to any extent.
753. If Mr. Rock's line were constructed, do you think it would cheapen the rates? I do not think so. It is 4 miles from Hartley Vale to Mount Victoria, so that we should not save anything in mileage.
754. Would the coal mine proprietors save anything? Yes. The underground haulage means about 8d. a ton to them, which is a big item.
755. What is the haulage now? Seven shillings and nine pence a ton from Lithgow.
- 755½. One penny a ton per mile? It is on that basis.
756. You think you could get a better rate than that? Yes; provided the Commissioners did not put a little on.
757. *Mr. Ewing.*] Hartley Vale is about 8 miles from Mount Victoria? By road.
758. But by Mr. Rock's line? About the same.
759. How far is your siding from Mount Victoria? Four miles, and we have 3 miles of private line.
760. Therefore, if Mr. Rock's line were constructed, you would have to pay freight for 4 additional miles? Quite so.
761. But at the present time you have to lift your shale to the top of the mountains. How high is that? Six hundred feet approximately.
762. You have capital invested in your plant on which you have to pay interest, and there is the wear and tear and working expenses to be met? Yes.
763. If Mr. Rock's line were made, the Government would bear all those charges? Yes; and we could use Government waggons instead of our own.
764. What is it worth to you per ton to get your stuff up? I could not say that.
765. It is worth something considerable? Yes.
766. Supposing the line did come into the valley? Then it stands to reason that we should save something by avoiding all that haulage.
767. To lift anything 600 feet means money? Yes.
768. Therefore you could afford to pay the Government a little more? We should be paying 4d. a ton extra for haulage.
769. Do you think you could lift stuff 600 feet and pay for the wear and tear for 4d. a ton? I am not at liberty to say what it costs us to lift our stuff, but we could afford to pay 4d. a ton extra for haulage.
770. If you could put your stuff on to the Government railways on the flat, it would aid your enterprise? Yes; and that is the reason we support the proposal.
- 771.

- W. Hall, Esq. 771. *Chairman.*] I suppose you have no objection to telling the Committee what you pay to the Commissioners yearly on an average? For the last twenty years we have paid them about £9,000 a year.
- 10 Mar., 1894. 772. Has there been any increase during the last two years? The last twelve months have been very slack.
773. But until last year there was a gradual yearly increase? 1893 was a bad year; but in 1892 and 1891 we paid £10,000 a year.
774. Is there any probability of your trade lessening owing to the disuse of the materials which you manufacture? Things are a bit slack at the present moment; but that is due more to the general depression than to anything else. People are buying as little as they can possibly help.
775. Your manufactures go principally to other countries? Our shale does.
776. Where is your market for the refined products? New South Wales.
777. None are shipped away? No; there is no export of them.
778. You only export the raw material? Yes.
779. Do you think it is likely that there will be a steadily increased demand for it in foreign countries? It is one of the materials which they must have to enrich their gas. They are simply holding off now to get a lower price. If we do not get our price one half year we will get it the next.
780. You do not think there is any likelihood of the demand falling off? I do not think so.
781. Therefore, being large customers of the railway now, you will continue to be so? Yes; and with a little assistance from the Government we might do more. You asked Mr. Tabrett what interest he thought this locality would pay upon the cost of the proposed deviation. The fact is that at present from Dargan's Creek to the foot of the Zigzag practically nothing goes on to the railway, whereas if Mr. Rock's deviation were made the Department would get £9,000 a year from us alone. That would cover the interest on the outlay.
782. But you pay that amount now? Not on the deviation.
783. *Mr. O'Sullivan.*] How much do the Commissioners pay you for kerosene? Last year they paid £9,000 for lubricants of which the two shale companies here received £3,000, so that I dare say they paid us £2,000.
784. You said in answer to Mr. Davies that you were only working about 50 acres out of 4,000. You hold your land on lease? As a mineral conditional purchase.
785. I understand that you are working up to the fullest capacity? We were until we closed down.
786. Under more favourable conditions you could extend your operations? Our conditions would not help us unless the state of trade helped us. We only work for orders. If the orders are not coming in, we do not work the stuff.
787. But suppose you get a large order from the Commissioners? That would slightly increase our output; but it would not affect us to the extent you imagine.
788. *Mr. Davies.*] Have you any objections to telling the total value of your annual output of shale and oil? I have brought no statistics with me; but roughly speaking, £60,000.
789. Does it vary very much? In value?—no.
790. The lubricating oil you speak of is sold to the Commissioners? Both lubricating oil and kerosene. We have a contract with them for refined oil, and other contracts for lubricating oil.
791. Are you the only contractors for lubricating oil? No, the Joadja Creek Company joined us in the contract. American importers supply the bulk of the Government requirements; about £6,000 is paid to them.
792. Do they use any castor-oil lubricants? I believe that they are using it in a few instances; but they are trying to do away with it as much as they can. They are bringing the mixed oils more into use.
793. You get about £2,000 from the Commissioners? Yes.
794. And spend from £8,000 to £10,000 with them? Yes.
795. *Chairman.*] The Joadja Creek Company are not now working on the Southern line? Their oil-works are not in operation; but they have good stocks on hand.
796. Do they not own the works at Katoomba? Yes.
797. Where are their principal operations carried on? They have three works,—one at Katoomba, one at Joadja, and one at Sandown, in close proximity to Parramatta.
798. Is it not a fact that their greatest output is from Katoomba? They have a very large output there. Their area there is about twice as much as they have at Joadja Creek.
799. They are successful competitors with you? No; it is the case of the lion and lamb lying down together. We are working together. It is not on the question of freight on the minerals that we feel sore; but we are paying 22s. 10d. on refined oil now; and, although oil can be imported from New York for less than that, we cannot get any reduction.
800. You want a more intelligent tariff? We want a tariff laid down on commercial lines.

Mr. John William Berghöfer, farmer, sworn, and examined:—

- Mr. J. W. Berghöfer. 801. *Chairman.*] What is your occupation? I have been a farmer for the last six months.
802. Residing where? At the foot of Mount Victoria, on the Great Western road.
- 10 Mar., 1894. 803. *Mr. McCourt.*] Are you one of the Committee who induced Mr. Rock to make this survey? Yes.
804. Can you tell us what benefit the deviation would be to the district? Yes. Seeing in the public prints that the Commissioners were going to make a deviation, because the existing line is not suitable, we said that we could show them a deviation through here which would be better than any they could get the other way, and to back up our opinion we engaged Mr. Rock to survey the line.
805. But you bound him to connect two points, you did not tell him to look for the best line? We told him to find the shortest practicable route, with a 1 in 50 grade, from Mount Victoria to Eskbank, coming through the valley. He would have to come through the valley to shorten the line.
806. The route he suggests is, in your opinion, the best route? By a long way.
807. Would it open up any new country? Certainly.
808. How much? The country which would bring produce to a station here lies on this side of the Dividing Range, and extends from the western road to Lowther, Bindo, Megalong, and through Liddleton, Kanimbla, and the four Hartloys. The people who are living in this district now, have to go either to Mount Victoria, or to Bowenfels. In one case they have to climb up a very steep hill, and in the other they have twenty more miles of train carriage to pay.
- 809.

Mr. J. W.
Berghofer.
10 Mar., 1894.

809. It does not pay to convey produce up these steep hills at the present time? No; it does not. The price charged for carriage is so high that it prevents men from working land in the district. The man who does the carrying for the storekeepers on the Western Road between the River Lett and Mount Victoria charges 12s. a ton, and to that must be added the railway freight.

810. Roughly speaking, how many farms would there be within a 10 mile radius of the proposed line? About 120.

811. That is at the present time? Yes.

812. If Mr. Rock's line were constructed, would the number of settlers be increased? Yes; but it is not so much a question of the number of settlers as of the land that would be cultivated.

813. What is the average size of the holdings here now? From 40 up to 10,000 acres.

814. Have you anything else to state in reference to this line? Only that it would bring so much extra traffic to the railway by opening up fresh land for agriculture, and allowing minerals, shale, and coal, to be worked.

815. *Mr. Ewing.*] You offer no expression of opinion with regard to the route which Mr. Rock has laid out;—you believe it to be a good route, because he said it would be? I judge that his survey is correct.

816. You are not an engineer? No.

817. You advocate this line because you believe that it will open up the agricultural and mineral possibilities of the district? Yes.

818. It will give the people access to market? Yes, undoubtedly.

819. *Mr. Davies.*] Do you know anything of the other proposed deviations? Only what I have seen in the newspapers.

820. Do you know the country through which they would pass? Yes.

821. What is your general opinion in regard to them? That the country is very rough, comprising no arable lands, and I do not know what minerals it contains. There are only two mines working on the other side of the line, so that I cannot see that those deviations would benefit anybody.

822. But would it not benefit the country if the Commissioners could secure an easy grade, and a shorter route than they have at present? I do not know what the grades are, but I know that the country is very rough, and they cannot get a shorter route unless they go through this valley.

823. The grades are 1 in 50 and 1 in 60? And the distance?

824. Something more than the length of Mr. Rock's proposed line? Well, that would be an advantage to the Railway Department.

825. You do not know enough of the country to be able to say whether the Commissioners could construct a railway there at a fair and reasonable rate? They could make a railway, no doubt, but the expense would be enormous.

826. You are not an engineer, so you could not say what the cost would be? No.

827. You could not tell us what the cost of Mr. Rock's line would be? No.

828. Would there be as great difficulties to encounter in constructing that line? There would be difficulties, certainly, but of no great moment or cost of construction.

829. The great point in its favour is that it would give an opportunity to all the producers in the district to get their produce to market more easily than they can at the present time? Yes, that is one advantage.

830. What other reason is there for its construction? That it would shorten the line, and do away with three stations, viz., Bell, Clarence Siding, and Bottom Points on Zigzag.

831. *Chairman.*] How long have you resided in this district? Nineteen years.

832. Which part of it? I was 18 years on the Kanimbla Station, managing for Mr. Vickery, M.L.C.

833. You are very familiar with the whole of this valley? Yes.

834. You think that with proper means of access it could be made to blossom as the rose—that it is capable of producing a great deal more than it produces now? Yes.

835. If Mr. Rock's line were constructed, more produce would be grown? Yes.

836. How far is your holding from here? Nearly 4 miles.

837. In which direction? It lies at the foot of Mount Victoria, on Great Western Road.

838. How close would you be to Mr. Rock's line? Straight across, a little over a mile.

839. How far are you from Mount Victoria station? About 2½ miles.

840. But it is up above you? Yes, we have to go up a steep hill.

841. Has the population of this valley increased much of late years? No; and in fact you may see deserted farms, which years gone by used to be worked.

842. To what do you attribute their desertion? To the want of cheap communication with Sydney.

843. But is not communication now cheaper, or, at any rate, as cheap as it has ever been? Not as regards the conveyance of produce to Sydney.

844. Have the railway freights been increased since the line was opened? Not that I know of.

845. Are the freights now higher than they were before the line was opened? They had a local market then.

846. What has become of that? It has gone away with the bullock teams. When there was traffic along the road all the farms were worked; but since then there has been no local market.

847. Their constituents were the teamsters who travelled along the road? Yes; to a certain extent.

848. But that would be a very small constituency for a district like this? The demand then was a very large one. Now we have to compete with the Sydney market.

849. What are the stations, sheep or cattle runs? They run both cattle and sheep.

850. Do they truck their cattle to Sydney or drive them there? From Kanimbla Station we supplied the local market, and trucked other cattle to Sydney.

851. From where? From Mount Victoria.

852. Did others do the same as you—did they send by train or did they drive their cattle to market? They sent them to Sydney by train.

853. You can only express the opinion that if the line were constructed more produce would be grown and sent by railway to Sydney? Yes.

854. What is the extent of your holding? One hundred and thirty acres.

855. Is there anything else you would like to state? Only as to the advantage of shortening the distance between Sydney and the Jenolan Caves.

856. How much would the deviation shorten it? Well, it is not so much the shortening of the distance
as

- Mr. J. W. Berghöfer.
10 Mar., 1894.
- as the doing away with the necessity of climbing the big hill. Most of the people coming from the caves have to walk up the hill very often.
857. If the line were constructed would the Jenolan passengers get out? I should say they would get out here.
858. Is there much traffic between Mount Victoria and the Jenolan Caves? Yes; I am told that there were 1,200 people there last year.
859. Presuming that they came to Hartley Vale, that would only give the railways seven more miles to charge for? But no doubt many people would go who do not go now, because of the necessity of walking up the big hill at times.

Mr. John Young, fruitgrower, sworn, and examined:—

- Mr. J. Young.
10 Mar., 1894.
860. *Chairman.*] What are you? I am a fruitgrower.
861. Where are you residing? At Little Hartley.
862. About $4\frac{1}{2}$ miles from here? Three and a half.
863. *Mr. Ewing.*] How long have you been here? About three years.
864. You offer no opinion, I presume, in regard to the engineering part of this work? No.
865. You simply want to tell us how much more productive the district would be if you had a proper way of getting your produce to market? Yes.
866. Where do you send your produce now? We cannot send it anywhere scarcely. It must be consumed locally.
867. What do you grow? All English fruits.
868. Where do you sell your fruit? We have to depend upon its being sold by the hawkers coming through the place; but that does not pay just now, and is one of the reasons why I am so anxious to see the railway start. It would open up a possibility for the industry which does not exist at the present time.
869. Where would you send your fruit if the railway were made? To Sydney. At present soft fruit gets destroyed by the long road cartage; but the same thing would not take place if it were carried by rail.
870. You believe that if you got the fruit to Sydney you would be able to sell it? Yes.
871. I presume you are aware that soft fruits are grown nearer to Sydney than Little Hartley? Yes.
872. But you believe that you could compete with those places? Yes; I believe this is the best district in New South Wales for growing English fruits.
873. You believe that you could best get rid of your fruit in the Sydney market? Yes.
874. You want to go there? Yes.
875. You cannot at present cart your produce to the railway? Not very well.
876. You want the railway to go through here in order that you may get your fruit away promptly? Yes.
877. You would increase your area under cultivation if the railway came here? Certainly.
878. A considerable quantity of land in this valley is suitable for the cultivation of fruit? Yes; there are many thousands of acres of suitable land, and the fruit industry, so far as I can understand, is still in its infancy.
879. Do you know anything about farming of other kinds? No.
880. Do you know anything about mineral matters? Only what I hear.
881. You offer no opinion upon them? I can only say what has been told to me by people who have been living longer in the district than I have. I have always understood that this district is very rich in minerals of all descriptions.
882. This is your case as a fruitgrower:—If the railway were constructed you would grow large quantities of fruit and send it by train to Sydney? Yes; and I know three or four gentlemen who would be quite prepared to take up land here if there were suitable communication with Sydney.
883. *Mr. O'Sullivan.*] Fruit here comes in later than it does on the coast? About a month later.
884. Therefore you would have the market to yourselves, if you could send to Sydney, and be certain of a price? That remains to be proved.
885. You would not have to contend with such keen competition as would be met in the full season? No.
886. Therefore there is a strong probability that the district would be considerably developed by the construction of a railway? I know that it will.
887. *Mr. McCourt.*] Do you grow apples here? Yes.
888. Have you sent any to Sydney? No, my place is rather new yet. The only fruit I have sent is strawberries.
889. Has anyone sent apples from here? No, not that I know of.
890. You do not know what the freight is per case? No.
891. *Chairman.*] Have your strawberries paid you? Not yet.
892. The strawberry is a delicate fruit to send any distance? I fancy the road carriage destroyed them.
893. Is there anything else you would like to state? No.
- 893½. You know generally the route of the proposed line? Yes.

WEDNESDAY, 14 MARCH, 1894.

Present:—

JACOB GARRARD, Esq. (CHAIRMAN).

The Hon. WILLIAM HENRY SUTOR.
 The Hon. JAMES HOSKINS.
 The Hon. FREDERICK THOMAS HUMPHRY.
 The Hon. JOHN DAVIES, C.M.G.
 The Hon. WILLIAM JOSEPH TRICKETT.
 THOMAS THOMSON EWING, Esq.

WILLIAM CHANDOS WALL, Esq.
 WILLIAM McCOURT, Esq.
 JOHN CASH NEILD, Esq.
 EDWARD WILLIAM O'SULLIVAN, Esq.
 CHARLES COLLINS, Esq.
 HENRY DAWSON, Esq.

The Committee further considered the proposed Deviation to avoid the Lithgow Zigzag.

Hugh McLachlan, Esq., Secretary to the Railway Commissioners, sworn, and further examined:—

894. *Chairman.*] When you appeared before the Committee last Thursday. You were not quite prepared then to give us the views of the Railway Commissioners on this matter, owing to the absence of Mr. Eddy. Are you now in a position to give us their views as to the desirability of constructing a work similar to that which we have under consideration? Yes. Since I was last before the Public Works Committee, I have made myself acquainted with the circumstances under which a proposal was made by the Railway Commissioners for cutting out the Lithgow Zigzag, upon which it would appear from the questions put by the Chairman of this Committee on a previous occasion the Committee had not been fully informed, and I am directed by the Railway Commissioners to make the following statement:—

H.
 McLachlan,
 Esq.
 14 Mar., 1894.

Some years ago, at the suggestion of the Railway Commissioners, the then Minister for Works approved of an investigation being made in order to discover a practicable route for the purpose. It was proceeded with up to the stage of particulars of several schemes being submitted, the cost of which, however, appeared to the Commissioners to be too great. Further investigations were being made when, by the direction of the present Minister for Works, the officers were withdrawn, he having then expressed the opinion that the work was one which should be carried out by the Railway Commissioners.

In view of the decision of Mr. Lyne, the Railway Commissioners had some further investigations made in the direction of discovering a route for a short deviation which would be within their powers under the Railway Act, for the purpose of cutting out the Zigzag, and a scheme, which is now known as Scheme No. 1, was partly prepared, but was abandoned in consequence of there being no probability of the money being available for such a purpose.

Some few months ago, in a conversation the Premier, Sir George Dibbs, had with the Chief Commissioner, on the question of providing work for the unemployed, Sir George having expressed his determination not to approve of anything in the shape of relief works, but at the same time being desirous of providing work of a profitable nature, it was suggested by the Chief Commissioner that rather than undertake works of a doubtful character, so far as financial return was concerned, it would be well to carry out works of the nature of cutting out the Lithgow Zigzag.

The Premier at once recognised that this would be a work of a most desirable nature, which would employ a large number of men in ordinary pick-and-shovel work, and expressed a wish that it should be put in hand with the least possible delay. Steps were then taken to have the plans completed, and the line is the most direct one that can be made, and the economy in working will amount to more than the interest on the capital expended; and in view of the fact that the Commissioners had been urged to bring the matter forward at once, they made the proposal to the Minister for Railways as detailed in their letter of November, 1893.

Subsequently, the question of who should carry out this work was, the Commissioners are informed, raised by the Minister for Works, when he appears to have expressed directly opposite views to those laid down in his previous decision. Upon the wish of the Government upon this point being intimated, and the Commissioners being made aware of the altered views of the Minister for Works, the plans were completed and sent forward to the Department of Works.

While this scheme, which is merely a deviation, has received, so far as the Railway Commissioners are concerned, more attention than others, now that the question is one referred to the Public Works Committee, the range of the inquiry becomes broadened, and schemes for longer routes can be brought under review and dealt with as a new railway, which is altogether different from a deviation.

This being so, there is another scheme under investigation by the officers of the Commissioners, which it is thought may prove even better, both for working and financial results, so far as return on the capital invested is concerned, than any now before the Committee, and it is for these reasons that the Commissioners asked that the consideration of the whole subject might be so dealt with as to enable them to have the inquiries in reference to this route completed; and, as I stated at the last meeting, they consider that the request made was a reasonable one, and one which would commend itself for favourable consideration. It was hoped last week that some definite opinion upon this alternative route could be supplied to-day, but owing to the inclement weather it has been impossible for the surveyors to proceed with the work, and practically it has but very little advanced.

As bearing upon the question, and to show the views of the Commissioners on the point of a short deviation, versus avoiding lines several miles in length, I am directed by the Commissioners to quote their reply on the 20th August, 1892, to a deputation that waited upon them at Mount Victoria, on the subject of a line through the Hartley Vale, stated to be preferable to the Dargan's Creek deviation.

The Commissioners replied that they had already made inquiries on the subject, and that this proposal would probably prove far more costly, and less profitable, than the deputation anticipated; and as it would be, moreover, virtually the construction of a new line, they did not consider it a work which could be undertaken under the Railway Act. They did not propose to proceed any further in the matter themselves, and referred the deputation to the Minister for Public Works.

The position in which the Railway Commissioners have been placed in this matter is as I have described; but I am directed to point out that as the work, as a deviation, has been taken out of their hands, and is being dealt with as a new line of railway under the provisions of the Public Works Act, the duties of the Railway Commissioners in regard to the matter are clearly defined by Section 13, sub-section 1. By that section the Railway Commissioners are required, before such works are submitted to the Public Works Committee, to report upon the probable cost of construction and maintenance of such lines, and also their estimate of the financial result to the State therefrom; and had this course been pursued, the whole of the schemes now before the Public Works Committee would have received the careful consideration of the Commissioners, and a comprehensive report would have been made thereon, whereas they have been placed in the position of making a proposal which is now apparently being dealt with as in opposition to other schemes which were put forward without any previous reference to the Railway Commissioners, and they cannot give their opinion as required by the law on such schemes until the whole of the details are submitted to them, so that they may carefully consider their respective merits in connection with the object they wish to accomplish, as they have not only to look at the question of cost of the scheme, but whether it will accomplish the various results they had in view when suggesting the work.

The Commissioners now desire to ask that the proposed schemes may be submitted to them for report, as they should have been under the terms of Section 13, sub-section 1, of the Public Works Act. If, however, the Committee decide to disregard the provisions of the Public Works Act in this respect, the Commissioners are quite prepared, if the Committee will formulate clearly the information they require, to do their utmost to supply it, although without the schemes being submitted in their fullest details the Commissioners will be at a great disadvantage, and the information may not be of that accurate character which it would be if provided in the manner required by the Public Works Act.

The information asked for by the Hon. Mr. Hoskins and the Hon. Mr. Humphery is now prepared, and I now hand it in in the form of a return.

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895. Have you the report with you? Yes.
896. *Mr. Hoskins.*] Will you kindly read it? It is difficult to go back to the earliest times, so far as accidents are concerned. The records are not kept so long; but I thought it would be wise to give you the particulars of the accidents which have occurred since the Commissioners took office—that is, for five years. During that period we have had three accidents on the Zigzag.
897. *Chairman.*] Could you not have gone back further than five years,—that seems to be a very short period out of twenty-six years? I do not know that the records have been kept and handed down.
898. But I presume that all papers connected with the working of the railways were handed over to the Commissioners when they took office? It would be difficult to say whether the records of an accident, say twenty years ago, are in existence. We know, however, what has happened since the Commissioners have taken office.
899. Then we will take what you have got? The following is the return:—

ACCIDENTS on, or resulting from, the Working of the Lithgow Zigzag:—

Date.	Particulars of Accident.	Injury and damage resulting from Accident.				Cost to the Department				
		Number of Persons.		Property.		Compensation.		Repairs to		Total.
		Injured.	Nature of Injuries.	Rolling Stock.	Live Stock or Goods.	Personal Injuries.	Damage to Goods, &c.	Rolling Stock.	Per. Way.	
8 Oct., 1891.	Down Goods Train became divided at top points; nineteen vehicles ran down middle road into the buffer stops at the bottom points.	1	Head cut, shoulder injured.	4 D's, 1 C.W.- and Brake-van smashed.	...	£ 30	£ s. d. 600 19 5	£ s. d. 1,000 0 0	£ s. d. ...	£ s. d. 1,630 19 5
6 Jan., 1892.	Double train pushing into dead-end top points pushed rear engine over buffer-stops.	3 employees	Slight injuries.	1 S.V. damaged; tender of engine damaged; 2 buffers of B.V. broken.	...	...	...	26 17 0	...	26 17 0
13 April, 1892.	Double train backing into dead-end top points the rear engine stopped suddenly, whilst other engine was giving steam; trucks buffer-locked and derailed.	...	...	1 C.W. smashed.	9 cattle killed.	...	45 0 0	13 0 0	21 10 0	79 10 0

900. *Mr. Hoskins.*] Those are all the accidents that have occurred during the last five years? Yes. Regarding Mr. Humphery's question I may mention that the cost of the Lapstone deviation to date is £44,637 9s. 5d. The account is not yet closed. There is a little dispute to be settled, but if the amount is put at from £45,000 to £50,000, it will, I think, be correct. I have a report from the Traffic Superintendent as to the working of the Lapstone tunnel, as follows:—

Out-door Superintendents' Office, Northern and Western Lines, Sydney, 10 March, 1894.
New South Wales Railways.

D. Kirkcaldie, Esq., Chief Traffic Manager, Sydney.—

I have to report that since the opening for traffic of the Lapstone tunnel, on the 18th December, 1892, to the 28th of February, 1894, a saving has been effected of about 679 up and 354 down goods trains, and 36,545 train-miles, between Katoomba and Penrith, in comparison with the past system of working over the Lapstone Zigzag.

The following is a summary showing the number of vehicles conveyed and the number of trains ran during the period under review, as compared with the old method of working:—

Summary.	Miles incurred.	Miles saved.
2,987 up goods trains conveyed equal to 80,637 loaded vehicles, averaging 27 per train, from Katoomba to Penrith, through the Lapstone tunnel, at a cost of 31 miles per train	92,597	
3,666 up trains would have been required to work the above vehicles, at an average of 22 per train, from Katoomba to Penrith, over the Lapstone Zigzag, at 31½ miles per train	115,479	22,882
2,316 down goods trains conveyed equal to 64,060 loaded vehicles, averaging 27½ per train, from Penrith to Katoomba, through the Lapstone tunnel, at a cost of 31 miles per train ...	71,796	
2,670 down trains would have been necessary to work these vehicles [64,060], at an average of 24 per train, from Penrith to Katoomba, over the Lapstone Zigzag, at 31½ miles per train..	84,105	12,309
		35,191
2,709 up and down passenger trains were worked through the Lapstone tunnel from the 18th December, 1892, to 28th February, 1894, on which a saving of ½ a mile per train is effected as compared with the old route, the Zigzag	1,354	
Approximate saving		36,545

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901. *Chairman.*] You have given us so many miles—the question is, what you charge? The cost per train-mile working is about 4s. 7½d., and the saving would come to £8,464.

902. *Mr. Wall.*] Does that cover the whole of the expenditure on the mountains? No; that is the Lapstone Zigzag.

903. *Chairman.*] You were subsequently asked by Mr. Lync for a return showing the cost of all improvements from Penrith to Baskbank? That is being prepared. I will send it into the Committee. The statement I have handed in is the statement of the Commissioners, and I do not know that I have any more evidence to offer.

904. I find by a *précis* which has been handed to us by the Works Department that there is a discrepancy in the historical record which you have given us. I think you told the Committee just now, first of all that the Minister for Works, some years ago, at the suggestion of the Railway Commissioners, approved of an investigation being made in order to discover a practicable route for the purpose of the deviation? Up to that stage several schemes had been submitted, the cost of each of which, however, appeared to the Commissioners to be too great. Further investigations were being made, when, by the direction of the present Minister for Works, the officers were withdrawn, he having expressed the opinion that the work was one which should be carried out by the Railway Commissioners. The statement of the Public Works Department is as follows:—

On the 15th March, 1892, Mr. H. Deane, who had succeeded Mr. Whitton as Engineer-in-Chief for Railway Construction, reported to the Minister that the Railway Commissioners were desirous of testing the possibility of connecting the western line at Dargan's Creek with the lower points of the Zigzag, traffic considerations rendering the cutting out of the Zigzag desirable, if it could be done at a reasonable cost. He, therefore, asked the approval of the Minister to a thorough investigation being made into the matter by the surveyors of his branch. The Minister, on the 1st April, minuted that the matter was one entirely for the consideration of the Commissioners; but he added that should they be desirous of testing the practicability of the deviation, he had no objection to the Engineer-in-Chief carrying out the survey. On the matter, however, being again referred to the Minister for approval for the expenditure of about £300, he ordered it to stand over, and in consequence the surveyors who had been instructed to proceed with the work were recalled. . . . The information in the possession of the Department appears to have been sufficient to enable Mr. Burge, the engineer for trial surveys, to submit a scheme to the Engineer-in-Chief. On the 26th April, 1892, he suggested two alternative proposals. . . . A copy of this report was forwarded by Mr. Deane to the Railway Commissioners, and in so doing he stated that as the surveyors were withdrawn before any real work was done, he was not in a position to offer any opinion on the report.

You seem to infer by your statement that the survey of these three routes was completed by the Construction Branch, and thought by your Department to be too large? I think you will find that the statement of the Commissioners is fully borne out. The Minister did approve of the survey. Mr. Burge did send in a report, and with that report an estimate was given, the figures being £260,000.

905. *Chairman.*] The *précis* to which I have referred states:—

Mr. Burge pointed out that the objection to all the routes was the great length of the main tunnel on a steep grade, and that it was impossible to predict which was the best, without a careful survey of each. He also appended an estimate, which amounted to £260,000.

Mr. Deane said nothing was complete? The Commissioners simply say that before the work was completed the surveyors were withdrawn, but the cost, so far the matter was before them, was too great—from £260,000 to £300,000.

906. Then you say that the matter was allowed to remain in abeyance until the question of the desirability of finding work for the unemployed was raised. You say—

Some few months ago, in a conversation the Premier, Sir G. Dibbs, had with the Chief Commissioner on the question of providing work for the unemployed, Sir George, having expressed his determination not to approve of anything in the shape of relief works, but at the same time being desirous of providing work of a profitable nature, it was suggested by the Chief Commissioner that rather than undertake works of a doubtful character, so far as financial return was concerned, it would be well to carry out works of the nature of cutting out the Lithgow Zigzag. The Premier at once recognised that this would be a work of a most desirable nature, which would employ a large number of men in ordinary pick and shovel work, and expressed a wish that it would be put in hand without the least possible delay. Steps were then taken to have the plans completed, and the line is the most direct one that can be made, and the economy in working will amount to more than the interest on the capital expended. And in view of the fact that the Commissioners had been urged to bring the matter forward at once, they made a proposal to the Minister for Railways, as detailed in their letter of November, 1893.

The information furnished to us by the Department is not quite in accord with your statement. The information furnished to us states:—

On the 24th November, 1893, the Railway Commissioners addressed a communication to the Minister for Railways, the Hon. John See, in which they stated that ever since they had been in office the disadvantage of passing traffic over the Lithgow Zigzag had been continually before them, as well as the continual risk in working, consequent on trains loaded with passengers having to be propelled both up and down over the intermediate section of the Zigzag. The cutting out of the Lapstone Zigzag had so greatly facilitated the working that they felt justified in asking the Government to consider the expediency of providing sufficient money to carry out a further alteration of the line to permit of the Lithgow Zigzag being avoided. The work they stated would in all ways be beneficial, and more than return interest on the capital expended. The scheme they proposed was one for leaving the existing line at a point near Dargan's Creek.

Are we to understand, then, that, before the Commissioners communicated with the Minister as to the desirability of cutting out the Lithgow Zigzag, this conversation with the Premier had already taken place? Yes.

907. You say in one part of your statement that the No. 1 scheme was only partially completed so far as being ready to go on with the work was concerned? It was what you might call merely a survey. The details for contract were not worked out.

908. You state:—

Steps were then taken to have the plans completed and the line is the most direct one—is the most direct one that can be made.

You came to the conclusion that No. 1 was the best which could be suggested? Yes; the plans gave that idea so far as they had been prepared.

909. I should like to draw your attention to this paragraph in the *précis* which has been put before you:—

On the 22nd January the Railway Commissioners forwarded, in compliance with the request which had been made to them, plans, sections, &c., in connection with the scheme which they proposed. They also forwarded a report from Mr. Foxlee accompanying the plans, &c., in which he stated that the estimated cost of the deviation proposed by him was £225,000, exclusive of land and fencing. That the length of the proposed deviation was about 2 miles 53 chains, the ruling grade 1 in 50, and the sharpest curve 12 chains radius. The tunnel would have a length of about 2,840 yards. In forwarding the plans the Commissioners wrote the following minute:—“As the scheme is one that has been devised and worked out in detail by Mr. Foxlee, the Commissioners think that he should be associated with Mr. Deane in the carrying out of the work.”

Does not that paragraph show that scheme No. 1 was absolutely completed? I do not think the working drawings and quantities were completed. The plans were completed sufficiently to enable an estimate to be given, but they could not start the work on the plans prepared.

910-11. The Commissioners say in their minute:—

As the scheme is one that has been devised and worked out in detail by Mr. Foxlee?

That is so far as showing the practicability and cost of the scheme. But in order to start the work you would require working drawings and quantities which, I understand, were not prepared. It is only a matter of detail.

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912. But sufficient detail had been obtained to enable an approximate estimate of the cost to be formed? Certainly; the cost, the grade, the practicability of the scheme, length of tunnel, and everything else.
913. From what you say, the Commissioners were of opinion that what they proposed was a mere deviation of the existing line, which they believed they were empowered to carry out under the provisions of the Railways Act? Yes.
914. Now they think the position is altered, owing to the Cabinet having decided that the work is one of those which must be carried out by the Construction Department? I do not say anything more than what the minute conveys—that it has gone into a wider and broader scheme.
915. May I ask the reason why the Commissioners, after having sent the whole of their plans and details to the Construction Branch in accordance with the minute of the Cabinet, have continued in the field surveying for other routes? I could not say.
916. I think you told the Committee during your last examination that between March or April, 1892, and November, 1893, the various schemes then suggested by Mr. Burge had been looked into by the Commissioners' engineers? I do not recollect mentioning that—not in that way.
917. But, as a matter of fact, all the details of any proposed deviation up to that date, namely, April, 1892, were sent to your Department by the Construction Branch, were they not? No. So far as I am informed, the construction plans and details have never yet been submitted to the Commissioners. That is why the Commissioners say they are not in a position to report on the whole of the scheme.
918. You are now referring to the later scheme. I want to know whether, in 1892, when, by order of the Minister for Works, the then surveys were arrested, the reports of Mr. Burge, and all the details then in the Construction office as to any possible deviation, were passed over to your Department? No; a copy of Mr. Burge's report was passed over, but I do not think the details of the plans were passed over.
919. Then you believe that in April, 1892, Mr. Burge's report on the then three possible schemes which he outlined, and Mr. Deane's report, were the only documents which came to you? I believe so. Mr. Deane, I think, brought a rough sketch plan round, but no details.
920. Are you aware whether the Construction Branch did pass over to the Railway Commissioners in April, 1892, all the information they then had at their command as to any possible deviation of the Lithgow Zigzag? No; I do not think they did.
921. If we have the assurance of Mr. Deane that all the information he had up to that point was passed over to the Department, would that modify your view? Yes; he ought to know.
922. Between the time you were in the possession of Mr. Burge's report, and of Mr. Deane's report of April, 1892, was anything done by your Department to test the proposed schemes submitted by Mr. Burge? Not that I am aware of.
923. Are you aware that the scheme which you have now submitted, which is called No. 1, is one of the schemes suggested by Mr. Burge? No; I am not aware.
924. Are we to understand that the engineers of the Department put the information contained in Mr. Burge's report on one side altogether, and started new ground? I could not say.
925. But you are able to tell us whether Mr. Burge's report and Mr. Deane's report were sent on to your engineer? I daresay the engineer saw them. They were sent to the Commissioners. I could not say where they went after that.
926. The Commissioners state that this matter having come before the Public Works Committee for consideration, they are of opinion that the aspect of the case is altogether altered, and that the proposed deviation is now being considered in the light of a new railway. Can you give us any reasons why the Commissioners view this work in the light of a new railway, inasmuch as it will tap no additional revenue-producing country, but is merely a proposed deviation to cut out a certain objectionable grade? Under the Railway Act the Commissioners have power to carry out the deviation. If it is to be considered in the light of a new line of railway, and referred to the Public Works Committee, their minute clearly shows that they ask that it should be dealt with in the same way as all other public railways.
927. But have you not already, in your evidence, given us all the information upon that point, namely, that the interest on capital to carry out your No. 1 scheme, would amount to £9,000 a year, and that it would save you £10,000 a year in working. There is no additional traffic coming in? But as a matter of fact, that is not the whole of the business. The Commissioners say that they believe they can get a better proposal than that if time is allowed them. Then, of course, there are other schemes before the Committee which the Commissioners say they would like to have submitted to them, so that they could give a comprehensive report as to which, in their opinion, is the best.
928. But as a matter of fact, is it the function of the Commissioners, in furnishing a report to Parliament upon any new line, to discuss which way that particular line should go, or is it their function to report on the estimated cost and the probable amount of traffic on a particular line of railway? It is their practice to report on a particular line; but this differs from an extension of a railway, because all the schemes practically bear to the same end. But there is a difference of opinion as to which is the best.
929. Have the Commissioners, in any of the reports which they have furnished Parliament on a proposed new line of railway, ever entered into the question of rival routes, or have they not confined their attention exclusively to the estimated cost of working a line, and the estimated revenue to be derived from it? As a rule—yes.
930. Is it not so invariably;—can you tell me of any instance in which there is a departure from that rule? In one or two cases they have suggested where slight deviations might be made; but, as a rule, the practice has been to report on a line as submitted to them.
931. You cannot give us any reason for considering this a new line of railway, and, therefore, to be brought under the provisions of the Public Works Act, other than the fact that the construction of it has been taken from the Commissioners' Department, and placed under the Railway Construction Department? I can say nothing more than what is contained in the statement.
932. *Mr. O'Sullivan.*] I understand from your evidence that the No. 1 scheme is altogether abandoned? No; I do not say that. The Commissioners want time to judge as to which is the best scheme, and to have all the details before them.
933. Although the Commissioners have not abandoned the scheme marked No. 1, they have sent out a party to survey another route? Yes.
934. What are the names of the gentlemen who are out surveying? Mr. J. B. Suttor and Mr. Baxter are the two principal officers.

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935. Do you know what instructions they have received? To try and get the most practicable route between the points concerned.
936. But have they any particular route to take to the north or south? To the north.
937. Are they confined to the inspection of a route to the north? Practically.
938. And do the reports received from them favour the idea that they will obtain a more favourable route there than No. 1? Yes; a better grade.
939. Do you know what part of the valley that line will come out in? It will come between the bottom points and Eskbank. But the Commissioners are getting all the details, and it is rather anticipating. It is mentioned in the report that owing to the bad weather the officers have not been safe to push on as fast as the Commissioners expected.
940. You have put in a statement showing the number of accidents on the Zigzag in the last five years, in regard to which the cost totals up to £1,700 odd;—do you think that is a fair average statement as to the number of accidents which have happened since the Zigzag was opened twenty-six years ago? Of course the traffic increases every year. Each year you are more likely to have an accident on account of the greater volume of traffic. So far as my experience goes there have been more accidents recently. Still it would be difficult to strike an average so far back.
941. But do you think that is a fair average number of accidents for five years, dividing the twenty-six years by five? No; we ought not to have accidents at all. The number of accidents referred to is more than should happen. You will see that they have been due, practically, to the Zigzag.
942. But as a matter of fact, the Zigzag has now been opened twenty-six years? It was opened, I think, in 1869.
943. During that long period have there been many accidents other than those which you have mentioned as occurring during the last five years? There have been other accidents.
944. But have there been many accidents? Not a great number to my knowledge.
945. Is it not a fact that very few accidents have happened on the Zigzag? You could not call them very few. Three accidents in five years is rather a large number on a small section of the line.
946. But I am alluding to the time outside the five years referred to? I could not speak from recollection as to the number.
947. *Mr. Dawson.*] Have not all the accidents occurred since the Commissioners came into office? No. I recollect that we had an accident about ten years ago. There was a dispute as to whether it was due to the Zigzag or to bad couplings. A great deal of damage was done, and one man was killed. That was at the bottom points.
948. *Mr. Davies.*] I understood you to say in answer to a question put by the Chairman that the Railway Commissioners have a number of surveyors engaged in investigating some route other than the one which has been submitted by the Commissioners known as No. 1 scheme? Yes.
949. By whose authority are the Commissioners making this investigation? By their own.
950. Is it not the usual practice when the Constructing Department of railways has charge of a public work of this character to refer the whole matter to them, and that the only inquiry of a public nature which is made is made through that Department? In doing what they are doing the Commissioners are acting entirely within their province. As a matter of fact, when public works have to be carried out such as the Lapstone tunnel, for instance, the Commissioners have asked the Public Works Department to make a survey for them. The surveys and plans in connection with that were practically prepared by the Construction Department.
951. But that was a work carried out by the Commissioners? Yes; but the plans were made by the Public Works Department.
952. But you are aware that this work is not now in the hands of the Commissioners. It is, by the authority of Parliament, entirely out of their hands, is it not? Yes; it may be.
953. By what authority, then, do the Commissioners go behind the back of Parliament and make this inquiry of a public nature, with public officers? They make it with their own officers. The Commissioners think that they can get a cheap and a better route, and surely they are not open to censure for doing that.
954. Cannot they give the information, if they have a better route, to the proper construction officers of the Railway Department? From what we have heard this route was suggested to the construction engineers a couple of years ago, but it was not followed up.
955. You refer to the route suggested in 1892? Yes.
956. Is it not a fact that the Commissioners, through their officers, surveyors, and engineers, actually prepared the No. 1 scheme to cost £225,000? Yes.
957. Has not every detail been prepared ready for the calling for tenders to carry out that work? The details of construction have been prepared. The surveys have been made and plans have been prepared by the Existing Lines Branch.
958. And as a matter of courtesy the whole matter was submitted to the Minister for Public Works? To the Minister for Public Works.
959. And if the Minister for Railways had given his assent to the proposal in all probability tenders for the work would have been called for at the present time? I could not say that.
960. What was the object, then, of asking the Minister to give his assent. If you are not ready, why ask the Minister. If the work was not sufficiently ripe to be carried out, why ask the Minister for his authority? Certainly the work could have been carried out soon afterwards.
961. And it was the intention of the Commissioners to carry it out? I do not know whether that is so expressed. If they had been asked by the Government they would have done it. The letter of November, 1893, will speak for itself. They recommended it as a desirable work. As to the details, I could not speak positively.
962. But they have the details from their officers? Those details were passed over to the Department of Public Works.
963. And they were so satisfied with the details received from their officers that they recommended the work to be carried out, and submitted it to the Minister? Yes.
964. You tell us that they suddenly found that a better scheme can be submitted than the one which has been submitted? I do not say that. I say that they think that what might prove to be a better scheme is at present being explored and surveyed. Therefore, it would be wise to wait until the whole of the details have been got out, so that they can report as to which, in their opinion, is really the best scheme.

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965. Do you not think, seeing that this matter is absolutely out of the hands of the Commissioners, by the authority of Parliament, and handed over to the Construction Department, that if you have any information at all to convey it should be conveyed to the Construction Department? I could not say that.
966. Then why should we have this divided authority? The Railway Act divides the authority of construction and the maintenance of railways. Of course, this work is largely associated with the maintenance of a railway. If it had been a new railway entirely, disassociated from an existing line, the Commissioners probably would never have interfered.
967. Then you regard this as part of an existing line? It is, practically. It is a deviation of an existing line.
968. In the statement which you have submitted to the Committee, you voiced the opinion of the Commissioners to the effect that they regard it now as a new railway? They say the matter is assuming a wider aspect than when first submitted—that they are going further away from the line. It is a matter of degree.
969. Do you think it is a proper or a prudent thing that the Commissioners, or any other public body appointed by an Act or by the authority of Parliament, or by the Government and Executive Council, should have authority to spend £250,000 without reference to the Public Works Committee? I do not think I could express an opinion on that point.
970. You are aware that the Public Works Act does not give authority for the expenditure of a larger sum than £20,000? Yes; outside the railways.
971. That is the will of Parliament? Yes; of course the Railway Acts gives the Commissioners power to maintain the railways.
972. But you are aware that the Act has been amended so as to give power to the Commissioners to spend a certain sum of money? Outside the Colony.
973. Evidently showing that the intention of Parliament was that no Department should spend a larger sum than £20,000 without the authority of Parliament? The Railway Act hands the whole management and control of expenditure on the railways to the Commissioners, subject, of course, to the lump sum to be expended being voted by Parliament.
974. You still think, notwithstanding that Parliament has taken this matter out of the hands of the Commissioners, and have referred it to the Committee as a work which, if recommended and carried out, should be carried out by the Construction Department;—you still think that the matter should be in the hands of the Commissioners? Certainly.
975. Coming back to the scheme submitted by the Commissioners to the Minister, you are aware that there is a tunnel of nearly 2 miles in length? Yes.
976. Are you in a position to express an opinion as to whether it is wise on the part of the Commissioners to have on a line of road a steep grade? One in fifty is not a steep grade, compared with others.
977. Do you think it is wise to have these long tunnels on a single line? It is not if you can avoid them, but there is no evil in them, and no risk. There are much longer tunnels than this in other places. They have a longer one on a single line in New Zealand.
978. Do you regard the first tunnel through Lapstone Hill as a success? Yes.
979. Have you no complaints from the travelling public? You always hear complaints about a tunnel.
980. Is there not a universal complaint against it? No; not that I have heard of. I have travelled through it frequently.
981. And you hear no more complaints than in regard to any other tunnel? Naturally, people do not like going through a dark place, and the smoke comes in.
982. And it is very hot whilst you pass through? You pass through in a minute and a half on the passenger journey.
983. What is the length of that tunnel? About 600 yards.
984. What was the cost of the work? From £45,000 to £50,000.
985. Was there not an estimate of some £60,000? No; I think not.
986. You are quite sure of that? Not to my recollection.
987. And you represent that the saving effected by the deviation on the first Zigzag in train mileage would be £8,000 or £9,000 a year? Yes; it is fourteen months since it was opened.
988. You estimate that, providing the deviation as proposed by the Commissioners is carried out, it will make a difference of £9,000 or £10,000 a year? That is the estimate of the officers.
989. A sum equal to that which would pay the interest on the capital cost? Yes.
990. What commercial advantage would it be to the Railway Commissioners if the deviation were carried out as proposed by them? You would do away with the Zigzag, which is an awkward section to work, and instead of being limited, perhaps to twenty-five trucks, you would be able to haul over forty. If at any time you stood at Clarence tunnel and saw a train pass up the 1 in 33 grade, you would notice the strain, wear, and tear. There is a great economic advantage, owing to the tremendously bigger load you can haul.
991. Would you be able to take a much larger load if the grade was altered as suggested in this deviation? Yes, very much larger. I think, in fact, if you got a 1 in 60 grade the load would be about double, so that one engine would do the work of two.
992. At the present time you have to use two engines? Practically, for a full load.
993. For a portion of the journey? Yes.
994. Would you be able to take a double load right to Sydney with one engine? You would have to stage it.
995. At the present time you have to do that? Yes.
996. So that the only advantage would be on a certain length of haulage? Yes, that is a great advantage.
997. As Secretary to the Commissioners, you strongly recommend a deviation of some character, so as to ease the grade? Yes.
998. Whether No. 1, 2, 3, or 4 scheme is carried out, you regard it as highly necessary that something should be done in the interests of the traffic across the mountains? Yes.
999. *Mr. Hoskins.*] How do you make out a saving of £9,000 a year in working the Lapstone Zigzag? We have saved so many train miles.
1000. You are given to understand, from information conveyed to you by the Traffic Department, that £8,000 or £9,000 a year are saved by the working of Lapstone Hill tunnel as against the Zigzag? Yes.

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1001. Have the authorities conveyed to you the impression that by doing away with the Lithgow Zigzag there will be a saving in the cost of haulage on the line, between Mount Victoria and Bathurst? There will be a great saving.

1002. In what way? By increasing the train loads, and making one engine practically do the work of two.

1003. But there will be a longer length of railway? A shorter length of railway.

1004. Some of these schemes show a longer length of railway than the existing line, do they not? No; they are all shorter.

1005. Then there will also be a saving in the number of trucks which can be hauled? Yes, and a saving of course in time.

1006. If a saving is effected by a deviation of the Zigzag and a reduction of the grades, will that accelerate the traffic on the length of railway between Emu Plains and Bathurst? Certainly; because you can stage your traffic.

1007. But how can you take longer trains over a steeper gradient than the Zigzag? Because you can stage the traffic, and have depôts. You now get a certain load to Bell. You have to break the train there to take it into Eskbank on account of the 1 in 33 grade coming up the Clarence tunnel.

1008. But seeing that there are upwards of 13 miles with grades of 1 in 33, and $1\frac{1}{4}$ miles with grades of 1 in 30, you still will have to break up the train on those steep gradients? That is on this side of Mount Victoria.

1009. You will have to break up the train there, or run an extra engine? Yes.

1010. The gradients at the Zigzag have never caused the breaking up of a passenger train? No, not as a rule, because if you get a little over the load you would put on a second engine which means practically doubling the cost of the train, because you have an additional engine and second engine men.

1011. But that would apply equally to the steep gradients between Emu Plains and Mount Victoria? Yes; but if you could cut out a grade at one part of the road, and it gives you a clear run of 50 miles, instead of having to break up the train you save practically one engine over that distance.

1012. Am I to understand that the Commissioners consider that the Colony would be justified in expending £225,000 in dispensing with one or two steep grades on a certain line of railway, whilst at the same time they have a dozen more equally as steep or steeper grades, with which they cannot dispense? But they say it will be an economical advantage—it will pay for itself.

1013. Can you show how? The Commissioners have shown that in a practical way by the first Zigzag.

1014. I would like to see that in print and test it? It has been done on the Northern line, too. There was a small grade on the other side of Singleton which was cut out. Now instead of breaking up the train at Singleton you can run it through.

1015. I grant that if you cut down steep grades you can run longer trains, but if you cut down one or two grades in one or two places and leave plenty others in other places, I do not see how you can facilitate traffic much? But if by cutting down a grade at one point you can get a clear run for 20 to 50 miles, whereas previously you had to divide the train, you can see the advantage. If you run ten trains a day it means, say, a saving of 500 train miles a day, which represents 150,000 miles during the year, and as each mile would cost say 4s., there is a saving of £30,000 a year.

1016. But can you, by doing away with the Zigzag, and having gradients of 1 in 50 instead of 1 in 42, have a clear run of 25 miles without coming upon any steep gradients at all? I think you could run right away from Katoomba to Eskbank, where the stage would be, or even into Bathurst.

1017. Is there any steep grade westward of Mount Victoria? There is one of 1 in 55, between Mount Victoria and Katoomba.

1018. The proposal to do away with the Zigzag originated in 1893, with the idea of finding work for the unemployed? That is stated in the report. That is how the matter, cropped up, more particularly at that time.

1019. Can you say, of your own knowledge, what are the special reasons why the Commissioners are in favour of incurring this large expenditure, and doing away with the Zigzag? I can say nothing more than what is stated in their paper of November, and the one they have laid before you to-day.

1020. Amongst other things I understand that they think that it would facilitate the working of the railway, and also diminish risk? Yes.

1021. And the risk on the mountain line exceeds that on an ordinary line, especially where there are gradients of 1 in 30 and 1 in 33, and curves of 8 chains radius? There is always a risk on the Zigzag, owing to the manner in which we have to work. The matter is one of practical railway management with which the Commissioners claim to be thoroughly cognisant, and they say there is a risk, and they make that statement advisedly.

1022. The Commissioners, no doubt, are experts, but still this matter has to be inquired into by the Committee. The Commissioners have placed before the Committee the reasons why they wish the proposal to be carried out. Amongst the reasons which they assign is the expediting of traffic, and the avoiding of risks of accidents. I think it is fair to ask whether there have been unusual risks at the Zigzag at Lithgow any more than the risks incidental to working a mountain line of railway with steep gradients and sharp curves, and whether the risk is of such a character as to justify the large expenditure of public money? There is always greater risk in working on a 1 in 33 grade and sharp curves. If the Commissioners could cut them all out at a reasonable rate they would do so.

1023. You have given us a return showing us the number of accidents for five years? Yes.

1024. You have stated that some ten years ago a serious accident took place at the Zigzag and that lives were lost;—are you sure that that accident took place? I am sure an accident took place at the bottom points. There was a dispute as to whether it was due to the Zigzag, or to defective couplings. One of our employees was killed, and one or two were injured, and a good deal of damage was done. The trucks, I believe, ran right back to Lithgow.

1025. During the last five years the amount of damage by these accidents amounted to £1,700, and £30 was paid as compensation to some person who was injured;—having regard to the number of trains taken over the Zigzag in the course of a year, do you think that the return of accidents is an excessive one, and one which indicates that there is great danger and unusual risk attending the working of the line? It indicates that there is unusual risk.

1026. Have you not had worse accidents which have entailed six times greater cost? We had a greater accident recently, owing to the breaking of a rail, but that was not due to construction.

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1027. Do you not think that some of these accidents were due to defective management;—take the one on the 9th October, 1891—

Down goods train became divided at top points. Nineteen vehicles ran down middle road into the buffer-stops at the bottom points.

Does not that indicate that the train was not properly and efficiently coupled? I think not; but I could not very well enter into details of the management.

1028. Here is another—

Double train pushing into dead-end top points, pushed rear engine over buffer-stops.

If there had been any proper regulations providing that the man in charge of one engine could signal to the man in charge of the engine assisting to push the train up, do you think it likely that the accident would have occurred? All these things are provided for by regulations and instructions.

1029. Therefore, these accidents occur through violation of instructions? If the Zigzag were done away with none of these double engines would be running there.

1030. Do you not use double engines between Mount Victoria and Emu Plains? Yes; but we are proposing to cut the 1 in 33 grade to 1 in 60, which would not require the use of a double engine.

1031. But have you not a number of 1 in 30 and 1 in 33 grades between Mount Victoria and Emu Plains? But that does not affect the matter at all. It means to stage the traffic.

1032. These accidents you say happen through using two engines? Yes; the two mentioned.

1033. But will you not use two engines on the steeper grades still? To carry the same load you would, but probably the trains will be divided. The Commissioners, as a matter of fact, do not like any of these steep grades. They would cut them all out if it was feasible.

1034. *Mr. McCourt.*] I presume the Commissioners estimated the saving per annum by what is known as the No. 1 scheme? That is the scheme which was worked out.

1035. What do they estimate the saving would be? About £10,000 a year.

1036. And they estimate the cost of the work at £225,000? I think the actual figures were £213,000.

1037. The Commissioners state that they estimate the whole of the work at about £225,000, which at 4 per cent. would mean an annual cost of £9,000; but they estimate that in addition to the great facility for the working, and the avoidance of the continual risk which now takes place, the expenses will be reduced by about £10,000 per annum? Yes.

1038. Whichever proposal is carried there will be 5 or 6 miles of line cut out of the present line? Yes.

1039. The cost of that line cut out would be practically a loss to the country? Yes.

1040. Would it not be a fair thing in estimating the saving and cost of the line, to add the cost of the line cut out to the cost of the new line? No; because you have to consider the saving on the present expenditure.

1041. The line which will be cut out has cost the country, say, £165,000? Yes; but by working the old line you would make no saving, whereas by spending a certain sum of money you are going to save a certain sum per annum.

1042. The Commissioners attempt to show a saving on the outlay? Yes.

1043. But they do not include the cost of the old line to the country? No.

1044. Do you not think it ought to be included? I think not.

1045. Will the cost of this deviation be charged to capital? Yes; I should think so.

1046. As well as what will be lost on capital? Yes.

1047. So that practically there will be no saving to the country? Yes; the saving on the line will be, as they calculate, £10,000 a year, by the expenditure of £200,000.

1048. There will be a capital cost to the country of £365,000? That is by adding the two together. Of course there will be 5 miles of dead money.

1049. Which the Commissioners do not take into account? No.

1050. And which you think they ought not to take into account? No.

1051. The Commissioners do not take any account of what will be lost to the country on the dead line? No.

1052. *Mr. Neild.*] The tunnel which the Commissioners have proposed has a grade of 1 in 50? Yes.

1053. Is it not a fact that immediately at the end of this new 1 in 50 grade, which is to take the place of a 1 in 40 grade, you find yourself brought up with a grade of 1 in 42? Yes.

1054. Will you not require additional engine power to get over the 1 in 42 grade? Yes; you will, one way.

1055. But is it not required only one way at present? No; the grade unfortunately dips both ways.

1056. What will the advantage be in getting rid of a grade of 1 in 40, and supplanting it with one of 1 in 50, whilst at the end of the tunnel you will have, as at present, a grade of 1 in 42. Will you not require additional engine power over the 1 in 42 grade as at present? Yes; an assisting engine, in part, coming this way.

1057. So that if the tunnel were built you would only get rid of the additional engine one way? Yes; unless the other scheme is carried out.

1058. Which other? The one the Commissioners are now having surveyed.

1059. Is that to the north of the line? Yes.

1060. What is the proposed length of that? About 9 miles, I think.

1061. That would be longer than the present route by the Zigzag? No; they may make a saving of a mile.

1062. Can you tell us, as a railway expert, the advantage of a 1 in 50 grade over a 1 in 42 grade? The engineer could give you the exact weight, in tons, which would be carried on both grades.

1063. Will you state whether the three accidents which have taken place on the Zigzag during the last five years were, in the opinion of the Commissioners, due to the engineering formation of the line, to defects in the maintenance of the line, to deficient couplings, or to want of care or skill in driving? I could not say. I hardly recollect enough of the details. The details show that they were, to some extent, due to having to work a Zigzag, because two of the accidents, if I recollect rightly, were due to engines overrunning.

1064. Were there any similar accidents on the Lapstone Zigzag? Yes; one or two. I remember Mr. Meeks, who was a member of Parliament, being injured through the train running over the top points.

1065.

1065. That was a preventable accident? Yes; but it would not have happened if there had been no Zigzag there.

1066. In the statement which you have put before the Committee is the following sentence:—

The Commissioners replied that they had already made inquiries on the subject, and that this proposal will probably prove far more costly and less profitable than the deputation anticipated; and as it would be moreover, virtually the construction of a new line, they did not consider it a work which could be undertaken under the Railway Act.

In another portion of the statement they say:—

I am directed to point out that as the work, as a deviation, has been taken out of their hands, and is being dealt with as a new line of railway under the provisions of the Public Works Act, the duties of the Railway Commissioners in regard to the matter are clearly defined by section 13, subsection 1.

Having, as the mouthpiece of the Commissioners, informed the Committee that the matter has been taken out of their hands, and is being dealt with as a new line of railway under the Public Works Act, will you explain why it is that the Commissioners are continuing to spend money in seeking for a new line for railway on the north side of the line? I do not know that I can give any further explanation than what I have given in the statement I have submitted.

1067. But the statement is very contradictory, is it not. You state, as the mouth-piece of the Commissioners, that the work has been taken out of their hands, and is being dealt with as a new line of railway; yet, notwithstanding that, you ask that the consideration of the matter may be so dealt with that a survey of the new line which you are making may be completed. You are treating that as a deviation, are you not? The Commissioners are simply making a preliminary survey. I do not know what their action may be when they get the result.

1068. Do you regard the tunnel scheme as a new line or as a deviation? Both are practically deviations.

1069. If they are both deviations why do you tell us it is a new line, and that the matter has been taken out of your hands? The Commissioners mention in their statement that the matter having been taken out of their hands, and the Government considering it as a new line, it has led them to ask that the matter should be dealt with by calling upon them for a report under the Act and showing certain results.

1070. *Mr. Wall.*] Was it the intention of the Commissioners to carry out the No. 1 proposal themselves, provided that the Minister had not referred it to the Committee? I could not say. I think the money would have been voted by Parliament.

1071. Since the matter has been referred to the Committee, this new survey has taken place? It is taking place.

1072. Did the Commissioners contemplate making a further inspection of the line before carrying it out—that is previous to the work having been submitted to the Committee? I could not say.

1073. *Mr. Suttor.*] Who is surveying the line? Mr. J. B. Suttor and Mr. Baxter are the principals.

1074. Where does it start from? From Dargan's Creek, I think. It runs as far out as what they call the Trigonometrical Survey Station; but Mr. Foxlee can give you the details.

1075. *Mr. Ewing.*] Can you make a clear distinction between what is a deviation and a new railway. Is this the distinction—that a deviation is work carried out by the Commissioners under the Railways Act, and upon which no report is made by them to anybody? Yes; that would be a deviation.

1076. And a new railway is a work upon which a report is made under the terms laid down in the Public Works Act? Yes.

1077. You regard the tunnel in the first instance as a deviation? Yes. It is rather a difficult matter. It is the first case of the kind we have had.

1078. Would you regard that as a deviation? I think, in the first instance, the Commissioners looked upon it as a deviation.

1079. But there is a limit to the work as a deviation? That is where the dispute comes in. It may be a deviation going from the Western to the Southern line, but still it would be a new line of railway.

1080. In the one case it may be a deviation and in the other a new route? Yes; you would call it a new railway if you went from Mount Victoria to Bowenfels. It is a difficult matter to describe where one commences and the other ends.

1081. *Mr. Hoskins.*] Do you know whether the Railway Commissioners consider as a set-off against any estimated gain they may make by having a deviation of the railway, the amount of interest which ought to be calculated upon the cost of the length of the line which will be disused? No; they have not taken into consideration the question of the cost of the disused line.

1082. Therefore, if the line which it is proposed to dispense with cost £160,000, the interest upon that is not to be calculated as an expenditure as against the estimated gain on the new line? It is not calculated.

THURSDAY, 15 MARCH, 1894.

Present:—

JACOB GARRARD, Esq. (CHAIRMAN).

The Hon. WILLIAM HENRY SUTOR.
The Hon. JAMES HOSKINS.
The Hon. FREDERICK THOMAS HUMPHERY.
The Hon. JOHN DAVIES, C.M.G.
The Hon. WILLIAM JOSEPH TRICKETT.
THOMAS THOMSON EWING, Esq.

WILLIAM CHANDOS WALL, Esq.
WILLIAM McCOURT, Esq.
JOHN CASH NEILD, Esq.
EDWARD WILLIAM O'SULLIVAN, Esq.
CHARLES COLLINS, Esq.
HENRY DAWSON, Esq.

The Committee further considered the proposed Deviation to avoid the Lithgow Zigzag.

John William Rock, Esq., M.I.M.E., sworn, and further examined:—

1083. *Chairman.*] You are now prepared to give the Committee the information they desire in reference to the probable cost of your proposed line? I am.

1084. I understand that you desire to correct your former evidence in some particulars? I do. You asked me to state, entirely without prejudice, where I thought a line to Bowenfels would come out, and I traced on the map what I thought the approximate route. Next day, however, I went over the country myself—I had never been over it before—and I found that there is a mountain range, not marked on any map,

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map, which would interfere with the route I then traced out. I have now discovered how the line would have to go in order to keep clear of the mountains.

1085. I think you told the Committee that if it were thought desirable to tap the existing line at Bowenfels, you would leave your proposed deviation at Doctor's Gap, and join the main line between Lithgow and Bowenfels. You desire to amend that answer? Yes; I find that I could get a shorter, and in every way a more favourable line, by branching off immediately after the crossing of the river Lett.

1086. Is there any other correction that you desire to make? Yes; I should like to state the reason for taking that route. You will observe, by looking at the plan, that the original route takes a very deep and short curve, in order to get height, before entering the range at Doctor's Gap; but that work now becomes quite unnecessary, and so also does the $1\frac{1}{2}$ mile of steep cutting. On the new route the line will run along through meadow land for three-fourths of the distance, to Bowenfels.

1087. You would avoid the tunnel at Doctor's Gap, and also the detour which is necessary to reach it? Yes.

1088. Would the new route make the distance between Mount Victoria and Bowenfels any shorter? Not proportionally. The great saving is in the cost.

1089. Have you any other correction or alteration to make in your previous evidence? No.

1090. Will you now give us your estimate of cost? Yes; I find, taking the first route, that it will cost £345,000 for a double line, finished in the most complete manner.

1091. That is the route to Eskbank? Yes; for a single line it would cost £230,000.

1092. Can you tell us what portion of that will be spent on tunnels, culverts, and so on? I would rather not give every detail, if it could be avoided, because the time has been so short that I have had to lump some of the items together; but to allow for want of time in working out the details, I have kept always on the liberal side.

1093. Upon what have you based your prices—upon similar work carried out by yourself, or have you ascertained the railway prices? I have taken them from the tenders of substantial contractors.

1094. Contracts for recent works? Yes.

1095. How did you arrive at your estimate? I took out the quantities as well as I could in the time, and I have allowed for every detail that occurred to me. I have allowed for the bridges that I referred to when last examined, for various culverts, and for a railway station. There will be 800,000 yards of earthworks.

1096. What price have you allowed for that? I have run it all through at 2s. 6d. a yard.

1097. Will not the bridge over the Lett cost a considerable amount? No; it will only be about 10 feet high, and can be constructed of timber.

1098. Have you any idea what it will cost? Yes, I have allowed £1,000 for it. The stream is only 12 feet wide.

1099. What about your tunnelling? The tunnels will cost £183,500.

1100. That is the two tunnels? Yes, the two tunnels.

1101. Allowing for a double line? Yes.

1102. Can you give us an estimate for a single line? I have not been able to do anything more than to take a percentage off for a single line.

1103. What percentage;—one-third? That is hardly enough to take off, so you see I am on the liberal side.

1104. Has the cost of resuming land entered into your calculations? No.

1105. If it were necessary to resume land, the money so expended would be an addition to your estimate? Yes.

1106. Does your estimate include the cost of permanent way? Yes; everything will be completed on the best scale.

1107. What have you allowed for your station buildings? I have allowed £1,500 for the platform and buildings in connection with the small station at Hartley Vale.

1108. You could not take one-third off that, if the line were a single one? No.

1109. What have you allowed for permanent way? If I were to add all the items up, it would come to about £3,600 per mile.

1110. That is the cost of the permanent way material and laying? Yes.

1111. Including the cost of sleepers, rails, fish-plates, &c.? Yes, and ballast.

1112. What quantity of ballast have you allowed? About 14 inches for the whole width, not taking anything out of the 6 feet.

1113. You have allowed for ballast to go right across between the two sets of rails, leaving no gutter? Yes.

1114. What would be the full width of the ballast? I think about 18 feet will be the width of the ballast.

1115. You provide for sleepers of the class used on the main lines? Yes.

1116. Have you allowed for bricking the tunnels? I have only allowed a contingency amount to pay for a certain quantity of bricking in places. The tunnels will not be bricked throughout.

1117. Do you think you will get sufficiently solid ground to be able to dispense with brickwork? Yes; we shall be more than 200 feet below the surface, and as the ground, as far as I can see, is pretty solid, we shall not require any great amount of bricking.

1118. What proportion of brickwork will you require? I should have to work that out.

1119. But you must have an approximate calculation that so much would be required for bricking tunnels? I have taken an average price for a number of known tunnels.

1120. I want to know, not so much your price, as what proportion of the length of the tunnels will be bricked? I am not prepared to say at this moment.

1121. Have you put any special sum down for culverts? Yes; I estimate them to cost £7,000.

1122. Irrespective of the bridge? Irrespective of three bridges.

1123. One thousand pounds does not cover the cost of the three bridges? No. The first bridge you come to is that crossing the narrow half-used road close to the station at Mount Victoria, for which I have put down £700. Then there is £1,000 for the alteration of the Vale of Clwydd road, and at the Hartley Vale station it will be necessary to put a small bridge to carry the road over the railway cutting. That bridge will cost about £400.

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1124. Now, will you proceed with what you were going to say in regard to the advisability of taking the line to Bowenfels, instead of to Eskbank? Yes; I make the cost of such a line, for two sets of rails, and furnished in the same way as the other, £225,000.
1125. What would be the length of it? Seventeen miles, approximately; but I have not made a survey of the last 3 or 4 miles. 15 Mar., 1894.
1126. What would the grade be? The grade, as far as the bridge over the Lett, would remain 1 in 50; but further on I think it would be, say, 1 in 75.
1127. The ruling grade on the 8½ miles between Mount Victoria and the river Lett would be 1 in 50, while the ruling grade on the remaining 8½ miles between the river Lett and Bowenfels would be 1 in 75? I cannot say for certainty that it would; but I should think that that would be the average grade. I cannot speak positively of ground which has never had an instrument over it.
1128. Is there anything else you would like to state in reference to this route? Yes; I would like to point out that it saves £119,000—the cost of the Lithgow tunnel—together with the sharp curve which is necessary in order to gain distance. The line to Bowenfels runs through country which is in every way more favourable than the country through which the line to Eskbank runs.
1129. Where do you propose to join the main line—half-way between Lithgow and Bowenfels? No; at the Bowenfels station.
1130. What would be the cost for a single line of rails—I suppose we may take one-third off again? Yes; that would make it £170,000.
1131. Is there anything else you would like to say? No; I think not.
1132. *Mr. Humphery.*] You estimate that it would cost £90,000 less to take a railway from Mount Victoria to Bowenfels, than it would cost to take it from Mount Victoria to Eskbank? Yes; that would be the saving.
1133. The distance is 3 miles less? Yes.
1134. You could also dispense with a tunnel seven-eighths of a mile long by going to Bowenfels? Yes.
1135. If you only constructed a single line, the saving would be about £60,000. Yes; you could take off one-third.
1136. What would be the saving of distance comparing the line to Bowenfels with the existing line? Three miles.
1137. Would 1 in 50 be the continuous grade on the Bowenfels line? I do not think that the first 217 chains from Mount Victoria could be improved; but some slight improvement might be made further on. That is a matter that will have to be considered.
1138. Would the cost be greatly increased if an attempt were made to improve the grade? I do not think the cost would be increased proportionately. There would only be the extra distance to pay for.
1139. For the first 2½ miles you must have a grade of 1 in 50? Yes.
1140. Could you get a better grade for the rest of the distance without great additional cost? To get an easier grade we must have a longer distance; but that would not make an increase in the proportional cost.
1141. If you lengthened the mileage to get a better grade, the cost of the line would not be more than if you adopted the 1 in 50 grade? Not proportionately. In some cases such an alteration might take the line into very difficult ground, so that it would cost a great deal more in proportion; but in this particular case I do not think that it will be so. All that will be necessary will be to take the line right into Hartley Vale township.
1142. But at the present time you have a continuous grade of 1 in 50? Yes.
1143. Can you say if any existing traffic would be served by taking the line by the route you suggest? I am hardly prepared to give statistics because I was only retained for technical purposes.
1144. But having been over the ground, cannot you say whether the line goes near to any existing settlement which would be benefited by it? I think, with a little study, I could point out an area of about 130,000 acres on the map which is pretty well closed in now.
1145. That is land not at present occupied? There are a number of abandoned farms in the district; the people say that they cannot get their produce away. They are shut in by a hill from 700 to 800 feet high, which adds a day to their journey to market, and makes the carriage of their produce impracticable.
1146. *Mr. O'Sullivan.*] Will not the line from Mount Victoria to the river Lett be very awkward to work, because of the continuous grade of 1 in 50? I do not know; but I may say that I consulted a prominent Government railway official in regard to this matter, and he said that it would not. The best technical advice I can get is that that portion of the line would not be difficult to work.
1147. Do not railway managers, regard long distances on the one grade as detrimental to the efficient working of a line? I do not know; I am not acquainted with the business of running trains.
1148. But suppose a train got stuck up within a mile of the top of the grade, it would have to run back 7 or 8 miles in order to get another start? The idea would be to put in one or two flat pieces, and I have about 28 feet to spare for that purpose.
1149. Is it not the practice of engineers to put in flat pieces to lessen the momentum of the trains? Yes.
1150. You intend to do that? Yes.
1151. It would be the same on the other part of your line? On the other side of the Lett there would be no difficulties at all.
1152. You say that you saw the country between Doctor's Gap and Bowenfels for the first time the other day? Yes.
1153. Do you think you had time to make a proper inspection of it? Well, I am not giving you any definite figures. I said that my idea was that an average grade of 1 in 75 might be obtained, but that I did not commit myself to any figures.
1154. Have you had ample time to inspect the country so as to be able to say authoritatively that a grade of 1 in 75 could be obtained? Yes; I think so. I think I am sufficiently practised to be able by riding over a route to tell approximately what the grade will be.
1155. You have not had time to survey the line, but your observations lead you to believe that you are justified in stating that you can get a grade of 1 in 75? Yes; an average grade. Getting a grade is very much a matter of cost, and I have allowed a certain sum per mile to cover contingencies.
1156. *Chairman.*] Is it not also a matter of natural features? Yes, practically.
1157. *Mr. O'Sullivan.*] What would be the minimum if that is the average grade? I dare say that we should have to take advantage of a 1 in 50 occasionally. 1158.

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1158. Can you express an opinion as to the advantage of these two routes from a national point of view? Yes; as retained by my clients, I presented to you the first route, via Eskbank; but as an engineer I say that there is no comparison between the two lines. The Bowenfels route is no doubt the superior, both as regards construction and as regards working.
1159. Has it the recommendation of being likely to develop better country? It opens up a much larger area of country.
1160. *Chairman.*] As compared with the Eskbank line? Yes; I am making a comparison between my first and my second proposal, and I say that the second would be accessible to more country. The first line would in some places run at such an elevation that no road could get up to it.
1161. *Mr. O'Sullivan.*] You state that it will open up 130,000 acres? Yes.
1162. Do you refer to the land owned by Mr. Vickery or to Crown land? I have no idea who owns the land; I only know the area.
1163. One hundred and thirty thousand acres of good land would be opened up if a railway were taken by the route you suggest? That is the opinion I have formed in conversations which I have held with the people there.
1164. Apart from the engineering aspects, would you, as a man of common-sense, recommend the construction of a line to Bowenfels on the ground that it would open up a productive district? I would.
1165. You spoke of some abandoned farms;—do you know why they were abandoned? All I know about the district is that I have been requested to go to two or three public meetings which have been held at places some distance apart to help the advocacy of the line, I suppose, and at these meetings I have heard numbers of people state, not only that the line was required to open up fresh ground, but that ground had been abandoned because of the want of railway communication.
1166. Would not the tunnel at Doctor's Gap go through a sandstone hill? Yes, for a large part of the way. The rest of it would be through part of the coal measures.
1167. And it is that part which would require bricking? It would depend upon the formation. If the tunnel went through coal, it would have to be bricked; but coal-measures need not be coal; it might go through chert, for instance.
1168. But it would not be safe to leave a tunnel going through coal-measures unbricked? No.
1169. It would be safe to work a sandstone tunnel unbricked? Yes; if the sandstone was of any consistency. I should like to make an explanation with regard to some of my figures. When last examined I said that the Eskbank tunnel would be 70 chains long. I now find that it would be nearly 90 chains long.
1170. *Mr. Hoskins.*] Have you an intimate knowledge of the character of the sandstone rock in the neighbourhood of your proposed tunnel? Well, I have had to do with the sinking of shafts in the district.
1171. You do not know that the sandstone there is very jointy, and that in the construction of the existing line it was found dangerous to leave a tunnel with a rock roof? I did not know that.
1172. How long were you engaged in the survey of these proposed lines? About seven weeks on the first line. I have not surveyed the line to Bowenfels at all.
1173. Have you sunk any trial shafts? No.
1174. I suppose you took levels in places? I took the levels right through. For two and a half weeks I suppose my time was taken up in disproving other suggested routes.
1175. Have your levels been checked by any other engineer? No, they have not; but they check themselves, because I went from one known point at Mount Victoria to another known point at Eskbank.
1176. *Mr. McCourt.*] You propose to make a deviation from the Lott River? Yes.
1177. In that case, how far would Lithgow be east of the proposed line? About 2½ miles on the other side of the range. It would be quite cut off from it.
1178. Together with all the coal-mines? No; all those coal seams—The Vale of Clwydd, the Vale, and the contingent lines crop out on this side of the range.
1179. What arrangements would they have to make? They would have to construct about three-quarters of a mile of private line from the other end of their fields.
1180. They would have to open up their lines in another place, and move all their machinery? They would have to move their underground plant, which, of course, is nothing, and as they are already between 1 and 2 miles on the way, it would be much cheaper to do this, without taking into consideration the 6d. or 7d. saved in railway freight.
1181. Your line would practically ruin the township of Lithgow? I fail to see why.
1182. Lithgow is now on the railway line, but if your line were constructed it would be 2½ miles away? Their nearest point would be Bowenfels junction.
1183. Would not the value of property in Lithgow be depreciated if your line were constructed? I do not see why.
1184. Do you know the country well on both sides of the present line from Mount Victoria to Bowenfels? No, I do not. I have only been over it on the railway.
1185. If you had a free hand to construct the best line, from a national point of view, would you adopt the route which you now recommend? Yes.
1186. That is the Bowenfels line? Yes—my second proposal. If there were no line beyond Mount Victoria, I would recommend the continuation of the line along that route to Bowenfels.
1187. But do you think it is worth while to make the alteration under existing conditions? Well, I did not intend to answer these questions; but if I am forced into it, I would say that it appears that this line would open up productive country, to which the betterment principle could be applied. As far as I understand, the proposed deviations are not shorter than this line.
1188. But, apparently, you do not recommend any alteration of the existing line? I would recommend that if any line is to be made, mine should be made. I do not consider that my line is a deviation. It is a new line, and would mean the abandonment of 20 miles of the existing line.
1189. *Mr. Ewing.*] You see the red line, marked on the plan before the Committee, starting from Bowenfels, and passing through Andrew Brown's selection, until it makes the village of Bowenfels, then turning towards the east, and passing in an easterly direction through reserve 139, until it terminates at Lett's Creek? Yes.
1190. That is approximately your line, and you believe that it is the best line that could be obtained in the interest of Bowenfels? Yes; but I should like to prove whether it is not possible to make a shallower bend round Hassan's Walls.

1191. If we make a survey of that route we shall not be far off your line? No.

1192. *Mr. Humphrey.*] Will your line junction with the main line between Lithgow and Bowenfels, or beyond Bowenfels? On the Lithgow side of Bowenfels, in order to save the station—that is, if no engineering difficulties occur.

1193. What is the distance from Lithgow to Bowenfels? A little over a mile. I believe that it is 2 miles from Eskbank to Bowenfels.

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Harry Richardson, Esq., Out-door Superintendent, Department of Railways, sworn, and examined:—

1194. *Mr. O'Sullivan.*] The Commissioners are desirous of carrying out a deviation to avoid the Zigzag. Can you give us any reasons, from a traffic point of view, why this deviation should be made. Will you state the difficulties under which you now labour, and the advantages that would follow the construction of a deviation? Well, in the first place, if the deviation were made, we could do with many less trains which, on a single line, is a great consideration. I find that last year we took on the down journey,—that is, from Sydney—49,770 trucks over the Zigzag. A train is limited to 21 trucks just there, because of the 1 in 33 grade between Dargan's Creek and Clarence Siding, and the length of the wings on the Zigzag. On the up journey we took 64,976 trucks, and on the average 29½ trucks per train. On the up journey the trains are cut in half before reaching the Zigzag, and are brought up in two parts. When we get the half trains to the top, one engine is able to take the load on to Bell, because the grade is only 1 in 50. To cope with the traffic takes 4,562 trains. If, however, the Zigzag, and the 1 in 33 grade were cut out, we could take, on the average, from 35 to 40 trucks per train. Some of the large American engines would be able to take as many as 45 trucks. In that way we should be able to do as much with 3,276 trains as we do now with 4,562 trains, so that there would be a saving of 1,286 trains. There not only is the saving in the number of trains; there is also a saving in time. The time now occupied on the journey from Eskbank to Bell is 90 minutes, while 100 minutes is taken for the up journey. The distance is only a little over 11 miles; but, it must be remembered that we have to divide the trains, pin down the brakes before going down the grades, and back slowly down the Zigzag. We are limited by our instructions to a speed of 10 miles an hour on the middle road, and to 5 miles an hour on the wings of the Zigzag; but I estimate that if the Zigzag were cut out, the down journey could be performed in 30 minutes, and the up journey in about 40 minutes; that is, assuming that Mr. Foxlee's proposed deviation were adopted, and a banking engine were used for the tunnel.

1195. That saving would be between Eskbank and Bell? Yes.

1196. Can you give us any idea of what its value would be per annum? We should save about 11½ miles upon 1,286 trains, which would mean 14,950 miles altogether; and putting that down at 4s. 8d. per mile—the cost of the train mile according to the Commissioners' report—the saving amounts to approximately £8,488.

1197. *Mr. Humphrey.*] Will you show us how there is a saving of 11½ miles? At present we run 4,562 trains over the 11½ miles between Eskbank and Bell, but I estimate that if the Zigzag were cut out we could do the same work with 3,276 trains, a saving of 1,286 trains.

1198. *Mr. O'Sullivan.*] Would there be any other saving? All that I have said up to the present refers to the goods traffic. We ran 1,404 passenger trains over the line during the last twelve months, and we shall be able to save 2½ miles on the running of those trains, or a total saving of 4,036 miles.

1199. What would that come to in the year? About £942. That is the mileage saving. Now, let us come to the saving in time. Under existing conditions, owing to the length of time it takes to run between Ponrith and Bathurst, we are unable to make one set of drivers do the whole journey. Our day's work is 9 hours 10 minutes, and the running time on our tables is from 9 to 11 hours for a goods train, consequently we have to put on fresh men at Eskbank, and we do not get such a good run from the drivers as we would otherwise do. If the journey occupied so much less time as the cutting out of the Zigzag would enable us to do, the drivers could take the trains on to Bathurst.

1200. *Mr. Neild.*] But you would not save an hour in the running of the passenger trains? No; only about 15 minutes.

1201. *Mr. O'Sullivan.*] Will you kindly state what you would save? About 19 minutes on the down, and 12½ minutes on the up journey.

1202. *Mr. Neild.*] That would be a saving of about one-half? Yes; it only takes 15 or 18 minutes to run 8 miles on a straight road.

1203. *Mr. O'Sullivan.*] You might enumerate any other saving? We should save an hour on the journey of each goods train, which I estimate would be worth £3,000 a year. Then the push-up engines would not cost so much. Although we could take a full load from Dargan's Creek to Bell, I am doubtful if we could take that load through the tunnel, because I am not sure that the men could work as well in the tunnel. Therefore, I assume that we should have to continue to use the push-up engines, but they would not be used for more than an hour, whereas they are now used 1½ hour. There would be a saving of from £500 to £600 a year there.

1204. You would be almost certain to use these push-up engines? Not to anything like the same extent as we do now. Where we use three engines now, we should only use one, perhaps.

1205. *Chairman.*] Are the push-up engines used to overcome the grade between the bottom of the Zigzag and the lower points, or to overcome the grade higher up? They are used on both grades. We push the trains right up to the mouth of the Clarence tunnel.

1206. Then even though the tunnel were made you would still have to use a push-up engine? Yes; to the top of the 1 in 42 grade.

1207. And because of the difficulty of working in the tunnel, you would probably use a push-up engine right through? Yes.

1208. *Mr. O'Sullivan.*] Are there any other savings? No; I think those are about all.

1209. There will be savings in the maintenance of the permanent way? That is all covered by the saving in the train mileage.

1210. What is the total saving? £10,127.

1211. That is on existing trade? Yes.

1212. But you must put as a set-off against that the lower freights the public will pay for the reduced mileage;—have you taken that into consideration? I have not.

1213. I presume you will have to make allowance for it? I am not prepared to say.

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1214. Do you think it is likely that the public will pay the same rates for the trip from Eskbank to Bell, along the deviation, as they now pay for the longer journey over the existing lines? I do not know whether the Commissioners would alter the rates.

1215. Do you know what the difference in distance would be? Yes; there would 2½ miles less to run.

1216. Do you not think that the public will make a demand to be let off so much of the present charge? I daresay they will.

1217. They are almost sure to do so if the rates there are on a mileage basis? There is no doubt about that.

1218. You would have to deduct that from the £10,000 which you say you would save? Yes, if the reduction in fares were made.

1219. The same thing would apply in regard to goods and stock? Yes.

1220. *Mr. Ewing.*] But you need not make that reduction unless you like? Yes. We should only have to put it down as a set-off if it were made.

1221. *Mr. O'Sullivan.*] Is there any difference made between the rates on the Southern and Western lines because of the increased cost of working the Western line? No.

1222. Then I presume that the practice which prevails on the Southern line of charging mileage rates will prevail on the Western line? I am not authorised to say;—I do not make the rates.

1223. Suppose a better route than Mr. Foxlee's were adopted, which would be more workable but a little longer, would the saving be increased? Yes, if the route were better and had an easier grade.

1224. So that instead of being £10,127 it might amount to £12,000? If I saw a plan and knew exactly what was going to be done, I might be able to answer your question. If the additional mileage absorbed whatever time might be saved on the 1 in 60 grade, there would be no advantage.

1225. Do you know the No. 3 proposal? I have seen a rough plan of it. [*The Chairman explained the scheme to the witness.*]

1226. Do you think a still larger saving would be obtained by adopting the No. 3 proposal, which is 2 miles and 3 chains longer than Mr. Foxlee's, but has a grade of 1 in 60? Well, if a bank-engine had to be used in the tunnel, I think there might be an additional saving in connection with the No. 3 scheme.

1227. It seems almost certain that you would have to use a pushing engine in the tunnel; but it is probable that you would not have to use it on the No. 3 deviation? You would have to use a push-up engine up the 1 in 42 grade at the commencement of the deviation. The same saving would be made in regard to the number of trains on either line, because the ruling grade between Dargan's Creek and Bell would govern the load which would be taken over either deviation. Mr. Deane's deviation does not take us beyond Dargan's Creek.

1228. Then you would still want a push-up engine? No, we should only require the push-up until we got to the top of the 1 in 42 grade; but we could not put a full load on the 1 in 60 grade because of the 1 in 50 on ahead. The two deviations would, therefore, be in the same position so far as the number of trains is concerned.

1229. It seems to me that it must be borne in mind that £167,000 was spent in constructing the Zigzag, and interest has to be paid on that money. Have you taken that into consideration as a set-off against any saving which you may effect? I do not see that that makes any difference. If we save £10,000 a year, and pay interest on the new line, I do not see how the cost of the old line affects the position.

1230. You would have to pay interest on the line which you intend to abandon? But we have to pay that interest now.

1231. But if a deviation is made, you will have to pay the interest on it as well? But if the interest on the deviation only comes to £9,000, and we save £10,000 in the working, we shall be all right.

1232. *Chairman.*] The interest on the £225,000 which it is proposed to expend on the No. 1 scheme would amount to £9,000 per annum, while your saving would be roughly £10,000 per annum. You have, therefore, £1,000 to the good, but you have also to pay the interest on the £167,000 expended on the line which you intend to abandon? Yes; but we have to pay that interest now.

1233. *Mr. O'Sullivan.*] Can you tell us anything else which would justify the construction of this deviation from the traffic standpoint? Besides the saving to us in actual money, I think it must be borne in mind that it would be a great advantage to the public to get their goods one hour sooner than they now get them. It must also be remembered that although the Zigzag has been worked almost without accidents, it cannot be denied that it is a dangerous place.

1234. Can you call to mind how many accidents have happened during the last five years other than those which were put before the Committee yesterday? No, I cannot.

1235. Did many accidents take place between 1869, the year when the Zigzag was opened, and five years ago? No.

1236. Can you call to mind more than one? Not more than one serious accident, which happened just after the line was opened, when one of the firemen got his leg cut off.

1237. So that in twenty-five years there have only been four accidents, of which only two have been of a serious character? Yes.

1238. Does not that go to show that the Zigzag is not by any means so risky a place as engineers would have us to believe? Perhaps it does; but a man might only make one slip, and he would run right over the end with a trainful of passengers.

1239. But you might say that of a good many callings. A man in command of a ship might make only one mistake, and the ship would be ashore? But it would be a good thing to prevent the possibility of accident.

1240. But the trains now are safer than they were in the early days, because of the continuous breaks? Yes.

1241. As a matter of fact we may acknowledge that the risk makes the men more careful, and possibly causes the management to put good men there? Yes; the best men are picked for that particular place, and of course they have their lives in their hands, and are not likely to risk them if they can prevent it.

1242. I think your testimony, and that of others shows that the Zigzag in the hands of careful men is by no means a risky place? So long as the men carry out their instructions there is no risk.

1243. Has there been any serious block of traffic on the Zigzag? Yes, that is the great difficulty. If we get a very busy day it is a very difficult thing to get the trains to cross one another on this part of the single road. I have no figures with me to show the delays; but they have been very serious.

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1244. Would not the same remarks apply to all the single roads in the country where there is a large traffic? Yes; but not to the same extent, for the simple reason that the trains have to be made smaller, because of the grades and the shortness of the wings, and it takes three times as long to travel over the line as it would take to travel over a similar length of line anywhere else. The trains have more trouble to get through there than they have at any other part of the mountains.

1245. I gather from your evidence that the Commissioners believe that from the standpoint of traffic it is very desirable to make the deviations? I believe the Commissioners do think that.

1246. *Mr. Hoskins.*] Have not continuous brakes been fitted to all the passenger trains running on the mountains? Yes.

1247. And to all the stock trains? Yes.

1248. And are they not being fitted to all the luggage trains? Yes; I think that in a few years every truck will be fitted with them. They are being fitted on every day.

1249. How long do you suppose it will be before they are fitted to all the trains? I could not say. It depends upon the amount of money the Commissioners have to dispose of. I know that they are losing no time.

1250. What progress are they making? I think they are fitting about fifty trucks a week.

1251. Then they will soon be all fitted? Yes, if the Commissioners have the necessary funds.

1252. If continuous brakes, under the control of the engine drivers, are supplied to all passenger, stock, and goods trains, will not the risk of accident upon the Zigzag be diminished? Yes.

1253. Are not push-up engines extensively used on the Western line between Emu Plains and Mt. Victoria? Yes, as far as Katoomba. Every down train has a push-up engine.

1254. There are curves of 8 chains radius on that line, are there not? Yes; and the curves there are sharper than the curves further on.

1255. And there are long descending grades from Mt. Victoria to Emu Plains? Yes; it is one long decline the whole way. There are only one or two little flat places, such as that near Falconbridge.

1256. Do you not think there is a greater probability of accidents occurring where there are long descending grades, like those from Katoomba to Emu Plains, than on the Zigzag? No, I think not, because we are working the section between Katoomba and Emu Plains on the absolute block system. We never allow one train to go on to a section until another train has gone through it, and consequently, if the train did break away no harm would come to it, because the driver would have the road to himself. Running down from Clarence Siding, however, if the train went over the top wing of the Zigzag, it would be a serious matter.

1257. But are there not other places on the line where there are steep embankments and sharp curves, and a possibility of the trains running off? No. We have the block system at work on all the steep grades so as to prevent such accidents.

1258. Still accidents might occur even with the block system if trains ran away upon a steep grade? Yes.

1259. *Mr. McCourt.*] Is there not an officer stationed at Penrith who works the mountain traffic? Yes; there is a district officer.

1260. Only the reports go through your office? Yes; and I compile the time-tables, and arrange the working of the line.

1261. What is the name of the Penrith officer? Mr. Henson.

1262. Would he have more knowledge of the difficulties of working this line than you have? I do not know that he would. I have a knowledge of that line extending over twenty years. I admit that he would have a good practical knowledge of the line, because he is on it every day.

1263. You estimate the saving that would take place if Mr. Foxlee's deviation were made at £10,000; but supposing you said it was £15,000 what means would outsiders have of checking your statement? I have a return in my office showing every load taken over the line during the last twelve months.

1264. But would it not be a most difficult thing for an outsider to check your statement? I do not think so. If I give you the number of trains that went over the line, the mileage run, and the saving effected by having longer trains, I think it is a very simple thing to check my figures.

1265. *Mr. Trickett.*] You have had experience of working trains in long tunnels? Not outside of this Colony.

1266. The tunnel on Mr. Foxlee's proposed deviation would be the longest we have in New South Wales? Yes; I think the longest tunnel we have now is 1 mile 7 chains.

1267. Have we any very long tunnel with a continuous grade of 1 in 50? The Otford tunnel, which is about three-quarters of a mile long, has a grade of 1 in 40.

1268. Do the rails in these tunnels become slippery? The Otford tunnel is not liked by the men, because it is difficult to work.

1269. For what reason? The men get suffocated by the steam from the engines. The ventilation is bad.

1270. Does that affect the condition of the rails? The tunnel being full of steam must make the rails slippery; but that tunnel is not in my section, though I know that it is very difficult to work. I have to look after the Northern and Western lines.

1271. Is it not a fact that engineers object to tunnels with steep grades? You mean the engine-drivers—yes, they do.

1272. Do you not think a grade of 1 in 50 in a tunnel $1\frac{3}{4}$ mile long might possibly be detrimental to the working of the line? I do not like tunnels; but if there is a double road, and there are to be ventilating shafts, I do not think that it will make much difference. The tunnel at Woy Woy is over a mile long, and no difficulty is experienced in getting through it. It is a double tunnel, with a nice draught through it.

1273. Is it not comparatively level? Yes; but the goods trains go through it very slowly, because there is a grade of 1 in 40 before you get to it, on the down journey.

1274. Do not the rails on the mountains become more slippery than they are elsewhere? Yes, because that country is subject to fogs. In anything like a dull day they get fogs, and then the rails become slippery.

1275. Speaking generally you do not approve of a long tunnel with steep grades? I do not.

1276. Mr. Barling has told us that this tunnel is to have two ventilating shafts, 12 feet in diameter each. Do you think they would be sufficient to properly ventilate it? I should not like to offer an opinion. All I know is that it is very much easier to travel through a double tunnel than to travel through a single tunnel; there always appears to be plenty of draught through a double tunnel.

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1277. The Lapstone tunnel is a single one, is it not? Yes.
1278. What has been the experience of the Department with regard to the ventilation and the state of the rails there? We have had no trouble with it, though some of the men say it is very warm, especially the men on the push-up engine. We have never been stuck up there.
1279. What is the grade? One in 33, I believe.
1280. Is it supposed to be a well ventilated tunnel;—do you know how many air-shafts it has? I do not know that there are any. I might say that there would have been no advantage in making the grade 1 in 40, because the ruling grade as far as Katoomba is 1 in 33, though there are short pieces of easier grades here and there.
1281. But have you not heard many complaints on the part of the public with regard to the stuffiness of that tunnel? Yes; the public say that unless they put the windows up they get the steam in, and that makes them very uncomfortable.
1282. But, independently of that, you do not find that the state of the rails affects the traffic? No.
1283. What is the length of that tunnel? 638 yards.
1284. Only one-fifth of the length of the proposed tunnel? Yes.
1285. It has been stated that the cost of constructing that piece of line between Dargan's Creek and the lower points at Eskbank was £167,000;—what would the interest on that be at 4 per cent.? £6,680.
1286. It is estimated that the No. 1 deviation will cost £225,000;—what would be the interest on that at 4 per cent.? £9,000.
1287. Will you add those amounts together? Yes; they come to £15,680.
1288. What is the saving to be effected by carrying out the deviation proposed by the Commissioners? In round figures, £10,000.
1289. Will not the country then have a deficit of £5,680 in the working of the line? This is the same question as was put to me by Mr. O'Sullivan. There is, of course, that difference between the interest and the saving; but I cannot see that that amount will be lost, because we have to pay the £6,680 now.
1290. But how would you earn it if you abandoned the existing line? If a man is doing a business worth £10,000, and he pays £4,000 a year for interest, he is justified in increasing his capital to an extent that will not absorb that interest, if he can save £1,000 on its working expenses.
1291. But must he not include in the amount upon which he has to earn interest the money he first expended? I do not think so.
1292. *Mr. Humphery.*] With regard to this question about the saving on the deviation, is this the position: it will cost you £225,000 to make the deviation, and the interest on that will be £9,000? Yes.
1293. You will save £10,000 by carrying out the deviation? Yes.
1294. Deduct the £9,000 paid for interest, and you make £1,000 clear profit? Yes; we should be £1,000 better off than we are now.
1295. By losing the money at present invested you save £1,000? Yes.
1296. Besides doing so, do you also save time? No; that is included.
1297. Everything included, you would be £1,000 better off after providing interest on the cost of the deviation? Yes.
1298. Now, touching Mr. Rock's proposed line: his proposed route would take a line from Mount Victoria to Bowenfels, a distance of 17 miles, with a grade of 1 in 50; if that line could be constructed for less than the No. 1 deviation, do you think it would be an advantage to construct it and abandon the present line to Eskbank? Does Mr. Rock cut out Eskbank and the coal sidings there?
1299. He joins the main line at Bowenfels; there would be a long siding from there to Lithgow and Eskbank? I do not think that that would be an advantage. Some of the coal sidings are down near the lower points, so that the coal would have to be taken 3 or 4 miles to get to Bowenfels.
1300. Why do you not think it would be an advantage? Well, the traffic from Eskbank is very considerable.
1301. Would you not still get that traffic? Yes; but we should have to bear the expense of taking it down to the junction, whereas now we pick it up along the road.
1302. Would the additional cost of taking it down to the junction neutralise any advantage which you might gain in constructing a cheaper line? I do not know; I have not seen the line.
1303. You may treat it as a continuous grade of 1 in 50? Then it would be very expensive to work, and we should not save so many trains a day as would be saved on Mr. Foxlee's deviation. I think that either of the proposed deviations is better than that.
1304. Or the existing line? Or the existing line.
1305. Your objection is to the continuous grade? Yes.
1306. You think that that would be an insuperable objection? Yes.
1307. I understand that there is a continuous grade of 1 in 50 for $8\frac{1}{2}$ miles? That would be very bad; but I should like to see the sections before giving an opinion on the line. If the grade were a continuous one that would be against it; but if there were only bits of this 1 in 50, and the drivers had places where they could recover themselves, it would not be so objectionable.
1308. A continuous grade of 1 in 50 for 8 miles would be objectionable? Yes, certainly.
1309. Can you state the volume of the traffic coming from the Valley, as compared with that coming from beyond the Valley? When they are busy there I should say it is about one-fourth. We sometimes bring as many as 100 trucks a day from there.
1310. You consider that one-fourth of the western traffic comes from the Valley? Yes, quite that, when the mines are busy in the winter season.
1311. *Chairman.*] In volume and in value? Not in value.
1312. I mean value to the Department? No; because although it costs us as much to bring a truck of coal as to bring a truck of wool to Sydney, we get four times as much for the truck of wool as we get for the truck of coal.
1313. Do you get any profit from the coal? Not very much, but I have not worked the rates out.
1314. *Mr. Humphery.*] The No. 3 scheme has a grade of 1 in 60, and is about 2 miles longer than the Commissioners' deviation, which has a grade of 1 in 50, going through a tunnel; could you take the traffic over the No. 3 line at less cost for the whole distance than you could take it over the Commissioners' deviation, having regard to the difference in grades? As regards the up traffic, if we have to use a push-up engine through the tunnel, I should say yes; but with the down traffic we could get over the Commissioners' line in less time, because the distance is 2 miles shorter, and it would be as easy to run down a grade of 1 in 50 as to run down a grade of 1 in 60.

1315. But what about wear and tear? There would be more wear and tear on the longer line.
1316. The wear and tear would not be greater where the severer grade was? No, I do not think so, because there are no curves in that line. The wear and tear is greatest where there are curves.
1317. *Chairman.*] Although there may be fewer curves on the No. 1 line, there is one very sharp curve near the tunnel? Yes; but it is very short. I would prefer, however, that you should ask Mr. Foxlee, or some of the engineers, these questions.
1318. *Mr. Humphery.*] Knowing the difference in length and grade between the No. 1 and the No. 3 proposal, and knowing also that the longest tunnel on the No. 3 line is not more than 700 yards, which would you prefer? For the down traffic I prefer No. 1, and if the long tunnel on the Commissioners' line could be worked without a push-up engine for the up traffic, I should prefer the shorter route, though I do not like tunnels. The saving of 2 miles is a consideration.
1319. Suppose you could not use the long tunnel without a push-up engine? Then I should prefer the No. 3 line.
1320. Is it your opinion that it would be necessary to use the push-up engine on the Commissioners' deviation? I think Mr. Thow will be able to speak more definitely on that point. My opinion is that we should get most of the trains through there without it.
1321. *Chairman.*] Are you aware the approach to the tunnel on the Commissioners' deviation the grade will be 1 in 42? Yes; we should have to use a push-up engine there, but I think we could get the trains through the tunnel without it.
1322. *Mr. Collins.*] Is the trade from the western districts increasing? At present it is rather slack, but on the whole it is increasing.
1323. In all respects? Yes; the quantity of farm produce, wool, and stock sent over the line is increasing, though at the present time things are dull.
1324. If the traffic continues to increase the saving will be larger? Yes.

H.
Richardson,
Esq.
15 Mar., 1894.

MONDAY, 19 MARCH, 1894.

Present:—

JACOB GARRARD, Esq. (CHAIRMAN).

The Hon. WILLIAM HENRY SUTTOR.	The Hon. WILLIAM JOSEPH TRICKETT.
The Hon. JAMES HOSKINS.	THOMAS THOMSON EWING, Esq.
The Hon. FREDERICK THOMAS HUMPHERY.	JOHN CASH NEILD, Esq.
The Hon. JOHN DAVIES, C.M.G.	EDWARD WILLIAM O'SULLIVAN, Esq.
	CHARLES COLLINS, Esq.

The Committee further considered the proposed Deviation to avoid the Lithgow Zigzag.

William Thow, Esq., Chief Mechanical Engineer, Department of Railways, sworn, and examined:—

1325. *Mr. Davies.*] Can you tell us the different grades from Mount Victoria to Eskbank? I can give them from Bell to Eskbank, but I have not the grades from Mount Victoria with me. There is a rising grade from Bell station of 1 in 80. That is followed by a few short grades which are nearly level. There is a descending grade to Dargan's Creek of 1 in 50, and an ascending grade of 1 in 33 to Clarence Siding. Then there are descending grades of 1 in 66, a short one of 1 in 40, another 1 in 66, with a small piece of level, and again other heavy grades through the Zigzag which commence there, from 1 in 42 down to the bottom of the Zigzag at Oakey Park, when they run into 1 in 150 on to Eskbank.
1326. On what portion of the line which you have described do you regard the grades as the most dangerous and as likely to affect the wear and tear of rolling stock? The Zigzag portion—1 in 42 grades.
1327. Starting from where? They begin a little beyond the 89-mile. Then there is a piece of 1 in 40 on the Sydney side, with others of 1 in 66 on each side of it up to Clarence Siding.
1328. What difference in the cost of rolling stock do you consider that this portion of line entails upon the Department by reason of those grades? It would be very difficult to arrive at a calculation, because we have never kept the cost of this small portion of the line separate. There is no doubt that it is much heavier than our average.
1329. Take the length from Bell to Eskbank—could you give an estimate of what the cost of wear and tear would be, compared with any other portion of the Western Line? I should think it would be 50 per cent. greater—that is, as far as the locomotive cost is concerned.
1330. What about the rolling stock? I am speaking of the engines, carriages, waggons, and so on.
1331. Is that one of the strongest reasons in favour of the deviation of the line? I should think it was not the strongest reason. I may say, however, that I am not acquainted with the Commissioners' reasons for entering into this question at all. There is, however, a risk in the Zigzag which seems to me to be a very desirable thing to be eliminated.
1332. A risk to life and stock? Yes; without great care we should certainly have accidents there.
1333. Has there been any large number of accidents? Not a large amount, but it is a more risky piece of line to work than our ordinary line.
1334. Consequently, I suppose, greater care is exercised? It requires greater care.
1335. Have not the Commissioners conferred with you and other officers of the Department in view of the deviation? Only so far as to show what saving there might be in substituting these proposals for the present working.
1336. You are aware that they estimate to save something like £10,000? Yes.
1337. And that is made up of train mileage at 4s. 6d. a mile? Four shillings and eightpence.
1338. How do you arrive at the 4s. 6d. per mile? The permanent way charges are 15-10d.
1339. Is that the cost of maintenance and keeping the road in repair? Yes; that does not apply to this particular piece of road. That is the uniform charge right through. Then the locomotive charges are 17-83d., carriages and waggons 4-13d.
1340. How is the locomotive power made up? Repairs for engines, wages, charges connected with offices, repairs of machinery, everything which comes under my control. The traffic expenses are 16-93d.
1341. Can you distinguish between the severe grades on the Zigzag and some other portion, say, on the

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Southern line with an easy grade of 1 in 100? Only by assuming, as I did just now, that the difference in cost would be 50 per cent.

1342. Can you separate from your general estimate the cost of traction over the Zigzag portion? No; we have not kept it.

1343. Do you estimate the cost of traction at a much higher rate as compared with the general system? Yes; as far as the locomotive power is concerned, I should think it would cost 33d. instead of 22d.—50 per cent. more.

1344. Would the cost of the permanent way be also increased proportionately over that particular track? I should think it would; but Mr. Foxlee would be able to give you an opinion. There is increased wear and tear of locomotives, increased fuel and men's wages, because they are longer on the journey. It takes them longer to get over this piece of road than on the level.

1345. I take it that the friction and wear and tear to carriages and rolling stock generally is greater on the Zigzag than on an ordinary line? The cost would certainly be greater.

1346. Do you regard it as absolutely necessary for the Mountain and Western traffic that there should be a deviation and easier grades made? No, I do not consider it absolutely necessary. We could go on working the Zigzag for years to come. But the deviation would be an advantage.

1347. You could go on for years to come with perfect safety? I think so; just the same as we have been doing.

1348. But it would make a hole in your earning if the cost of traction is so much higher than on an ordinary portion of the line? It would be a very great convenience to have a straighter line than the Zigzag, not only in regard to the cost of working, but also in regard to safety.

1349. Safety is one of the principal things which concerns you? I think so.

1350. Have you to use additional engines on this line to raise your loads from point to point? Yes; we use push-up engines from Eskbank to the top of the incline at Clarence.

1351. Is that a separate item? No; that would be included in the 4s. 8d. It would go into the general account.

1352. Can you give any idea of the actual cost of the mileage of this particularly bad portion which you speak of. Would it cost 10s. per mile including all accounts? I do not think so.

1353. What would it cost? About 7s. 6d.

1354. Not double the cost of the general average? I would not expect it to be double, but that is only an approximation.

1355. What would be the total amount saved on rolling stock, locomotives, and wages, if this deviation were effected? I have not gone into the matter simply from a locomotive point of view. I went into it with Mr. Kirkealdie and Mr. Foxlee, as a railway question, and our estimate was that we should save about £10,000.

1356. Have the three of you prepared a statement? Yes.

1357. Would you mind reading it? Taking the different items of saving, we made it out to be about £10,000. With regard to the number of trains that are at present at work—that is, going over the Zigzag. Leaving Sydney on the down journey, there are 2,370 passing that particular place, and on the up journey 2,192, or 4,562 altogether in a year. By either Mr. Foxlee's scheme, or Mr. Deane's scheme, that number could be reduced. Instead of a total of 4,562, 3,276 would be sufficient. That is to say, with either of the two schemes. I am speaking now of goods trains only. The mileage saved would be between Bell and Eskbank, on that reduced number of trains.

1358. What would be the mileage saved? The total miles would be 14,950, and taking that at the average cost of 4s. 8d. per mile, there would be a saving of £3,488.

1359. *Chairman.*] That is based on No. 1 scheme? That mileage is between Bell and Eskbank, and for either scheme.

1360. You said the mileage would be saved. Is that over the existing length? At present we carry certain trains on to Bell. There they are divided, and they run on to Eskbank. Coming the other way the same thing occurs, and that is occasioned by having this heavy piece of road. If the road is made easier, instead of dividing the train at Bell or Eskbank, we shall carry them right forward, so that we would save on those trains which would be unnecessary, 11½ miles on each train—that is the distance between Bell and Eskbank.

1361. But the only thing is that you are running your vehicles over the same length of road except to this extent: instead of having them in two trains you have them in one? We are running the same number of vehicles, but not the same number of engines. The engine power is less, and that is where the bulk of the cost comes in. The fuel is saved and that is a great item. That saving, I may say, is common to both No. 1 and No. 3 schemes; but there is a further saving in each scheme which is not alike. On the remaining 3,276 trains—those which would have to run—there would be a saving under Mr. Foxlee's scheme of 2½ miles over the present distance, and under Mr. Deane's scheme a saving of three-quarters of a mile. That saving would give a credit to Mr. Foxlee's scheme of £2,971, and to Mr. Deane's scheme of £573. With regard to the difference in grade you will see that it would not help us very much, because we have between Dargan's Creek and Bell 1½ miles of 1 in 50. So that the load that we could take up this piece of road between Dargan's Creek and Bell would be the limit. We could not take over Mr. Deane's scheme, although it is 1 in 60, any greater load than would go up 1 in 50.

1362. That is 1½ miles? Yes.

1363. What about the 1 in 42? The trains would have to be pushed up that 1 in 42. With either scheme we would use to have a push-up engine on the 1 in 42, but if that is done, the 1 in 60 scheme would not give us any advantage in point of load, because we must take the load up the 1 in 50, unless it is cut out. If that could be reduced to 1 in 60 there would be a considerable advantage.

1364. You credit Mr. Foxlee's scheme with some £2,000 saving? Yes.

1365. And Mr. Deane's scheme, by reason of the objections to which you have just now referred, would be only £500? Not on that account; but his distance is greater than Mr. Foxlee's, and these savings are due to the reduced train mileage.

1366. Not to the grades? No.

1367. But is it a fair set-off against the additional length of Mr. Deane's scheme, the saving which would be effected on the rolling stock which you state at 50 per cent? Yes; it would be a little easier in that way. The lighter grade to surmount would be easier on the engine; the fuel would be less.

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1368. Would not the wear and tear be much reduced? No doubt it would be a little less.
1369. At what do you estimate the difference between the No. 1 scheme and the No. 3 scheme. I refer to the wear and tear on the rolling stock? I think it might be taken at 4d. a mile. The probability is, that the difference will be made in the time. Being an easier grade the same coal would be spent, but the time would be shortened.
1370. That is Mr. Dean's scheme? Yes; being an easy grade the time would perhaps be the same as under Mr. Foxlee's scheme; that is to say, Mr. Deane might get over 2½th miles in the same time that Mr. Foxlee would get through his tunnel.
1371. You are aware of the length of the tunnel under Mr. Foxlee's scheme? About 1⅓rd mile.
1372. Do you think it would be wise to have a tunnel of that character on the Zigzag? It would not be wise to have a single-line tunnel.
1373. But supposing it is a double line? I should prefer the open.
1374. Even if it should be a little longer distance and an easier grade, you prefer the open? I think it would be better.
1375. *Mr. Hoskins.*] Can you tell me which is the steepest grade between Eskbank and Bathurst? I think there is a piece 1 in 33.
1376. Are the grades pretty long? Yes; but I cannot tell you the lengths.
1377. What do you consider are the special risks in working the Zigzag? At night it is a very awkward thing indeed to stop your train at the exact place; it is awkward in the day, but at night it is particularly so. The wings of the Zigzag are short, and then there is the risk of breaking away. We have had one or two accidents due to couplings parting, and the train running back. That has been a source of anxiety to everyone in working the Zigzag.
1378. With regard to couplings breaking and trucks running away, would not that be equally as applicable to steep gradients on the other parts of the line between Eskbank and Bathurst? Yes; but at the Zigzag we have so many curves combined with steep grades. Again, the very nature of the place must impart to an accident occurring there a very considerable character, which you do not feel when you are dealing with straight or comparatively level pieces of country.
1379. Are not the goods trucks connected with several couplings? Yes; they have side chains as well as the main couplings, but that does not prevent them breaking.
1380. Does it not often happen that couplings are snapped by engine drivers suddenly jerking their engines, or suddenly shutting off steam? It arises from different causes. Want of care is one of the main causes.
1381. We have it in evidence that there is a distance of 1 mile 62 chains with gradients of 1 in 30, and 13 miles 2 chains, with a gradient of 1 in 33 between Emu Plains and Katoomba. Does it not follow that the probability of couplings being broken and trucks running away, is as likely to occur on other portions of the line as on the Zigzag? Yes; but we push up at those places. We push up all our goods trains from Emu Plains to Katoomba.
1382. But do you push up all trains where there are steep grades except at the Zigzag? Not in every case, but we push up where you speak of on each side of Katoomba. We push up from Emu Plains to Katoomba, and between Eskbank and Bell.
1383. Therefore, the difficulties of working the line at the Zigzag in respect to the steep gradients necessitating increased haulage is not greater than on the other side of the steep inclines, inasmuch as you require push-up engines at both places? We wish to do without them where we can. It is too serious a matter to think of doing without them between Emu Plains and Katoomba. But here is a little bit of country which we acknowledge to be dangerous. In other words, it is risky, and it is very difficult to get through on account of the push-up engines having to return from the summit.
1384. But you say you use push-up engines between Eskbank and Bathurst. Are they not equally expensive? It is expensive wherever it occurs but we cannot get over the Zigzag so easily without them.
1385. In point of fact the desire for doing away with this piece of road and incurring the expense of a new one is not alone because you can do away with push-up engines, because you have got to deal with them on other parts of the line, but simply because it is thought to be risky? The engines which push up between Emu Plains and Katoomba are not the same that push up between Eskbank and Bell.
1386. Why? They do not go beyond Katoomba. The others go out of Eskbank shed, push up as far as Bell and go back again.
1387. But I am speaking of pushing towards Bathurst? Even then they are different engines.
1388. But even then engine power has to be used to assist to get the trains up the steep inclines in other places besides the Zigzag? That is quite true, occasionally; but it adds to our cost, because instead of employing three engines between Emu Plains and Bathurst for pushing up purposes, we might only employ two.
1389. But supposing you did away with the steep inclines at the Zigzag you still, of your own showing, would have to use push-up engines on the remainder of the line? But not the same engines. We would get rid of the cost of the push-up engines at the Zigzag entirely, and reduce the total number.
1390. Supposing No. 1 scheme, in which there is a long tunnel with a grade of 1 in 50 is carried out and there are greasy rails, and the approach to the tunnel is 1 in 42, in what way would you dispense with the push-up trains there? We should push up as far as the end of the 1 in 42, and if the rails were greasy through the tunnel we should have to push up through it.
1391. Therefore it is problematical as to whether you would be able to dispense with a push-up engine even if you had a new road? We think we would.
1392. But still you would not guarantee that you would? I could not guarantee that we would, because it depends on the condition of the tunnel.
1393. Under any circumstances, if you use push-up engines to assist trains up the other steep gradients to which I have alluded, you would only be able, if the Zigzag as it at present exists is done away with, to dispense with a push-up engine for a short distance? No; I do not think you apprehend the question exactly. The engine which pushes up between Emu Plains and Katoomba does not go any further. It goes back. The engine which pushes up from Eskbank to Clarence goes no further. It goes back and is ready for another train, so that we cut out these engines altogether, as far as Eskbank and Clarence are concerned.
1394. Therefore, you would be only saving the expense—and perhaps not saving it—of the push-up engines from the bottom points to the Clarence? Yes, on either of the schemes. 1395.

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1395. At the same time you would have to use push-up engines both east and west of the tunnel? Yes.
1396. You are familiar with the Western line? Yes.
1397. Are there not several places on the western line where there are steep gradients of 1 in 30 or 1 in 33, and curves of 8 chains radius on embankments? Yes.
1398. Is the risk of working this long gradient of 1 in 40 on the Zigzag greater than it would be on gradients of 1 in 33 on embankments with curves of 8 chains radius? I think so.
1399. Why? Simply from the awkwardness of the formation. Then we have to divide the trains. For instance, a train is pushed up as far as the bottom points. There it is divided, and we have two portions of that train standing on the road close together.
1400. Would not that apply equally to the other steep gradients on the line if the engine-power was not adequate to surmount them? Not in the way you are suggesting, because there we have only one train moving at the same time.
1401. But you have only one moving on the Zigzag Mountain? But we have another standing on the same road. If the first portion breaks away a collision would be certain with the second portion.
1402. You never divide trains to follow the long lengths of steep gradients? It rarely happens; but it is the constant practice on the Zigzag.
1403. Do you think there is any greater danger in working the Zigzag at Lithgow than in working the long length of steep gradients on the northern line going down to Peat's Ferry? Yes; I think there is.
1404. Why? Because at Peat's Ferry we take the whole of the train behind, and there is nothing standing on a portion of the road. We divide the trains at the Zigzag, and we have that additional risk.
1405. Do you divide the trains at the steep incline at Peat's Ferry? No; we generally push up with heavy trains there.
1406. Are there not the same dangers of couplings breaking, and so on, on some of the steep gradients of the Illawarra line? There is always that risk, but there is not the obstruction you get on the Zigzag, with a divided train.
1407. But have they not to frequently divide trains on other inclines? It does occasionally happen, but not often.
1408. You told Mr. Davies that the working of the Zigzag was 50 per cent. over the working of other portions of the line? As far as the locomotive power is concerned.
1409. Can you tell us how that is made out when there are other portions of the line on which push-up engines are required? I think you have mistaken me. I said to Mr. Davies that I thought there would be an increase of 50 per cent. at the Zigzag on the average cost over the whole system.
1410. Would not that apply equally to all steep gradients? It would apply to where we use push-up engines and move slowly.
1411. Therefore, it applies to the railway between Emu Plains and Katoomba? It does.
1412. And also to the railway between Eskbank and Bathurst? Some portions of it.
1413. *Mr. Trickett.*] When Mr. Barling was examined he gave an extract from a communication given by the Commissioners to the Minister for Railways on the 24th November, and he stated that ever since the Commissioners had been in office the disadvantage of passing traffic over the Lithgow Valley Zigzag had been continually before them, as well as continual risk in the working consequent on trains loaded with passengers having to be propelled both up and down over the intermediate section of the Zigzag. Will you kindly explain what that means? It means that the carriages have to be pushed over the intermediate length before the top and bottom points by the train engine.
1414. That, according to the Commissioners' minute, seems to be the chief feature of danger? It is a very considerable risk.
1415. Because the carriages are apt to be pushed off the line? Yes; and the enginemmen cannot see so well what is in front of him.
1416. You look upon it as a considerable feature in the risk? I do.
1417. Have you ever heard whether the construction of the Zigzag is faulty at all? No.
1418. *Mr. Neild.*] When you were answering Mr. Davies you gave one or two sets of figures which showed how the proposed or expected saving of £10,000 would be achieved; for instance, you gave us a sum of £3,488 for mileage saved at 4s. 8d. per mile. You gave us a further saving of £2,197 as a saving on Mr. Foxlee's line, making a total of £5,685. Can you give the Committee any information as to how the balance of £315 is made up? Yes; I did not finish the account. We have also the passenger mileage to consider.
1419. The figures you have already given relate only to goods? Yes, and live stock. Then we have the passenger mileage. We are running now 1,404 passenger trains per annum. That would not be altered. You cannot decrease the number of passenger trains, therefore, all we would get there is for running these trains over a shorter distance as compared with the present arrangements. There would be 4,036 miles saved as regards Mr. Foxlee's scheme and as regards Mr. Deane's 1,053. These taken at 4s. 8d. per mile give £942 to Mr. Foxlee's scheme, and £246 to Mr. Deane's scheme. Then we have the estimated saving due to shorter time of engine drivers and guards on duty. I may say a good deal of delay takes place in this way. A train will leave Bell, for instance, and it runs down to Eskbank, but no other trains are allowed to leave Bell until it gets to Clarence; so that if a train is standing at Bell or at Clarence in the meantime the men are idle.
1420. What do you estimate that at? In the case of Mr. Foxlee's scheme we should save about an hour on the journey each way, and by Mr. Deane's scheme we should save three-quarters of an hour each way. The saving of wages under Mr. Foxlee's scheme is estimated at £3,000, and under Mr. Deane's scheme at £2,250. Under Mr. Deane's scheme there is a certain saving due to push-up engines not being required, and that would amount to £1,635. If the tunnel is dry we shall not require to push up under Mr. Foxlee's scheme, therefore the same would be saved.
1421. But you would hardly hope for that? I should hope for it, but I do not know that I should get it. I think it is possible that the tunnel would be dry in that formation. Therefore I do not think the push-up engine would require to go beyond the 1 in 42.
1422. Supposing you do require a push-up engine? Then we should not save any of this amount on Mr. Foxlee's scheme.
1423. You estimate this at 4s. 8d. a mile. Is that the average cost of running on all the lines? Yes; that includes everything.
1424. Does that include wages. Yes.
1425. You will save 4s. 8d. everywhere possible and £3,000 a year in wages into the bargain? Yes; but that is due to delays on other trains, the reduction of overtime and so on. I think it is a legitimate saving.

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1426. Does the 4s. 8d. a mile include station charges? Yes.
1427. Are there any stations between these two points? There are men at Clarence, and then there are pointsmen at the top and bottom points.
1428. On the new line there would be no station provided? Very likely not.
1429. That would make some difference? Yes.
1430. Would it be large enough for you to estimate? I do not think so. I think the 4s. 8d. per mile is the fairest comparison we can make, unless we were to go into very minute detail. That might be done, but it would be a very heavy labour, and I am not sure that we should arrive at a fairer comparison than this.
1431. What are your average earnings per mile? Seven shillings and nine-pence half-penny.
1432. How many trains do you run over this piece of road in the year? At present 5,966.
1433. Does that include special trains? No; special trains would add to the number.
1434. I suppose there would be fully thirty-four special trains in the course of the year, so that we may take the number at 6,000? Yes.
1435. There would be a difference between the length of the present line which it is proposed to cut out, and Mr. Foxlee's scheme of $2\frac{1}{2}$ miles? We have shown from the information we had when this estimate was made that the difference was $2\frac{1}{8}$ miles.
1436. You made your estimate upon that supposition? Yes.
1437. That $2\frac{1}{8}$ miles, at 7s 9 $\frac{1}{2}$ d. per mile, would amount to over £6,000 a year lost in earnings? If they fixed the charges on the mileage basis.
1438. But are they not fixed on the mileage basis generally? I do not know what might be done in the case of this deviation.
1439. But what is the practice now? The practice is to fix it on the mileage basis.
1440. At the present rate per mile, the loss of earnings on $2\frac{1}{8}$ miles would represent quite £6,500? I cannot say whether that is the correct way to look at the matter. You would have to appeal to Mr. Kirkcaldie, and he might be able to show you that that would not take place.
1441. In estimating your savings in connection with the goods traffic, I think you estimated that the 4s. 8d. relates to the whole—engines and trucks—and you also admitted that a portion of the saving would be on the engine, whilst the same number of trucks would have to run? The same trucks would have to run.
1442. Would you also allow anything for wear and tear of trucks? I said to Mr. Davics that the locomotive cost would probably be increased 50 per cent., but we have not allowed that increase in the 4s. 8d. We thought it was a fairer way to look at it. Instead of adding to the cost on the one hand, and taking away from it on another, we thought it fairer to take the general average over the whole lines, and apply it to both schemes.
1443. Do I understand from that reply that if the tunnel were built, and Mr. Foxlee's scheme were carried out you would have 50 per cent. increase of work on the locomotives? Not over what we are doing at present. The cost of working this piece of road at present is probably 50 per cent. so far as locomotive costs are concerned, as compared with the cost of working the lines as a whole. I think I said that, instead of the cost of locomotive power being 1s. 10d., it might be 2s. 9d. over this particular road.
1444. You speak about the possibility of this tunnel being dry and clean;—is the Clarence a dry tunnel? No; it is a single-line tunnel, and a single-line tunnel will always be greasy.
1445. What double-line tunnels have we? There is one at Mullet Creek on the Newcastle line, and it keeps dry.
1446. Is that in a foggy locality? Not particularly; but I think it would be a wet tunnel if the line were single.
1447. Are there many double-line tunnels in Australia which would help you to form an opinion as to the prospects of this one as a double line tunnel? The only experience we have is on the Hawkesbury line. The tunnels to the Hawkesbury are all double, but they are all short, except the one at Mullet Creek.
1448. They are all north and south, practically? Yes.
1449. Are not the prevailing winds in this Colony north and south more than east and west? I do not think that would affect these tunnels. There may be some of these very tunnels running east and west. As a general rule, the direction on this line is north and south, but the curves at that part of the road might fetch the tunnels east and west.
1450. What is the length of the Woy Woy tunnel? About a mile.
1451. Would not an addition of three quarters of a mile, or almost of doubling the length, have a tendency to promote the greasiness of the rails? There is no doubt about that. A long tunnel is more likely to cause greasy rails than a short one.
1452. What is the gradient in the Woy Woy? It is very slight, indeed.
1453. I suppose that a tunnel with an easy gradient would be not only easier but safer to work than one with a grade of 1 in 50? I think so.
1454. Do you find the Lapstone tunnel inclined to be greasy? Yes; it is a single line, and that is the reason of it.
1455. Have there been any accidents on the Zigzag during your tenure of office? A few.
1456. Can you say whether they have been due to careless driving, through faults in the construction of the line, through faults in the rolling stock, or through unavoidable accident? I think through unavoidable accident. No doubt some of them may be due to careless driving, and others in bad welds in the couplings. I do not think any of them have been due to faults in the road.
1457. How many accidents have there been between Bell and Penrith during the last five years? Not many; there was one near Bell when the bank slipped away.
1458. And there was a substantial accident near Katoomba? There may have been three or four within five years.
1459. Have you any idea what has been the cost of them? No.
1460. Is it proposed to do anything with the heavy grades between Bell and Penrith? I do not think there is any suggestion of that kind.
1461. Is it not proposed to make some alterations in the curves and gradients at Linden? That may be as far as the straightening of the curves is concerned.
1462. But the straightening of the curves would not necessarily imply an alteration of the grade? No; I have not heard of any definite suggestion of that kind even at Linden.

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1463. You do not think that the difference in the grade between 50 and 60 between the tunnel and Mr. Deane's scheme would be any particular advantage to your Department? As long as we have that 1 in 50 grade between Dargan's Creek and Bell to get over, I do not think it would help us.
1464. *Mr. Collins.*] I understand you to say that even if the proposal of the Commissioners or Mr. Deane's scheme is carried out you would probably have to use a push-up engine? We should have to use it as far as the 1 in 42 grade, say into the mouth of the tunnel.
1465. And there is a possibility of your using it along the whole length of the tunnel. If the rails are greasy we shall have to use it through a 1 in 50 tunnel.
1466. Consequently there would not be any saving? There would not be the £1,635 saving which I have mentioned.
1467. The only thing to be taken into consideration, then, would be the risk of working the Zigzag? Yes; and the shorter mileage as far as the expenses are concerned.
1468. Do you think it would be advisable to spend £225,000 to avert the risk? I could not give any opinion. That is a matter of policy.
1469. *Mr. Ewing.*] An ordinary traffic engine will pull a full train from Sydney to Penrith? Yes.
1470. What happens after leaving Emu Plains? An engine is behind the train at Emu Plains, generally.
1471. Where does it go to? To Katoomba.
1472. What happens then? The train goes on alone to Bell, and is assisted in front by an engine to the top points, and then is divided on account of the Zigzag. The train is too long to get down the Zigzag. It goes by sections into Eskbank.
1473. What happens going on to Bathurst? The train goes on for some distance by the same engine, and if it is heavy enough it has a push-up engine over the Marrangaroo bank and is divided over that heavy piece of road—1 in 33 grade.
1474. A single engine takes it from Eskbank, between Rydal and Wallerawang? Yes.
1475. What happens then? A push-up engine is put on over a part of the road for up trains.
1476. Where does it go to? It is only a short distance. It goes out from Wallerawang, and assists over the Marrangaroo bank. I think I had better send in a statement of the working of the push-up engines on the Bathurst side of Eskbank.
1477. What is your opinion of a 1 in 50 grade, say, with a length of 8½ miles? It will be a very severe pull for an engine.
1478. Would you look upon it as a serious bar to traffic? No; it would probably limit the load more than the 1 in 50 does now.
1479. You say, then, that in the construction of a line you would not have that if you could help it? No; I should like shorter grades than that.
1480. You have worked the present line for some years, and the traffic is not too heavy to make the use of it dangerous in itself? I do not think it is. At least the risk has not increased lately.
1481. In other words the traffic has not increased? No; but with heavy traffic of course the risk would increase.
1482. And the special danger of the Zigzag is, that you leave part of the train standing on the road where it might be run into? Yes; and there is the other risk of having to push the train in front of the engine on the intermediate section of the Zigzag.
1483. What would be the difference in the power required to take the same load on a 1 in 50 grade, on a curve of 8 chains or a curve of 12 chains? The curve does not mean very much in friction at slow speed. Curves on level lines mean a good deal; but curves on heavy grades do not mean much, because the resistance to gravity is the great thing on a heavy grade; therefore, that becomes the limit of your power. It is a very different thing when dealing with levels where you want to know the tractive power over a level and over a level with curves. Then the curves add considerably to the tractive power required on a level; but here, where our speeds are low, and the effect of gravity is considerable, a curve is not a very important element. On a 1 in 42 grade, where the Zigzag is for every ton that we lift up there, we have to exert 53½ lb. to lift it. That is due to gravity alone. On a 1 in 50 grade we would have to exert 45 lb., and on a 1 in 60 about 37½ lb. That is due to gravity. I do not suppose that the difference between an 8 and a 12 chain curve on such a line as that would add 5 per cent. of additional resistance.
1484. *Chairman.*] What load would you be able to take up a 1 in 60 as against a 1 in 50 grade? At present our most powerful engines would take thirty-three waggons over grades 1 in 42.
1485. Presuming you had the help of a push-up engine to the face of your long tunnel, how many trucks could one engine drag up the long tunnel—up the 1 in 50 grade? About forty.
1486. What could it drag on a 1 in 60 grade? About forty-six.
1487. *Mr. Humphery.*] How many trucks do you take now over the Zigzag? Our heaviest engines take thirty. That is owing to the shortness of the wings.
1488. Assuming No. 1 scheme to be carried out, instead of taking thirty trucks you will be able to take forty? Yes.
1489. I understand you to say that if the No. 1 scheme is carried out, instead of using three push-up engines at Lithgow Valley you will only use one? Yes.
1490. Can you say what the percentage of difference would be between the No. 1 and the No. 3 schemes? I think in all probability the trains would be hauled over No. 3 scheme in the same time as over No. 1.
1491. So that although No. 1 scheme is shorter there would be very little, if any, saving in time? In all probability the time would be the same.
1492. I think your evidence is that the average earnings is 7s. 9d.? Yes.
1493. And the average cost is 4s. 8d.? Yes.
1494. Supposing you cut out 2 miles you would lose the earnings on the 2 miles, if you saved the cost? That depends entirely on how the rates are fixed.
1495. But assuming you cut out 2 miles of line you lose the average earnings of 7s. 9d. and you save the average cost of 4s. 8d.? Supposing the charges made are fixed on the mileage, that would be the case.
1496. But you estimate the average earnings and the average cost now at per mile? No; as far as my evidence goes I have not touched the receipts at all, except in giving to one member of the Committee the earnings per mile. We have not made any comparison in the statements that have been got out as regards the earnings of the line. All that we have done has been to show what amount of money would be saved in the working expenditure.
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1497. Without deducting from the £10,000 estimated saving the possible loss by shortening the line? Without taking that into account at all, because that was not part of our instructions. We were looking into the saving as regards working expenditure.
1498. In the No. 3 and No. 1 schemes there is a difference in length of 2 miles. The 2 miles at present earn at the rate of 7s. 9d. per mile. That would be 15s. 6d. on the 2 miles, and you estimate a saving of 4s. 8d. per mile; that is 9s. 4d.; so that one practically neutralises the other? Yes, it would more than neutralise it, looking at the matter in that way.
1499. After all would this be the actual difference in the tunnel and the No. 3 line—that the No. 3 line would have a better grade in the first instance? Yes.
1500. The time of passing traffic over the two will be the same? Yes, on account of the limitation of load by 1 in 50.
1501. And the saving of time would only be on the down journey? Yes.
1502. In favour of the No. 1 scheme? Yes.
1503. And apparently the only advantage between the existing Zigzag and the proposed deviation would be that the trains would not be divided in ascending the Zigzag? There is a saving due to the difference in mileage.
1504. But supposing that is neutralised by the loss of earnings you come back to the one point? Of course, if you say there is to be a loss of earnings it would be neutralised.
1505. Then, would not the only advantage be this—that it would be more convenient, and there would be less risk in having the deviation than in working the line as at present? That would be the great advantage, no doubt.
1506. *Mr. O'Sullivan.*] I suppose it would be impossible to improve the grade between Dargan's Creek and Bell? It would be possible to do so by a deviation; but I am afraid that it would not be possible to improve the grade as it stands without considerable cost. It depends entirely upon the country. If it is simply a ridge which the line runs over—and I rather think it is—it would be a difficult thing to improve that grade. It might only be improved by taking the deviation in another direction.
1507. Supposing the line could be taken down Hartley Valley, would a descending grade of 1 in 50 for 8½ miles, and an ascending grade of 1 in 50 for 8½ miles—would that be too severe working for your engines? No; I take it that the great question coming in there, will be as to what length of line between given points will that grade necessitate. For instance, if it caused a greater mileage between Eskbank and Mount Victoria than the present line, we should lose by it.
1508. There would actually be a reduction in distance of 5½ miles? Yes.
1509. Would that, in your opinion, be a superior line to any of those now before us? I should want to know the whole of the features before giving an answer.
- 1509½. Would there be tunnels? One short tunnel of 30 chains.
1510. I am speaking of the proposed line between Mount Victoria and Bowenfels, on which there is only one short tunnel of 30 chains? I think any line which shortens the distance is an advantage, so long as it is not too severe.
1511. The engineer who laid out this line has suggested that the long pull of 8½ miles might be relieved by having flat places on the line? Yes; wherever we can introduce a level on a long grade, it is an advantage.
1512. You, as the head of the Locomotive Branch, do not anticipate any great difficulty from these two long lengths of 1 in 50 grade? No; because immediately after an engine gets on a grade of 1 in 50, or anything as severe as that, it settles down to its work at once. It does not go upon the grade far before it is working on the collar, and the speed is even right through. It is only a question then of giving the engine sufficient fuel to keep up the steam.
1513. Has the cutting out of the Lapstone Zigzag by means of the tunnel met your anticipations as to reduction in the cost of running? Yes; it is a great advantage. We can bring the loads down without dividing.
1514. Is that where the principal saving comes in? Yes; we bring the heavy loads right through.
1515. Can you take up any bigger load? No; the load is the same, the grade being the same.
1516. The only benefit is that you have not to divide your train owing to the shortness of the wings of the Lapstone Zigzag? Yes.
1517. *Mr. Humphrey.*] You have shortened your distance on the Lapstone? There is very little difference.
1518. *Mr. Hoskins.*] How many loaded trucks would a Baldwin engine take up the present Zigzag? They do not take any more than thirty. That is not the limit of their power, but the wings are too short. They could take thirty-three.
1519. *Chairman.*] Can you give us any idea of what you have saved on the Lapstone? I could not say.
1520. *Mr. Neild.*] With regard to the estimated saving of £3,000 in wages over this piece of line;—is not that £3,000 included in the general estimate of 4s. 8d. per mile;—does it not go to make up the total which, divided by the mileage, makes the 4s. 8d. per mile? It does; but at this particular place we have the saving located. Our men would be able to do more work in a day by having a straight run before them than at present. Whilst the engines are standing waiting for each other, we are paying our men and burning our fuel; and the expenditure is located at this particular place. I think that it is fair to take that into account and to make a proportion as we did on the basis of mileage.

Frederick Bowdler Gipps, Esq., Civil and Hydraulic Engineer, sworn, and examined:—

1521. *Mr. Hoskins.*] Will you kindly state what is the proposal you have to make for disposing of the Zigzag at Lithgow? My proposed deviation starts from Rooty Hill, 26 miles from Sydney, on the Great Western Line, runs a south-westerly course for 16 miles over easy country to the Nepean River; after crossing which, it intersects the divide of the Nepean and Werragamba rivers by a tunnel of about 40 chains. Then runs up the Werragamba Gorge to junction of Cox River; then follows the left bank of that river for about 4 miles, when it crosses it at 33 miles from Rooty Hill on to one of the spurs of the Kowmung Range, which it follows to the Main Dividing Range to Mount Werong, 80 miles from starting point. Thence it runs along the slopes of Main Divide to Shooter's Hill for another 8 miles; then follows a long westerly spur descending by a gentle slope to Blayney, about 152 miles from Rooty Hill. By adopting the German balk system of railways this line could be constructed for £680,000, or at an average of £4,500 per mile. The steepest grade would be 1 in 60, and the sharpest curve 12 chains. The first 33 miles could be constructed for an expenditure of £190,000. It would tap a large mineral field,

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- field, including iron, coal, and kerosene shale, and an extensive pastoral and agricultural country, including the Kanimbla, Cox, and Wollondilly Valleys. The next section of 47 miles to Mount Werong could be constructed for £250,000 on the Balk system, and would develop a large gold and silver country, besides an extensive area of good agricultural and pastoral country, besides approaching both Jenolan and Wombeyan Caves; and the last section of 72 miles crossing easy sloping country could be constructed for £240,000, and would also tap and develop a large area of mineral and agricultural country. By a well-concerted plan of village settlements fully 4,000 people might be settled on Government lands during the construction of the line, whilst the mineral prospects would induce as many more to try their fortunes there; consequently a large passenger and freight traffic would shortly be ensured, independent of the settlers on the Cox and Wollondilly Valleys, whilst it would relieve all the traffic west of Blayney. The sale of township and agricultural land would cover the cost of the line.
1522. The Committee are not appointed to inquire into a proposed new line of railway, say, from Emu Plains, in the direction of Bathurst, but simply to inquire as to the propriety of making a short deviation, 2 or 3 miles in length, to avoid the present Zigzag to Lithgow, which would entail a limited expenditure? This is a deviation.
1523. But you commence at Rooty Hill, and you go distances which are not proposed to be served by the deviation at all? But with this the other would be unnecessary.
1524. But we are not empowered to make an inquiry into the propriety of making any line other than a short one of 2 or 3 miles in length, to avoid the present Zigzag. We cannot go beyond that? But it is a deviation from the present line.
1525. But we are not authorised to inquire into any deviation of the present line, excepting in regard to that portion at the Zigzag. What would be the cost of your proposed line? It would cost £689,000 for 152 miles.
1526. *Mr. Neild.*] You referred just now to the German Balk system;—will you explain what it is? The Balk system admits of continuous bearings with which the rail can be used at half the weight of rails on transverse sleepers, the joints are fished to prevent rocking, and the rails are tied with iron bars.
1527. In other words, it would be a continuous sleeper? Yes; they carry engines there with 12,000 lb. on each wheel, and they run at the rate of from 20 to 25 miles an hour.
1528. Are they six-wheeled engines, or eight-wheeled engines? Four-wheeled and six-wheeled.
1529. What is the weight of the line engine? They are smaller than those we use here.
1530. Smaller engines would not be able to draw the loads we draw? There is no steeper grade than 1 in 60 on the whole of my proposed line.
1531. Then a lighter engine would be sufficient? Yes.
1532. Would they take as heavy loads as we take over the 1 in 40 and 1 in 42 grades? Undoubtedly. The cost of constructing the line together with rolling stock, is only about £1,700 a mile in Germany; I estimate the average cost here at £4,500 a mile.
1533. So you say the rails are tied together with iron bars? Yes.
1534. What is the size of the bars? They are round bars of about 1½ inches.
1535. How long has this system been in vogue in Germany? Eight or ten years.
1536. For what gauge are these lines used? They could be used up to 4 feet 8½ inches.
1537. What is the common gauge in Germany where this method is adopted? It varies from 3 feet 6 inches to 4 feet 8½ inches.
1538. Are you confident about the 4 feet 8½ inches? I cannot say that I have seen it, but there is no reason why it should not be used.
1539. How are the rails connected with the sleepers? They are pinned down.
1540. Is this system in vogue in any place outside Germany? Not that I know of.
1541. Are they used for private or Government lines? Government lines.
1542. Are they used for the military lines? For military purposes chiefly.
1543. What do you estimate to be the difference between the cost of lines constructed and a line of ordinary sleepers? Through ordinary country it would be about £1,500 or £1,600 a mile.
1544. In favour of the Balk system? Yes.
1545. Are you advocating the application of the Balk system to the Blayney line? Yes.
1546. And have you based your estimate on the adoption of that system? Yes.
1547. Have you any tunnels on that line? The longest tunnel we have is on the intersection ridge of the Warragamba to Nepean River; that is 40 chains.
1548. How near would your line run to Eskbank from Lithgow? Not within 35 miles.
1549. And what are your shortest curves? Twelve chains.
1550. Would there be many as short as that? Yes; a good many going up the Kowmung Range which abuts on the Cox River about 5 miles above its junction with the Wollondilly.
1551. You notice from the proposals of the Railway Commissioners that there is to be a tunnel 2,816 yards in length. Is there to your knowledge any such tunnel in Australia? None that I know of.
1552. *Mr. Davies.*] What will be the length of your suggested line from Rooty Hill to Blayney? One hundred and fifty-two miles.
1553. What is the distance now from Rooty Hill to Blayney by the existing line? One hundred and forty-nine miles.
1554. So that there would not be any saving as far as distance is concerned? No; but it would reduce the grades to 1 in 60.
1555. Have you made a survey of the suggested route? I have made one to prove I can get a grade of 1 in 60 up the Kowmung Range.
1556. How have you arrived at the estimated cost? From a rough estimate.
1557. Not at all reliable? No; only a rough estimate.
1558. Have you gone over the whole route? Yes, several times; twice with Government officers, and two or three times by myself.
1559. You are aware that the reference to the Committee affects the present Zigzag, and not a new line of railway? But I still think it is a great waste of public money to carry it out.
1560. But you can give us no evidence with regard to the proposed deviations before the Committee? No; except that I cannot understand where the saving of £10,000 comes in.
1561. Have you made yourself acquainted with the proposals before the Committee? Through the newspapers.
1562. But have you not seen the plans until to-day? No.
1563. And you are not conversant with the different schemes? No.

1564. The only scheme you are conversant with is the one you have suggested? Yes.
1565. *Mr. Humphery.*] What is your reason for questioning the estimated saving of £10,000 a year? In the first place the ruling grade would still have to be 1 in 40. You could not avoid that, because there are several grades of 1 in 40 between Bathurst and Lithgow. Therefore, I do not see what saving there would be to the country by adopting the proposed line. The saving of £10,000 is estimated on train miles, but unless you could show that you had the traffic to give effect to these train miles the saving would vanish; and according to the last report I have seen, the traffic from Lithgow, instead of increasing, is actually falling off. For instance, the difference in traffic between 1892 and 1893 shows a decrease of £6,762 7s. 5d. from Eskbank, and £192 16s. 8d. from Lithgow.
1566. *Chairman.*] But does not all the traffic on the Western line come over the same Zigzag? But the only saving in train miles would be affected with the 1 in 50 which they propose to give.
1567. *Mr. Humphery.*] If the distance be 2 miles shorter as estimated, there will be a saving of 4s. 8d. for each train mile? According to Mr. Price's last report the present line should be able to run 1,490,000 tons a year, which is based on the running of twenty-four trains with a trainload of 160 tons a day.
1568. *Chairman.*] But our witnesses are those who have been actually running the traffic? Could they not run more on the present line?

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TUESDAY 20 MARCH, 1894.

Present:—

JACOB GARRARD, Esq. (CHAIRMAN).

The Hon. WILLIAM HENRY SUTTOR.	WILLIAM CHANDOS WALL, Esq.
The Hon. JAMES HOSKINS.	WILLIAM McCOURT, Esq.
The Hon. FREDERICK THOMAS HUMPHERY.	JOHN CASH NEILD, Esq.
The Hon. JOHN DAVIES, C.M.G.	EDWARD WILLIAM O'SULLIVAN, Esq.
The Hon. WILLIAM JOSEPH TRICKETT.	CHARLES COLLINS, Esq.
THOMAS THOMSON EWING, Esq.	HENRY DAWSON, Esq.

The Committee further considered the proposed Deviation to avoid the Lithgow Zigzag.

William Theodore Foxlee, Esq., M. Inst. C.E., Engineer-in-Chief for Existing Lines, Department of Railways, sworn, and examined:—

1569. *Mr. Neild.*] How long have you occupied your present position? I have been in the Colony a little over four years, and have occupied the position of Engineer-in-Chief for Existing Lines since September, 1891.

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1570. Had you any experience in the construction of railways before coming to this Colony? Yes, I had very considerable experience. Before coming to this Colony I was with the Great Eastern Company for about four years, and there I had charge of the construction of the set of railways in the Eastern Counties known as the Essex Lines. Previous to that, I was with the London North-Western Company for twelve and a half years, and, before that again, I was with the London South-Western Company. Altogether I have had about twenty-seven years' experience in railway engineering.

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1571. You designed what is known as the No. 1 deviation which is shown on the plan in puce, and has a tunnel 2,816 yards in length? Yes.

1572. Did you make the surveys for that line? They were prepared under my instructions.

1573. There has previously been a proposal for the construction of a tunnel in that locality? As far as my knowledge goes the Construction Department were asked in the latter part of 1890, to consider the question of cutting out the Zigzag, and the matter was then looked into in a cursory way; but in April, 1892, Mr. Burge was sent by Mr. Deane to inquire into it still further. He submitted a report on the subject, and that report contemplated the construction of a very long tunnel.

1574. Longer than that which you propose? Yes; a tunnel 2 miles, or a little more in length. The estimate of the cost of the scheme for a single line was £260,000. The matter, however, was allowed to drop again until June of the same year, because it was thought that such a scheme should not be taken in hand. I should mention that Mr. Burge's report was accompanied by a plan, but as no section was prepared, the estimate submitted was only approximate. The Commissioners then asked me to have a section taken over the proposed route in order that we might see, with some degree of exactness, what the length of the tunnel would be. I accordingly had a section taken, and it turned out that the tunnel would be quite 2 miles long, while it appeared that the expense, something like £300,000, could not be faced. The matter was then allowed to remain in abeyance until last year, when, I understand, Mr. Eddy had a conversation with the Premier about the desirability of providing remunerative work to the unemployed, and the cutting out of the Zigzag was referred to. I was asked to look into the matter again; I did so, and the scheme marked No. 1 is the result of my deliberations.

1575. Your deviation would save 2½ miles on the length of the existing line, I understand? The saving in length would be about 2 miles 71 chains.

1576. Do you consider that the scheme could be improved upon by a deviation;—have you under consideration any other proposal to avoid the Zigzag? The scheme before the Committee was submitted to the Commissioners and was considered in their opinion the best, and in my opinion it is so still. After the plans had been sent to the Works Department, however, it was suggested that a better route could be obtained by commencing the deviation somewhat nearer Eskbank, carrying the line up Farmer's Creek, and bringing it round towards Bell, at the top of the 1 in 50 grade.

1577. That would be on the north side of the line? Yes; this appeared to be feasible, and as it was thought by the Commissioners to be in the interest of the country that the route should be examined, we are now examining it; but, unfortunately, the weather has been so bad that we have not yet completed our investigations. Otherwise I should have been in a position to give the Committee some information in regard to it.

1578. When do you think it likely that, weather permitting, you will be able to complete your investigation? In the course of a week or ten days from now, if it is fine; but it is impossible to do any work while the weather continues as it is. So far as we know, the scheme before the Committee is the best; but we thought it right that this suggested alternative scheme should be looked into.

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1579. You are aware that the Commissioners have sought to have the investigation of the No. 1 scheme stopped, pending the completion of the survey to which you allude? Yes; pending the completion of the preliminary investigations.
1580. Can you give the Committee any idea of the probable length of the line which you are now surveying? I do not think it would be longer than the existing line. The proposal is to start at the foot of the 1 in 40 grade, near Eskbank, and go up Farmer's Creek, passing near the trigonometrical station to the north of Clarence tunnel, and join the existing line again at the top of the 1 in 50 grade at the 85th mile post, about $1\frac{1}{2}$ mile on the western side of Bell station. The effect of that deviation would be to cut out the 1 in 42 grade leading up to the bottom points, to cut out the Zigzag, to cut out the 1 in 33 grade from Dargan's Creek to Clarence siding against trains going westward, and to cut out the 1 in 50 Bell bank against loads going eastward. It would also get rid of a number of reverse curves.
1581. But I understand, from your statement, that you hardly consider the proposal a feasible one? I do not say that, because I am not able to express a definite opinion upon it. If we could carry it out for a reasonable amount, it would be worth considering seriously.
1582. There will be no saving in length by it? There are two routes under investigation, one of which will be about as long as the existing line, and the other possibly $1\frac{1}{2}$ mile shorter. Both of these routes would improve the existing line to the extent I have mentioned, and both are on the north side of it.
1583. *Chairman.*] Would the shorter one start from the same point as the other? Yes; and terminate at the same point.
1584. *Mr. Neild.*] Would either of them contain tunnels? Yes; both of them would.
1585. Tunnels of any special length? I cannot say; but from half a mile to a mile long.
1586. Are you carrying out this investigation with a view to the construction of a double line? The information obtained would be applicable to the construction of either a single or a double line.
1587. But these surveys having been completed, do you intend to submit your proposals as double or as single lines? I am certainly of opinion that whatever deviation is carried out, a double line should be constructed. It would never do to construct single line tunnels, and a few years hence ask the contractor to come on the ground again. That, in my opinion, would be a mad thing to do.
1588. You desire all these proposals to be looked upon as double lines? In my opinion they should be looked upon in that way. We have a length of double line from Bowenfels to the bottom points at the present time, and whatever alteration is made, should be in the direction of extending the double line, to afford additional facilities for working the traffic.
1589. Have you made any inquiry into proposals Nos. 2 and 3, marked respectively red and green on the plan? I have not had an opportunity of doing so. I know in a general way what Mr. Deane's proposals are; but I have had no opportunity of examining the plans. I know that the No. 2 scheme contemplates a spiral line, and that the circuitous route marked No. 3 is an alternative route; but I have had no opportunity of considering either of them.
1590. You are not in a position to make a comparison, for the information of the Committee, between your proposal and that of Mr. Deane? I understand that the No. 3 route—and as far as I can judge from the cartoon it would be so—saves about half a mile on the existing line, as against the 2 miles 71 chains saved by the Commissioners' deviation; but it seems to be a very crooked line. It has, however, a grade of 1 in 60, as compared with a grade of 1 in 50 on the Commissioners' line. Beyond that I know nothing, and any opinion I expressed without having had the plans and sections before me, and having gone over the ground, would be worth nothing. I would point out, however, that there is not much advantage gained in adopting a grade of 1 in 60, when the same load would have to be dragged up a 1 in 50 grade immediately afterwards. I would also point out that in the Commissioners' scheme there is a length of about three-quarters of a mile of down grade of $\frac{1}{2}$ chain at the Sydney end of the tunnel and a length at least over which trains would pass before facing the 1 in 50, known as Bell bank. That was put in advisedly, to give the engine breathing time, if I may so express it.
1591. Have you had any experience in connection with tunnels in this climate? Yes.
1592. Did you construct the Lapstone tunnel? Yes; but the plans were prepared by the Works Department.
1593. Do you regard that tunnel as a success from a traffic point of view? Yes, a decided success. It has effected a great saving.
1594. The length is something over 700 yards? The length is 32 chains—a little over 700 yards.
1595. Are you aware that it has been a subject of complaint by travellers, because of the steam and sulphur fumes in it? I have heard people complain of going through it, though it only takes about one and a quarter or one and a half minutes to do so in an ordinary passenger train, but people do not like travelling through tunnels; they do not like going into the dark. I have not, however, heard any very very serious complaints.
1596. And how much time would be occupied in passing through your proposed tunnel, 2,816 yards long? It would probably take three or four minutes for a train to come up from the bottom points to Dargan's Creek, and about two minutes for a train to pass through it in the opposite direction; but you cannot speak of the two tunnels in the same breath. The proposed tunnel is for a double line, whereas the Lapstone tunnel is for a single line. The tracing which I have here will show you the difference in area between a single line tunnel and a double line tunnel. In a double line tunnel the air space is more than double. Take the Woy Woy tunnel for example. Accustomed as I am to travelling over these railways, I have been through that tunnel at night without knowing it.
1597. How long does it take to pass through that tunnel? I should think about two and a half minutes.
1598. But the grade is not 1 in 50? No; it is 1 in 150.
1599. That makes a very considerable difference in the speed? I cannot tell you to within half a minute how long it takes to go through these tunnels; I am only speaking approximately. With regard to the ventilation of the tunnel, I am sure the Committee need not have the least concern on that score. If we were proposing a single line tunnel I could understand your questioning me; but, with my experience of railway work, I cannot understand any question being raised in regard to the ventilation of this tunnel, seeing that we propose to make it for a double line. There are tunnels all over the world 3, 4, 5, and 6 times as long as this where no artificial means of ventilation are used. The Mont Cenis tunnel, for example, between Modane and Bardonnèche, is 7 miles 78 chains long, and has a grade of 1 in 43.5 from the north-end rising towards the middle of the tunnel, with down grades of 1 in 2,000 and 1 in 1,000 and 1 in 70.3 falling towards the Italian frontier. There is machinery there for providing compressed air, and pipes furnished with cocks which can be turned on by the employees, run through the tunnel.

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1600. Are they ever turned on? I daresay they are; but you must remember the much greater length of that tunnel compared with the tunnel proposed at Lithgow. Then there is the St. Gothard tunnel, 9 miles 20 chains long; the Arlberg tunnel, 6½ miles 29 chains long; the Hoosac tunnel, in the United States, 4¼ miles long. No artificial ventilation is provided there.

1601. I suppose you recognise the great difference between the condition of the atmosphere at Woy Woy, and its condition in the vicinity of the proposed tunnel? I recognise the great difference, inasmuch as one is practically at sea level, and the other is over 3,000 feet above it. My own feeling is, that this tunnel would be one of the coolest and best places for sitting in on a hot day.

1602. But do you not get a great deal more fog on the mountains than you get at Woy Woy? There are fogs in the mountains certainly at times.

1603. Do not fogs produce greasiness of the rails? Yes; but they occur all over the mountains.

1604. Is there not a greater risk of the rails becoming greasy in the proposed tunnel than in the Woy Woy tunnel? I do not think so. When you are in close proximity to the sea you get much greater moisture. We find that our rails rust much more quickly when they are laid close to the sea. They have not half the life that similar rails have away from the seaboard, even though subject to fogs and what not.

1605. Is the Clarence tunnel a dry tunnel? A fairly dry tunnel.

1606. And you believe that although the proposed tunnel is a great deal longer and wider, it will be a dry tunnel? The width has very little to do with the dryness of a tunnel, though it has a great deal to do with the ventilation of it.

1607. Do you think that the rails in the proposed tunnel would become dangerously greasy? I am perfectly certain that they would not.

1608. You base that belief on your engineering knowledge? Upon my twenty-seven years' experience of railway work.

1609. You mentioned some tunnels in the old world which are of great length; is special fuel used for working them? No.

1610. Is the fuel used exactly the same as that used on an ordinary line? Precisely the same. In addition to the tunnels I have already mentioned, I might call your attention to the Lyttelton tunnel (a single-line tunnel) in New Zealand, which is 1 mile 50 chains long—over one mile longer than the proposed tunnel. I have not noticed any difficulty there as far as the ventilation is concerned. Then there is the Box tunnel upon the Great Western Railway in England, 1 mile 65 chains; the Standege tunnel upon the London and North-western Railway, 3 miles 3 chains; and the Kilsby tunnel, also on the London and North-western, 1 mile 30 chains in length.

1611. Do you propose to line your tunnel? Yes, with concrete.

1612. Throughout? Yes; and if you ask me why, I will tell you. There is a tendency in sandstone to blow or crumble when it is exposed to the air, so that it is better to line it with concrete, say 18 inches in thickness.

1613. Do you prefer concrete to brick? Yes; because the work can be done more cheaply. The stone excavated from the tunnel would answer admirably for the purpose.

1614. You propose to ventilate your tunnel with two shafts? Those shafts are provided not so much as a means of ventilation as for the purpose of facilitating construction. When they are sunk there will be six faces at which to work instead of only two. I believe it is almost the universal experience that shafts do not very materially assist the ventilation of a tunnel, unless they are provided with ventilating machinery.

1615. Is there a tendency for air entering the mouth of a tunnel to pass up the shafts and leave the middle part unventilated? It has very often been found that shafts interfere with and confuse the circulation of the air.

1616. Then I understand that you propose shafts for facilitating the construction rather than the ventilation of the tunnel? Yes, mainly; though, no doubt, they would assist somewhat in clearing the tunnel between trains. I should not rely upon them, but upon the difference in elevation on the two ends of the tunnel for the ventilation.

1617. Do you feel convinced that there will be no necessity for providing artificial ventilation? I am perfectly certain that you will not require any artificial ventilation for that tunnel, and to me it is astonishing that the question should be asked.

1618. But if the Committee have had the evidence of an eminent authority to the effect that such ventilation might be necessary, perhaps it would moderate your astonishment? It would moderate my astonishment at being asked the question; but it would not alter my opinion. It is, of course, for the Committee to decide whether my opinion is of any value or not.

1619. Have you taken any interest in the calculations made with a view to showing the financial advantages of your scheme? Naturally, as an engineer, I take great interest in the financial part of the business.

1620. Have you gone through the calculations which have been made as to the saving in train mileage consequent upon the saving in length? I am aware that calculations have been made, and I know the result of those calculations. But such matters pertain more to the work of the Traffic Department, and the officers of that Department, no doubt, would be able to give you more information about them than I can.

1621. You would not be prepared to answer questions on the subject? I think it would be better to refer to the traffic officers. The cost of maintenance, however, affects me, and it makes me fight shy of the No. 3 proposal at once, because I know that if it were carried out it would increase the cost of maintenance very considerably. Although on the Commissioners' deviation, we should have a double line, the working expenses will not be increased to any extent, in fact we shall save in maintenance.

1622. Do you know that it has been estimated by officers of the Commissioner's Department that supposing the No. 1 scheme were adopted there would be an annual saving of £3,488 in the mileage? I know that, if the Commissioner's proposal were adopted, the saving in working expenses would be £3,000 per annum more than the saving effected by the adoption of the No. 3 proposal.

1623. That was not quite Mr. Thow's evidence? Well, that is what I understand.

1624. Can you tell us, approximately, what the total annual saving to the Department will be by the adoption of your scheme? Roundly, £11,262.

1625. Would you be surprised to hear that the detailed figures given by Mr. Thow come to something like £1,400 less than that? I was not present when Mr. Thow gave his evidence, but I know that the sum I have named is the estimated saving.

1626. Are the rates now charged for the conveyance of passengers and goods on a mileage basis? I believe so.

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1627. Have you the particulars which go to make up the £11,000? Yes; but I believe they have already been given to you. The sum of £1,635 which is included in that £11,262 would be saved by not requiring a push-up engine in the tunnel. I think I am right in saying that a push-up engine will not be required in the tunnel, because, even to-day in the open, we do not use a push-up engine on the 1 in 50 Bell bank, where there are a number of snake-like reverse curves. If we do not require the services of a push-up engine on that piece of line, we shall not be likely to require them in a straight tunnel. There is, of course, a great resistance on curves, especially when they happen to be reverse curves.

1628. The present freight charges are on a mileage basis, and, according to the Commissioners' last report, the earnings per mile for all trains was 7s. 9½d. Now, over 6,000 trains pass over this line in a year, and if your scheme were carried out, each of these trains would run nearly 3 miles less; so that there would be a constant loss to the Department of between £3,500 and £7,000 per annum? I must take exception to that, though the question of charges does not come within my province. I anticipated from what I read in the newspapers, that I might be asked questions of this character, so I may be permitted to mention that in Great Britain it is customary, upon the construction of exceptional works to give special facilities for traffic, to authorise the imposition of increased rates to pay for the expenditure.

1629. But the railways there are private lines. We have nothing before us to show that it is the intention of the Commissioners to alter the existing mileage rates? This is an exceptional work, and should be treated in an exceptional way; and I am desirous of putting before the Committee a few instances of how similar cases have been treated in Great Britain. In the case of the Mersey railway, 5 miles additional were allowed by Act of Parliament—48 and 49 Victoria, cap. 198, section 45—for the Mersey tunnel; on the North British Railway, under their Forth Bridge Act of Parliament—41 Victoria, cap. 64, section 14—they were allowed 10 miles additional upon traffic from certain districts, and 15 miles additional for other traffic; on the Great Western Railway, they were allowed under the Act of Parliament—35 and 36 Victoria, cap. 53, section 45—12 miles for the Severn tunnel in lieu of 4 miles 29 chains, the actual length; and on the London and North Western Railway they were allowed by Act of Parliament—24 and 25 Victoria, cap. 128, section 61—9 miles for the Runcorn bridge, in place of 14 chains, the actual distance. There are many other instances which could be cited, amongst others the high-level bridge at Newcastle, where exceptional works have been compensated for by allowing exceptional mileage.

1630. All this goes to show that in your estimation a special charge should be made upon traffic passing through this tunnel? No; we propose to levy the rates that are in existence to-day.

1631. When you say that you will leave the charges as they are to-day, do you mean the charge for the whole distance or the charge per mile? I mean that the charges made to-day will be maintained after the tunnel is completed.

1632. The charge per mile, or the charge for the whole distance? Whatever it is now. The existing charges will not be altered.

1633. Suppose the distance between Sydney and Bathurst is 125 miles, your proposal is to reduce the distance by 3 miles. Am I to understand that you propose to retain the existing charge on the 125 miles, or the existing charge per mile for 122 miles? To make it clear let me put it this way: the charge for a truck of goods from Sydney to Bathurst will be the same after the tunnel is constructed as it is to-day.

1634. *Mr. Humphrey.*] That is to say, you will call 2 miles 5 miles? We shall maintain the old mileage.

1635. *Mr. Neild.*] That will be maintaining a fiction? I do not think that it will be a fiction. You have never had a case like this before in the Colony; it is an exceptional work, and we have plenty of precedents for dealing with it in the way proposed.

1636. You have talked this matter over with the Commissioners? I have had a little conversation with them upon the subject, and that I gather is their view. It is not a matter for me, however, to speak upon authoritatively.

1637. Although you make the distance between Sydney and Bathurst 3 miles less, you intend to charge upon the present mileage? Yes; because to save that 3 miles we shall have to incur an exceptionally heavy expenditure.

1638. What is the estimate? Our estimate is £213,000, which includes 5 per cent. for contingencies. I would not be surprised, however, if in the present state of the labour market the work were done for £200,000.

1639. Does that include the permanent way? Yes.

1640. Ballasting? An 80-lb. steel road upon full sized ironbark sleepers, ballasted complete.

1641. Do you propose to use the permanent way now being used upon the Zigzag? No; because as I think as you will see, the Zigzag must be kept open for traffic until the last moment.

1642. But you will remove the rails, sleepers, and ballast now in use, and will be able to take credit for them? I have not taken credit for them, because, although I do not know what the Commissioners' views are on the subject, I think that, in all probability, Clarence station will be worked as a siding, and therefore, it will be necessary to allow the 1 mile 30 chains or thereabout of existing line from Dargan's Creek to Clarence to remain.

1643. Do you think that that is likely? I cannot speak positively; but I should think it is extremely likely that will be done.

1644. Would a siding there be useful to the Department in working the line? The portion of the old line between Dargan's Creek and Clarence would be of no use to us, except to bring in local traffic. It is on a grade of 1 in 33, and would be useless to us for standing purposes.

1645. If it was retained, it would be useful only for local traffic? Yes, quite so.

1646. If your scheme were carried out, there would be a shorter length of permanent way to maintain; but I suppose, the line being double, would prevent any saving in maintenance? There would be a slight saving; but it is not worth mentioning, because we should have a greater length of double road to maintain than at present.

1647. Will you give the Committee a brief *resumé* of the advantages of your proposal? The advantages of the Commissioners' proposal are these. In round figures, it will save the country £11,000 a year on the working of the present traffic—that is not taking into account any extension of traffic. Then the Zigzag with its attendant disadvantages and possible dangers, will be cut out, as will also the 1 in 42 grade up to the Clarence tunnel against loads coming towards Sydney, and 1 in 33 from Dargan's Creek to the Clarence tunnel against loads going westward. There will also be a saving in the time of journey, both of goods and passenger trains.

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1648. What will the saving in time be? I think the traffic officers would be able to speak more positively than I can; but seeing that a distance of about 3 miles is saved, and the sec-sawing operation now carried on on the Zigzag would be avoided, there would probably be a saving of about fifteen minutes by down, and twelve and a half minutes by up passenger trains, and about fifty minutes by goods trains in both directions.

1649. What would be the difference in cost between concreting your tunnel and bricking it? I will supply that information to the Committee.

1650. Will you let us know the cost of lining the sides with concrete and providing a brick archway, as compared with the cost of lining with concrete throughout? I will send the information to the Secretary.

1651. *Mr. Trickett.*] Is it not the practice of engineers to adopt short tunnels where possible in preference to long ones? Other things being equal, it is, of course, desirable to have short tunnels rather than long ones; but it is by no means an unusual thing to have long tunnels. I should not call this a long tunnel, however; I should call it rather a short tunnel.

1652. It is long for this Colony? Yes, no doubt.

1653. Where tunnels are of any considerable length, is it not usual to have them on easy gradients, if possible? As a rule, where you have a tunnel you are crossing a ridge, and there must necessarily be a gradient, and it is often a steep one in order that the tunnel may be short. Tunnels are most frequently approached on a gradient, and it is no uncommon thing to run the gradient right through.

1654. There is no hard and fast rule or practice? Not at all. The tunnels through the Alps are generally on gradients varying from 1 in 40 downwards. The Otford tunnel has a gradient of 1 in 40, and most of our tunnels are upon gradients. It is rather an advantage in one way to have a tunnel on a gradient, because it facilitates drainage. We never build a tunnel quite level.

1655. We have had it in evidence that it is undesirable to have a steep gradient in a tunnel, because on the up journey the powers of the engine are so strained that there is an increased consumption of coal, and the consequent combustion tends to foul the atmosphere very much; is that the case? Yes; but you cannot carry out this work without having a fairly steep grade. I do not think that 1 in 50 is an objectionable grade.

1656. But is it not objectionable where the engine is straining itself, and there is a large consumption of coal? I do not think any inconvenience would be experienced with a double line tunnel.

1657. What do you think of the statement that a single-line tunnel is desirable, because a train passing through a single tunnel drives out the air at one end and sucks it in at the other, thus making a current and keeping up the ventilation? I think the person who made it should visit Otford tunnel.

1658. Do you agree with it? I do not. I think the statement perfectly ridiculous.

1659. I do not see that it is; the larger the tunnel the more smoke will stay in it, and it will become more difficult to dissipate the smoke? But there will be a larger quantity of fresh air to dilute the smoke.

1660. But a train going through a double tunnel would not have as much power to dispel the air as a train going through a single tunnel? All experience tells us that wherever a tunnel is of considerable length it should be built for a double line.

1661. That is your experience? That is my experience.

1662. Have ventilating shafts been a great success? No; the general experience is that they are of little or no value in improving the ventilation of tunnels.

1663. We have also had it in evidence that it is desirable to avoid long tunnels where short tunnels can be made, because of the time taken in constructing long tunnels, and the consequent greater outlay;—I suppose that is correct? Of course a long tunnel takes longer to construct than a short one takes; but seeing that we have done without this deviation for twenty-six years, I think I am right in saying that a delay of a few months would be of little moment if in the end a better result were obtained.

1664. *Chairman.*] Except that the money raised to carry out the work will be lying idle? Yes; but surely it is better to carry out a scheme that will give you the greatest return, because of the shorter mileage, rather than a work that will not return so much though it may take less time to execute.

1665. *Mr. Trickett.*] We have heard very great objections made to the Zigzag;—I suppose there is no danger so far as the line itself is concerned? No; it is a very fine piece of work indeed, and I am glad to have the opportunity of saying so. There has been a great deal of talk about its being an engineering blunder, and I feel that it is due to the late Engineer-in-Chief, Mr. John Whitton, to express my opinion on this subject. It is very easy to carry out any sort of work if you have the money; but if you are limited in funds, you cannot do exactly as you otherwise would, and, having regard to the expense attached to tunnelling in the early days, I have no hesitation in saying that Mr. Whitton did the right thing in this case. He is a much older man than I am, and has had much experience; but I cannot understand the nonsense that has been talked about a blunder having been made in the construction of the Zigzag. It is only fair for me, as a brother engineer, to take this opportunity of expressing my admiration of what I consider is a very fine piece of work.

1666. I suppose the Commissioners cause frequent examinations to be made of it? Every portion of the lines is thoroughly examined constantly.

1667. I am referring to this particular portion? Yes.

1668. As far as you are aware, it is a substantial structure? It is in thorough repair, and is a splendid piece of work.

1669. *Mr. McCourt.*] You said just now that £1,600 would be saved by dispensing with a push-up engine, but would not that engine be used for other work on other portions of the line? It would be constantly employed as at present in pushing trains up from Eskbank to the bottom points.

1670. The whole time of the engine would be so occupied? I believe I am right in saying that.

1671. If the deviation is made, will there be any saving in the maintenance of the permanent way? £200 or £300 a year, but I have not taken that into account in my estimate.

1672. *Mr. Wall.*] Is it not a fact that a tunnel on a grade of 1 in 50 is more easily ventilated than a tunnel on a grade of 1 in 100? The difference in elevation is an advantage. In the case of the St. Gothard tunnel, which is 9 miles 20 chains long, they never use the pipes which convey compressed air through it, except when an equilibrium is established between the atmosphere at the two ends of the tunnel. The tunnel we are considering is a mere culvert compared with the St. Gothard tunnel.

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1673. *Mr. Suttor.*] How long would it take to carry out the Commissioners' proposal? About two years.
1674. You could not make the time less? I have made some calculations, the result of which was that one year and nine months would be required to carry out the work; but all sorts of unforeseen things happen, and I do not think it would be safe to put it down at less than two years.
1675. *Mr. Dawson.*] Is it a fact, as reported, that your position here is due to a recommendation from Mr. Whitton? It is not a fact. I never had a recommendation from Mr. Whitton, and I never saw that gentleman, nor did I know him until I came to the Colony.
1676. *Mr. Ewing.*] You have already said that, so far as you know, you are prepared to adhere to the Commissioners' proposal? Yes.
1677. There may be some subsequent development of which we will hear, if you regard it as satisfactory? That is so.
1678. You say that there is no objection, so far as you know, on the part of the public to travelling through tunnels? You misunderstood me there. I said that the public generally preferred to ride in the open rather than to go through tunnels; they do not like to go underground.
1679. But once they are in the train they have no alternative? That is so, of course.
1680. With reference to Mr. Trickett's question about the air in the tunnel being expelled by the train, does it not appear that if the air were expelled by the train the vacuum created would be filled with the smoke? That is so, as I have already stated.
1681. Then there cannot be much in the statement he quoted? When a train goes into a tunnel, it creates a vacuum, and the steam and smoke rush in behind and take the place of the air that is expelled.
1682. It is not possible to have a following trail of air? No.
1683. Mr. Trickett also put some questions to you with regard to the effect of an engine working on a grade;—is it not perfectly clear that if a train going through a tunnel leaves smoke and steam behind it, the more smoke and steam it emits the more there will be left in the tunnel, and as an engine gives forth more of these products on a grade, there must be more smoke and steam left in a tunnel on a steep grade than on a level grade? Undoubtedly.
1684. Therefore, if you were considering the travelling public alone, it would be better to have the tunnel as level as could be, consistently with good drainage? Yes; the nearer approach to level, the better, other things being equal.
1685. Therefore, if the tunnel were 1 in 60, that would be better than 1 in 50? Yes, other things being equal; but if, to get a grade of 1 in 60, I had to make a line 2 miles longer, I should say I was buying gold too dearly.
1686. This is a commercial enterprise, and the public must put up with a little inconvenience if you cannot afford to make a better tunnel? Yes; but the inconvenience will be reduced to a minimum if the Commissioners' proposal is carried out. I am sure it would be a good thing for the public travelling between Bathurst and Sydney to suffer a little inconvenience—though I do not admit that there would be any—to avoid the risk which must necessarily be connected with the working of the Great Zigzag. The down trains, I may point out, will run through the tunnel without any expenditure of steam, and consequently they will have a very powerful effect in clearing the tunnel of impurities.
1687. With regard to the ventilation of tunnels, you tell us that railway engineers have not regarded it as a matter seriously worth considering? I did not say that at all. I said that tunnels far longer than this have been constructed, and that no inconvenience has been experienced in working them.
1688. What usually causes engineers to remedy abuses—public opinion, is it not;—abuses do not exist until public opinion finds them out? I do not at all agree with you there. We engineers have the character for being men of common sense, and we know well enough when abuses exist.
1689. But when you know that tunnels $1\frac{1}{2}$ miles long are objected to by the public because of the want of ventilation in them, you, as an engineer, endeavour to provide against bad ventilation? If you mean would I run the risk of spoiling my reputation by constructing a badly ventilated tunnel, I say, no. I would never think of proposing a tunnel such as the public would be likely to complain of.
1690. As an engineer, do you know any cheap scheme by which tunnels can be ventilated? No, I do not.
1691. You think no engineer does know of any? I do not say that. Of course, I know what has been done in the way of ventilating tunnels, but I think it is better to construct tunnels which do not require artificial ventilation.
1692. You know how they ventilate mines? Yes.
1693. Such modes of ventilation are not applicable here? It would be quite easy to provide a ventilating fan.
1694. Or a fire? Yes; but you would not want it in a tunnel like this.
1695. How many trains go over the Zigzag in a day? From the figures before me, it appears that about fifteen trains go over the line each day, not including specials.
1696. Would that be a heavy traffic for a single line? Not particularly heavy; but there are times when there are a great number of specials.
1697. Would twice as many be heavy? Yes; especially where you have to work it over a Zigzag.
1698. But without a Zigzag? Yes; with grades and curves such as we have on the mountain line.
1699. So that a single line would not deal with the traffic if it became twice as great as it is now? I know that there is great difficulty in working the trains over the mountains at certain seasons of the year, and it would be foolish, in undertaking this work, not to provide a double line.
1700. Are you aware that the pollution of the Mont Cenis tunnel at one time almost became an international question? I know that the ventilation was rather bad.
1701. The ventilation was so shocking that two nations were going to deal with it as an international question? Yes; but it is possible to-day for trains to run through that tunnel without artificial ventilation being constantly required, and it is nearly five times as long as our proposed tunnel. It has also a gradient which rises towards the centre of the tunnel, and has no ventilating shaft of any kind.
1702. *Mr. Collins.*] Did you say that you concurred in the design of the Lapstone tunnel? I do not think I mentioned it.
1703. Had you to carry out that work? Yes; but the plans were prepared by the Construction Department.
1704. How is it that it only provides for a single line? The Commissioners considered the question, but they thought that it would be of very little use to have a double line there, when they could not take

- take it as far as Penrith. At that time they could not see their way to ask the country to give them the large sum of money required for widening the line to Penrith.
1705. Would that have cost a great deal more money? Yes; a great deal more. A double line costs almost twice as much as a single line.
1706. The Lapstone tunnel cost £40,000? Roundly, £45,000. We have not, however, quite settled the matter yet. There are a few items in dispute.
1707. There may be a possibility of the line being widened between Bathurst and Penrith as you suggested? I do not think I suggested that. I said that in constructing the proposed tunnel it would be better to make a double line, because two lines might be required in the future.
1708. It would be much costlier to enlarge the Lapstone tunnel than it would have been to provide for a double line first? Yes; but it would have been of no use to provide for such a short length of double line, when it could not be continued to Penrith.
1709. *Mr. Humphery.*] You are confident that the Commissioners' proposal would be entirely satisfactory? I have no doubt about it.
1710. What advantage do you hope to derive from the surveys now proceeding with a view to discovering a better route on the northern side of the existing line? It was suggested that a route could be found which, besides giving the advantages provided by the Commissioners' line, would cut out the 1 in 42 grade between the bottom points and Eskbank, and the 1 in 50 grade known as Bell bank.
1711. But that would mean a very much longer line? It would be longer than the Commissioners' deviation, but not longer than the existing line.
1712. By the survey now in progress, it would it would be necessary to cut out about 9 miles of the existing line? From $8\frac{1}{2}$ to 9 miles.
1713. What would you substitute for that? A similar length. There are two deviations, one about as long as the existing line, and the other 1 mile or $1\frac{1}{4}$ miles shorter. These deviations are to cut the 1 in 42 grade from Eskbank to the bottom points, and the 1 in 50 from Dargan's Creek to Bell.
1714. Thereby saving the services of a push-up engine altogether? Yes; and enabling heavier loads to be taken, because the ruling grade for loads coming east would then be 1 in 60.
1715. Suppose you are able to discover a practical route which will accomplish what you hope to achieve, will there be any annual saving? Yes; but the scheme is *in embryo* at the present time. There would, of course, be an annual saving over the present working, owing to the flatter grades.
1716. But a grade of 1 in 60 is to be obtained on Mr. Deane's line, with a shorter mileage? Yes; but his scheme commences at the top of the 1 in 42 grade, which would be retained, and ends at the foot of the 1 in 50, so that there would be no material advantage.
1717. Assuming that you obtain a practicable route on a reduced grade on the northern side of the line, would the advantages be greater than those given by the No. 1 proposal, that is in point of economical working and saving of time? I am afraid the scheme is not sufficiently advanced for me to be able to express a definite opinion; but you can see, yourself, that if we could substitute a 1 in 60 grade from Eskbank, that would really be the ruling grade over the mountains for loads coming towards Sydney.
1718. And you would prefer that, if you could get it, to the tunnel scheme? Yes; if we had not to pay too much for it.
1719. You would have the advantage of a continuous 1 in 60 grade, as against a varying grade of 1 in 42, and 1 in 50? Yes; that is so. The route was said to have such advantages that we thought it right to ask you to hold your hand until we looked to it.
1720. Then you think that the inquiry of the Committee is a little premature? It is not my business to say that. I think you are right to inquire into the schemes before you.
1721. But do you think that further inquiry should be deferred until you have information in regard to this suggested route? I think it would be desirable for you to have the results of our investigations upon the alternative route.
1722. Is there really any greater danger in passing traffic over the Lithgow Zigzag with the precautions you now adopt than in working any other part of the line between Penrith and Eskbank? It is a very objectionable thing to have to propel a passenger train, and it is unavoidable there.
1723. I want you to answer the question, Yes or No, and to give me your reasons? Yes, I think it would be desirable to cut out the great Zigzag, because I think that more danger attends the working of it than attends the working of the other portion of the line where the engine is in a leading position.
1724. *Mr. O'Sullivan.*] Have you given your attention to the proposal to take the line from Mount Victoria to Lithgow or Bowenfels? I have not. I was with the Commissioners about two years ago when a deputation on the subject met them at Mount Victoria. They then said that the matter concerned the Works Department, and referred the deputation to the Minister. I have not given any attention to the scheme.
1725. You have shown the advantages of your scheme over the existing line, but you have made no comparison between it and Mr. Deane's scheme? I am not in a position to speak of Mr. Deane's proposal, except in a general way. I believe that it saves about half a mile in distance over the existing route, and has a grade of 1 in 60, instead of 1 in 50 in the Commissioners' proposal; but I have pointed out that that would be of little value, inasmuch as there is a grade of 1 in 50 a little further on. It would be absurd, however, for me to express an opinion upon Mr. Deane's scheme until I have had an opportunity of examining the plans and seeing the ground.
1726. According to the figures placed before us, Mr. Deane's scheme will cost £186,000, while the Commissioners' will cost £225,000, a difference of £39,000? £225,000 was an outside figure given to the Minister. The estimate of the cost of the work is £213,000, which includes 5 per cent. for contingencies; and that, I am sure, is enough.
1727. There would be a large saving if we carried out Mr. Deane's proposal? I am not in a position to speak about his proposal. Four per cent. interest on £30,000 would be £1,200 a year, but what is that compared with the additional distance which every train would have to run, and the additional length of line which would have to be maintained for all time.
1728. Would the cost of maintaining the extra 2 miles of Mr. Deane's line be more than £1,200 a year? I think figures have been placed before the Committee showing that there would be a saving of £3,000 a year more on the working of the Commissioners' scheme over the working of Mr. Deane's scheme.
1729. In making that up, did you allow for the £1,200 interest which you just mentioned? No; that is merely the saving in the working expenses, not taking into account the difference in cost.

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1730. But you do not take the difference in cost into account? Of course that must be done; but I do not know what Mr. Deane's scheme will cost. I cannot tell what his estimate includes, while I know what is contemplated by my own.
1731. But assuming that his is right? Then there would be a saving of £2,000 a year more in carrying out the Commissioners' scheme.
1732. You claim that the saving in working expenses is more than you lose in interest? Undoubtedly.
1733. You claim that by carrying out the Commissioners' scheme you will save £11,262 a year;—have you taken the interest into consideration in making that statement? No; merely the cost of working.
1734. Should you not also take into account the interest on the £167,000 that will lie dead if your scheme is carried out? I do not think that we should.
1735. *Mr. Davies.*] Is the existing line between Penrith and Bowenfels sufficient for the present traffic? At certain seasons of the year it is very difficult to get the traffic over the road.
1736. It is a single road to Eskbank? From Penrith to the bottom points it is a single road; but from there, through Eskbank to Bowenfels, it is a double road.
1737. I presume that you have explored the survey for the Commissioners' scheme? I have been over the route.
1738. And you have made a complete examination of all the detailed plans and working plans which are ready for carrying the work into operation? The whole thing is not ready to be carried into operation yet. Plans and sections, however, have been made, and they could be used for contract purposes.
1739. You could call for tenders within a very short space of time? The quantities have not yet been taken out accurately; they are only approximate. There would be the specification conditions, and so on, to prepare before the contract could be let.
1740. How long would it require to take out the quantities? It would take a month or two before you could let the contract.
1741. That is taking into account the time occupied in advertising? Yes.
1742. You, as the Constructing Engineer for railways, advised the Commissioners that the No. 1 proposal was the best route that could be adopted? It is the shortest, and I still think that it is the best.
1743. You advised them to that effect? Yes.
1744. If the Commissioners were to have authorised the carrying out of the work, you would immediately have called for tenders? We were not ready to call for tenders immediately—some length of time would have had to elapse before we could be in a position to do so.
1745. What length of time? Perhaps a month.
1746. The work would have been in full swing within a few weeks had the Commissioners decided to carry it out? Yes.
1747. The Commissioners agreed with you that your scheme was the best? They believed it to be the best.
1748. Do they still hold that opinion? With this proviso, that having heard of an alternative route, they think it is desirable that that route should be looked into.
1749. Having heard of another route, they conceive it best to wait a little while? Naturally. This route seemed feasible, and they thought it should be looked at.
1750. When did that occur to the Commissioners? Something like six weeks ago.
1751. After your scheme and Mr. Deane's had been submitted to the Committee, or before that? I think it was before our scheme was submitted to the Committee. I am under the impression that the matter had not actually come before the Committee when we thought of the alternative scheme.
1752. *Chairman.*] The date of the Commissioners' letter to the Minister for Public Works asking that the inquiry should be deferred was the 2nd instant? We were at work on the alternative route before that.
1753. *Mr. Davies.*] You stated that there are two alternative routes which you may submit? The exact route has not yet been fixed. There are two deviations, either of which it might be desirable to adopt, but we cannot tell which.
1754. You admit that if this work had not been referred by Parliament to the Committee, you would have been ready to have called for tenders in a few weeks? Yes.
1755. You still hold the opinion that your proposal is the best? I have no hesitation in saying that it is, so far as I know at present.
1756. Your proposed line is 2 miles 53 chains in length, and of that 1 mile 52 chains is tunnel, so that the greater part of the line is underground? Yes, the tunnel 3 chains in length.
1757. The grade in the tunnel is 1 in 42? One in 50.
1758. But the short tunnel is 1 in 42? Yes, the tunnel is 3 chains in length.
1759. The long tunnel has a grade of 1 in 50? That is so.
1760. Then you get on to a down grade of 1 in 75? There is a bit of level, and then a down grade of 1 in 75, which will be of great service in working the line.
1761. The grade you wish to cut out is 1 in 33? One in 33 against loads going west, and 1 in 42 against loads coming east.
1762. What great advantage will accrue to the traffic if your deviation is carried out? It is proposed to continue the present 1 in 42 grade from Eskbank to the bottom points through the small tunnel, and up to the end of the long tunnel, where it will at once change to 1 in 50, and the push-up engine, which will be used as at present from Eskbank to the bottom points, will drop off.
1763. You will require a push-up engine? Certainly; there will be over a mile of 1 in 42 from Eskbank to the bottom points.
1764. I thought you said that you could dispense with a push-up engine? Yes; through the long tunnel.
1765. But you would want it for the short tunnel? Yes. The figures that I have just given—£1,635—have reference to the tunnel, and not to the 1½ mile from Eskbank to the bottom points.
1766. The saving of £1,600 only refers to the large tunnel? Yes; that is the amount that would be saved by dispensing with the push-up engine there.
1767. You would always require a push-up engine for the 1 in 42 grade? Yes; whether the Commissioners or Mr. Deane's scheme be adopted.
1768. What really would be the saving effected in rolling stock, rails, and permanent way, if your proposal were adopted? I can only give you the figures that have been put before me. There will be a considerable saving in wear and tear from having a straight road instead of a curved one, though it is impossible to state exactly what it would amount to. It has been estimated at between £200 and £300 a year over the existing line, as I previously stated.

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1769. But you can tell the life of an 80-lb. steel rail on a grade such as you propose to have here? The life of a steel rail varies all over the Colony. It depends upon whether the road is straight or curved, the nature of the ballast, the speed of the trains, the climate, temperature, and a variety of other conditions.
1770. But taking the proposed road, and comparing it with a road having a grade of 1 in 30? I cannot tell you exactly what the saving in maintenance would be. We are not taking it into account, though it will come to between £200 and £300 a year I dare say.
1771. No very large saving will be effected? No; because of the greater length of a double line, which makes up for the shorter distance.
1772. Will the scheme you are now exploring start from the same point as the No. 1 scheme? No; it will start below the 1 in 42 grade near Eskbank, and rejoin the existing line at the top of the 1 in 50 grade on the western side of Bell's station.
1773. You are not in a position to give an estimate of the probable cost? I cannot give you that at present.
1774. Nor to state what the grade will be? It is suggested that a grade of 1 in 60 can be obtained.
1775. But the line has not been sufficiently surveyed for you to be able to give a definite opinion? That is so.
1776. Both the deviations you are exploring start pretty well from the same point? Yes; and end at the same point. The one hugs the existing line a little more than the other, and will consequently be shorter.
1777. Having been summoned to give evidence here, is it not your duty to make yourself acquainted with Mr. Deane's proposal? I think I am right in saying that the Commissioners asked that the plans relating to Mr. Deane's proposal should be submitted to them, in order that they might have an opportunity of judging of its merits.
1778. When was that? I think it was a week or two ago. I pointed out to the Commissioners the impossibility of my expressing an opinion on any route when I had neither the plans, nor sections, nor any of the necessary data before me. I only know in a general way the length and ruling grade of Mr. Deane's proposal.
1779. But as both you and Mr. Deane serve the same master—the public—was it not your duty to make yourself acquainted with his scheme? I acted under the direction of my employers—the Commissioners—and I represented to them the desirability of seeing the plans and sections of Mr. Deane's proposal, and I believe I am right in saying that they applied to the Works Department for the plans and sections, but in any case it was not for me to do so.
1780. I presume you expected to be asked your opinion of Mr. Deane's proposal? I thought it not unlikely that I should be asked the question. It is a very natural one for the Committee to ask.
1781. But you have been exploring the country through which Mr. Deane's line will go, and your proposed line practically leaves the existing line at the same point as Mr. Deane's? The two lines go in opposite directions, and a walk over the ground in country like that would be of very little service unless I had the plans and sections.
1782. You did not apply to Mr. Deane yourself for them? No; it was not my business to apply for them, except through the Commissioners. As a matter of fact, Mr. Deane showed me a section of his proposal on tracing-cloth; but beyond that I have not seen either plans or sections. It would not have been professional etiquette to have pressed Mr. Deane to show me his plans and sections.
1783. Has Mr. Deane shown any indisposition to give you information? Not at all. I think at the time I happened to see the sections of the proposal he said that the plan was in the field, or that it was being worked up, or something like that. Mr. Deane has never shown the slightest disposition to withhold information, and I am happy to say that we work amicably together.
1784. When you were applied to by the Works Department to send in all your working plans and surveys, I presume you sent them in? They were sent to the Commissioners' office, and I know the Commissioners sent them on.
1785. Do you think it would have been a breach of professional etiquette to have yourself applied for similar information? I think the Commissioners applied for the information. I wish it to be clearly understood that so far as Mr. Deane and myself are concerned we work amicably together, and I have always found him most ready to give me any information I may ask for.
1786. Are you sure that application was made by the Commissioners? I am under the impression that it was.
1787. Do you know anything about the scheme brought under the notice of the Committee by Mr. Rock? I have read of it in the newspapers; but beyond that I know nothing about it.
1788. Do you know anything of the country through which he goes? Only by travelling along the existing line.
1789. *Mr. Hoskins.*] Do you consider that curves constitute a difficulty in the working of a railway? I think they are to be avoided; a straight line is better than a curved one.
1790. An official yesterday said that on an up-grade curves were of no consequence? Curves are to be avoided wherever possible. There is, of course, a great resistance to be overcome where there are sharp curves.
1791. Lateral resistance? No; a direct resistance against the pull of the engine.
1792. In reply to a question by Mr. Neild, you justified the imposition of an extra charge per mile over the proposed deviation, following the precedent of what has been done in England? I do not think I justified it, because it is out of my province to express an opinion on the subject. I simply pointed out that where works of an exceptional character had been undertaken by railway companies in Great Britain, it was usual to allow them to charge additional mileage to cover the cost.
1793. Do you know that here the charge is made *pro rata*, per mile, for the different classes of passengers and goods? I believe that it is.
1794. Seeing that the railways belong to the country, do you think the public would stand any special charges? I am not in a position to answer that question, because it is out of my province. I am here to give you any engineering information in my power that you may desire.
1795. Are there any ventilating shafts in the Lapstone tunnel? No.
1796. I understood you to say that you attached very little importance to them? They are of very little importance for ventilating purposes.
1797. Are you not aware that there are ventilating shafts in connection with the London underground railways? They are openings rather than ventilating shafts.
1798. Is there not one in Queen Victoria-street, and another on the Thames Embankment? There are one or two chimneys; but, speaking generally, the roof is left off to let the smoke out. They are not shafts properly so called.

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1799. Have you not heard serious complaints from engine-drivers and firemen in regard to the suffocating state of the Lapstone tunnel? No; though I have heard other people complain of its stuffiness, and in travelling through it is natural to put up the window to prevent the steam and smoke coming into the carriages. Complaints from the drivers would not be likely to come before me.

1800. You do not think that it is objectionable to have steep grades in a tunnel? The flatter the grade the better, but I do not think it is objectionable to have a grade of 1 in 50 in a tunnel like that which the Commissioners propose in the case under consideration.

1801. *Chairman.*] It has been stated in a return that a saving of £8,000 a year is effected in the working of the Lapstone tunnel. Do you know what saving was estimated before the work was begun? I do not. The preliminary investigations leading up to the construction of that tunnel did not pass through my hands, the plans and sections being prepared by the Works Department.

1802. You have told us, in regard to the proposal to take the line *via* Hartley Vale, that the Commissioners considered it outside their province, and, therefore, gave no definite reply to a deputation which waited upon them. We have it in evidence here, however, that the Commissioners stated that they had already made inquiries on the subject, and that the work would probably prove far more costly than was anticipated by the deputation. Did the Commissioners make their inquiries from you? We had a surveyor on the ground at the time looking into the proposed deviation for cutting out the Great Zigzag and—

1803. This deputation waited on the Commissioners on the 20th August, 1892? We had, as I have just said, a surveyor then in the field preparing a section of Mr. Burge's line. He was asked to look at the map, and to say, from his knowledge of the country and the levels, whether the line spoken of by the deputation was practicable; but no one was sent over the ground by us. I think I asked, "What are they proposing?" The reply to which was, "They propose to take a line across from Mount Victoria to Eskbank; but it would require a tunnel 7 miles in length."

1804. That is how the Commissioners got their information? Yes, so far as my memory serves me, and I am nearly sure that I am right.

1805. Did you say that the Works Department suggested to you that a line could be taken *via* Farmer's Creek? No.

1806. Where did the suggestion come from? From one of our own officers.

1807. After the plans of the proposed deviation had been passed over to the Construction Branch? Just so.

1808. You spoke just now of professional etiquette. Do you not think that it was rather a straining of professional etiquette, when, after handing over certain work to another department, you send out surveyors to poach on their inamor? The Commissioners have always held the opinion that these deviations should be carried out by them, and that this proposal, or any modification of it, was in the position of a deviation. It is scarcely for me to censure the action of my Commissioners. I merely act upon their instructions.

1809. I understand that you were instructed in the matter? Undoubtedly. This alternative route was brought under my notice, and I thereupon saw the Commissioners, who instructed me to have it looked into.

1810. I think you said it would be better to suspend this inquiry, to enable you to further test the deviation to which you have referred? I think that it would be in the interests of the country.

1811. And, if the weather permits, you will probably be ready in ten days' time to give us definite information as to the desirability of carrying it out? As to whether it is practicable. I could not furnish you with detailed plans and working drawings in that time; but I could tell you if the route is practicable, or whether it would be a waste of your time to consider it further.

1812. *Mr. Humphery.*] If the No. 1 scheme were adopted, would it be possible to improve the grade of 1 in 42 from Eskbank to the bottom points? I have looked into it, and I think that it would be a very costly matter to do so, because the alteration would have to commence at the mouth of the proposed tunnel, and the line would have to be lifted from that part to Eskbank station, and thus interfere with the station-yard. Altogether it would be so costly as to be almost impracticable.

1813. Then the adoption of the No. 1 proposal would mean the retention of that grade for all time? It would.

WEDNESDAY, 21 MARCH, 1894.

Present:—

JACOB GARRARD, Esq. (CHAIRMAN).

The Hon. WILLIAM HENRY SUTTON.

The Hon. JAMES HOSKINS.

The Hon. FREDERICK THOMAS HUMPHERY.

The Hon. JOHN DAVIES, C.M.G.

The Hon. WILLIAM JOSEPH TRICKETT.

THOMAS THOMSON EWING, Esq.

WILLIAM CHANDOS WALL, Esq.

WILLIAM MCCOURT, Esq.

JOHN CASH NEILD, Esq.

EDWARD WILLIAM O'SULLIVAN, Esq.

CHARLES COLLINS, Esq.

HENRY DAWSON, Esq.

The Committee further considered the proposed Deviation to avoid the Lithgow Zigzag.

Edward Fisher Pittman, Esq., Government Geologist, Department of Mines, sworn, and examined:—

E. F. Pittman,
Esq.

21 Mar., 1894.

1814. *Chairman.*] How long have you occupied your present position? About two and a half years.

1815. But you have been connected with the Department of Mines for a long while? Yes, for about fifteen years.

1816. I presume you know the Lithgow Valley and the country about there well? Yes.

1817. Can you tell us, from your knowledge of the geological features of that district, whether there is a larger area of mineral-bearing land in the Hartley and Kanimbla Valleys than there is in the Lithgow Valley. The Committee are desirous of knowing whether the Lithgow Valley seams which are served by the existing line are limited in extent, or in some degree worked out, as compared with the unworked seams on the Hartley side, which would be served by Mr. Rock's proposed deviation? Really, it is a very open question. No doubt a great deal of work has been done in the collieries at Lithgow; but all the country to the north or the north-east is coal-bearing.

1818. As a matter of fact, are not a great number of the collieries working into the hills which intervene between the Lithgow Valley and the Kanimbla Valley? Yes.

1819.

1819. Are there not only two collieries which are working in a northerly direction? Yes, the Hermitage, and probably the Zigzag Colliery. E. F. Pittman,
Esq.
1820. I suppose the mineral deposits now being worked on the southern side of the Lithgow Valley go right through into the Kanimbla Valley? I think so, undoubtedly. The general dip of the coal measures there is north-east. 21 Mar., 1894.
1821. Then those collieries working on the northern side of the Lithgow Valley have to go down on their face, while those on the other side of the valley have a rising grade, and are therefore more easily drained and worked? Yes, that is so.
1822. I presume that that is one reason why they are working more on the southern side than on the northern side? It may be; though it is possible to work to the rise by putting the shaft as far towards the dip as possible.
1823. How far do the coal measures extend north-east of the Lithgow Valley? Practically as far as Maitland. That is the westerly extremity of the Newcastle, Sydney, Illawarra, and Western basin.
1824. But not the seams they are working at Lithgow? Yes; they are part of the Newcastle measures.
1825. Is there not a difference in the quality of the coal? Yes, undoubtedly. It is more of a steam coal, though it contains a greater percentage of ash. The latest opinion is that these are the upper coal measures or the continuation of the Newcastle beds.
1826. We are to understand that the coal measures on the northern side of the Lithgow Valley may extend to Maitland? Perhaps it would be more correct to say that they extend to Newcastle.
1827. How far south do they extend in the direction of the Kanimbla Valley? In a true southern direction they do not go very far, because you come on to the paleozoic rocks, on the Cox River, at Hartley, for instance.
1828. The mineral deposits, as far as the Kanimbla Valley is concerned, are bounded by the hills—they do not go into the valley? Yes; that is correct.
1829. We may take it that the coal measures which are being worked at Lithgow, and which you believe to be part of the Newcastle coal measures, crop out on the northern side of the Kanimbla Valley? Yes.
1830. Are there any other coal measures or mineral deposits in the valley below? No; the coal rocks undoubtedly thin out as you go towards the west, and the consequence is that there are no workable seams there, except those which I have already said are the equivalent of the upper coal measures. The same remark applies to those in the Lithgow Valley.
1831. With reference to the kerosene shale deposits worked at Katoomba, they are being worked across the valley, but in higher ground? Yes; they are under the escarpment.
1832. How do you account for the Berrima measures;—do they belong to a different series? No; they belong to the same series of beds. The Newcastle, or upper-coal measures, the Lithgow coal measures, the Berrima coal measures, and the Bulli coal measures are all the same. They are supposed to be one continuous seam.
1833. Under varying local conditions? Quite so.
1834. So far as the great Kanimbla Valley is concerned, there are no kerosene mineral deposits there? We believe not. It is possible that there may be small patches, but we do not think so.
1835. Presuming that the traffic life of any railway in that district were dependent upon the mineral production, a railway down the Lithgow Valley would have a longer life by reason of the greater volume of trade than a railway down into the Kanimbla Valley? I think you are making more out of what I said than I intended. No doubt there is a general dip to the north-east; but the question whether there is more mineral wealth on the northern side than on the southern side depends upon how much of the coal measures are present. There is only one set of seams workable on the south and on the north. It is the same seam in both instances; but the question how much there is could best be answered if I had a geological map here with the line marked on it.
1836. But you have told us that the coal measures on the northern side of the Lithgow Valley virtually extend to Newcastle, which is roughly 150 miles away? Yes.
1837. And that the same measures on the southern side merely go through the ridge that intervenes between the Lithgow Valley and Kanimbla Valley, a distance, I presume, of only 2 or 3 miles? Yes.
1838. So that on your own showing there would be a larger area of coal-bearing country to the north than there would be to the south of the Lithgow Valley? Yes.
1839. *Mr. Ewing.*] Is the best shale deposit in the Kanimbla Valley? The best shale deposit undoubtedly has been there. The Hartley shale is the best we have ever found, and at the present time we know of none equal to it.
1840. Is there any on the line between Mount Victoria and Eskbank? No; I know of no shale immediately on the line; but all the country to the north is more or less shale-bearing. If you take a line from Clarence Siding up to Glen Alice, to the north-east of Capertee, you will find shale land in patches all the way.
1841. And you say that the existing line, so far as your knowledge enables you to speak, probably goes through a larger area of shale land than Mr. Rock's proposed line? Taking the question just as it stands, I would say undoubtedly, because it is a longer line.
1842. Would it be any advantage to the mineral deposits there if the line were taken as Mr. Rock proposes to take it? A very slight advantage. It might facilitate the working of the Hartley Shale Company.
1843. You regard the advantage as immaterial? To a great extent immaterial.
1844. *Mr. O'Sullivan.*] Are there any gold or silver deposits in Hartley Vale, or in that direction? No, I know of none about there.
1845. Have any finds of gold been reported recently anywhere within a fair radius of Hartley Vale or Big Hartley? No, I do not know of any recent finds. There was a rush for silver to a place between there and the Jenolan Caves some two years ago, but nothing came of it.
1846. Is it a country likely to carry either gold or silver? Yes; it is south of the coal measures. I examined a piece of land for gold on Mr. Wolsey's run, which is only 8 miles from Mount Victoria. You can get right down to the paleozoic rocks, below the coal measures, within 7 or 8 miles of Mount Victoria. Mr. Wolsey was prospecting for gold and silver on some reefs there, but it came to nothing.
1847. Do you think that the neighbourhood is ever likely to become a large mineral field for gold and silver? I can only say that from the formation it is quite possible that it may be auriferous and argentiferous. It is in the paleozoic rocks, where all our big gold and silver deposits have been found.

- E. F. Pittman, Esq.
21 Mar., 1894.
1848. I understand that the best shale deposits in New South Wales are at Hartley Vale? The best shale we have had came from there and from Joadja Creek. Speaking exactly, perhaps the best shale came from Hartley Vale.
1849. I presume that the shale is pretty widely scattered; its occurrence is not confined to the spot where the company is working? The occurrence of the shale is in patches—a few hundred acres in extent. You may trace the same formation for miles and miles, and find it barren; but, perhaps, 10 miles or 50 miles away, you may come across another patch.
1850. Are there not many indications of shale in that valley besides the patch which is being worked by the Hartley Vale Company? None that have ever been proved to be much good.
1851. *Mr. Wall.*] Is it a fact that the only accessible route to the Kanimbla Valley is from Mount Victoria or Katoomba, points on the Sydney side of the contemplated deviation? Yes; but it would be quite possible to make an elevated tramway.
1852. Would not the easiest point of access from the Megalong Range, Isolated Mountain, and the other places there containing shale, be on the eastern side of the deviation? Yes.
1853. Therefore, the proposed deviation would not affect the development of such seams? Possibly not.
1854. Do you think it is likely, in view of the recent developments in connection with coal near the metropolis, that fresh mines will be opened up in the Blue Mountains for many years to come? I do not think it is at all probable. I do not think they would be paying concerns.
1855. In the event of the development of trade in the western district, is it not likely that the coal required there will be taken from seams in the vicinity of Lithgow? I think so.
1856. Taking into consideration the fact that these coal measures extend 80 or 90 miles to the west in the direction of Tombong and past Wallerawang? I do not know the first locality, but I know that they extend beyond Wallerawang.
1857. Do you know Cox's coal-mine on the other side of Rylstone, at Tombong? I do not know the mine, but I know that the measures run out there.
1858. It is likely that the mines further west, because the carriage will be less, will furnish any coal which is required out there? I think it is very probable that what we call the Lithgow coal, will be used out west rather than in the metropolis; but I do not think there is a great extent of workable coal out beyond Lithgow and Marrangaroo.
1859. The existing line fairly commands all the mines at present opened, with the exception of the Hartley Vale shale mine? Yes; all the mines to the west of the Zigzag Colliery, which is the most easterly of the lot.
1860. *Mr. Davies.*] Do you know the land owned by the Hartley Vale Oil and Shale Company? Yes; they hold mineral conditional purchases.
1861. Do you know the extent of their holding? I have been on their property, but I do not know the extent of it.
1862. Have you been in the mine? Yes.
1863. Have you seen their workings? Yes.
1864. About 40 acres is what they have worked and are working? I could not tell you the area with any degree of certainty.
1865. Do you know if the shale still exists there in payable quantities? I believe they are working it now where it is found to have been faulted, and has been thrown down on the floor of the valley. That is really all they are depending upon now. I do not fancy that they have a great deal more shale on their property besides that.
1866. You do not think there is much more shale in their 4,000 acres than what they are working at, which is the faulted portion? I do not think so.
1867. Therefore a railway taken through Hartley Vale would not be required to serve the trade of that company? I think they have undoubtedly seen their best days.
1868. *Mr. Neild.*] Focusing the whole matter, do you think a line constructed from Mount Victoria through Hartley Vale, to say, Bowenfels, would be the means of opening up any very large mineral traffic? No; I do not think there is any great possibility of that.
1869. Do you know the tunnel immediately to the south of the Clarence tunnel;—is it mineral country? Yes; I believe so.
1870. Coal bearing, or shale bearing, or both? Some shale was got there, I think, but I do not recollect what the quality was. I do not fancy that it was very good.
1871. Are the coal measures there important? Just about as important as they are over the whole of the area to the north-east, but not more so.
1872. Would the deposits there be similar to the deposits at Eskbank? Yes; I imagine that they would be.
1873. Would the coal supposed to underlie that land give a value to it which it would not possess in the absence of coal? Yes; I think we may take that for granted.
1874. You would take into consideration the presence of coal in valuing the land? Yes.
1875. About what is the thickness of the seams in that locality? The workable seam of coal at the Vale Colliery is about 450 feet below the Zigzag platform, which, I think, is 3,270 feet above sea level.
1876. You do not remember the thickness of the seam? There is about 5 feet 6 inches of workable coal in the Lithgow Valley, that is to say, they work 5 feet 6 inches out of the lowest seam.
1877. The same seam would underlie the land in the vicinity of the Clarence tunnel? I should expect so.
1878. I suppose you have included the Mount Hay coal-fields in the evidence you have given about the district? Yes.
1879. *Mr. Humphery.*] Did you examine the mine which Bates and party discovered in the Jamieson Valley, between Lawson and Wentworth—shale and coal? The question was raised should the trustees of the common allow a lease of the land to enable the coal to be worked.
1880. Did you examine the coal measures there? Yes.
1881. Did you report upon them? No; I reported merely upon the likelihood of the reserve being injured by the working of the coal.
1882. Assuming that those coal measures possessed any commercial value, would that portion of the valley be served by a line from Mount Victoria to Bowenfels, *via* Hartley? I do not think that such a line would make any difference to them.
1883. They would not be served at all by it? I do not think so.

TUESDAY, 27 MARCH, 1894.

Present:—

JACOB GARRARD, Esq. (CHAIRMAN).

The Hon. WILLIAM HENRY SUTTOR.	WILLIAM CHANDOS WALL, Esq.
The Hon. JAMES HOSKINS.	WILLIAM McCOURT, Esq.
The Hon. FREDERICK THOMAS HUMPHERY.	JOHN CASH NEILD, Esq.
The Hon. JOHN DAVIES, C.M.G.	EDWARD WILLIAM O'SULLIVAN, Esq.
The Hon. WILLIAM JOSEPH TRICKETT.	CHARLES COLLINS, Esq.
THOMAS THOMSON EWING, Esq.	HENRY DAWSON, Esq.

The Committee further considered the proposed Deviation to avoid the Lithgow Zigzag.

George William Townsend, Esq., sworn, and examined:—

1884. *Chairman.*] You are a civil engineer? Yes.
1885. You were engaged for some time in connection with the Construction Branch of the New South Wales railways? Yes.
1886. You are now engaged in the Water Conservation Branch. Yes; with regard to artesian boring.
1887. *Mr. Wall.*] Some time ago you surveyed a line up the Colo Valley? Yes.
1888. And submitted a report on that line to the Department? A complete survey and estimate and report.
1889. At that time, were you connected with the Department? I was employed by the Railway Department.
1890. Did you report in favour of the construction of that line? Decidedly; very strongly.
1891. Speaking with regard to the Great Western line, do you think it is at all likely that the Colo Valley line will ever be constructed? I think it is merely a matter of time. I feel confident that eventually the Colo Valley line must be constructed.
1892. Could you explain to the Committee any reasons why that line should be constructed? I think I can give very good reasons. The principal reason why I thought that an alternative line should be constructed was because of the grades on the Great Western line. These may have been subsequently improved by the deviations and the tunnels; but at the time I made my estimate a heavy engine would only take from Penrith to Mount Victoria 13 loaded trucks, with a limiting grade of 1 in 30. From Mount Victoria to Lithgow the same engine would only take 13 loaded trucks with a limiting grade of 1 in 33; and from Lithgow to Bathurst the same engine—heavy goods—would only take 17 trucks, with a limiting grade of 1 in 33; and from Bathurst to Orange, 17 trucks, with a limiting grade of 1 in 40; and from Orange to Wellington, 17 trucks, with a limiting grade of 1 in 40; and from Wellington to Dubbo—comparatively flat country—17 trucks, with a limiting grade of 1 in 40; and from Dubbo to Narramine, 28 trucks, with a limiting grade of 1 in 50; and from Narramine to Bourke, 60 trucks, with a limiting grade of 1 in 80. This was information obtained from the Locomotive Department at the time I was drawing up this report. Considering that the limiting grade on the Colo Valley survey was shown by section to be 1 in 100, with all grades reduced on curves of 20 chains radius, so as to equalise the haulage between the straights and the curves, and seeing that from Narramine to Bourke an engine could take 60 trucks, and comparing that with the foregoing information, I think that is a strong reason why an alternative line should be constructed.
1893. With regard to the cost of that line, did you furnish some report in regard to the working expenses of the line? I did.
1894. And also in regard to the working expenses on the mountain line? I have got that somewhere, but I do not know just now where it is. I think that Mr. Goodchap worked that out more than I did, if I remember rightly.
1895. Do you remember what the saving was that you estimated? I think Mr. Goodchap showed that we could save the whole cost of the line in something like twenty years. I think I estimated it at forty years. I am confident it could be saved in forty years, after making up interest on the outlay.
1896. In that report, did you make allowance for the interest that would have to be paid on the line over the Blue Mountains—that portion of the line now constructed? No; only on such portions of the existing line as we should use.
1897. What is your estimate of the total cost of that line? £2,695,000.
1898. Was that the total cost of the construction of that line from its deviation at Penrith to Narramine where it connected again? No; I believe that it was £3,500,000 through to Dubbo, but I cannot find it here—I have not seen these papers for some time.*
1899. Some comment was made in regard to your report by Mr. Whitton, who was then Engineer-in-Chief—I think you will find it on page 13 of that report? There are a good many comments made by Mr. Whitton.
1900. That is with regard to the correctness of your estimates? Yes. As to that, I place my estimate for a single line at £2,695,000. Mr. Whitton, in an attempt to swell the estimate, makes his estimate for a double line £6,148,000—a little more than double the amount.
1901. Now, with regard to the construction of this line, have you any doubt whatever in your mind that this line could be constructed for £2,695,000? I am not only sure that it could be constructed for that, but I am prepared to say now, from a subsequent examination of the country contiguous to that previously explored by me, that a very large saving could be effected—at least, £500,000—and the distance could be shortened, I believe, about 10 miles. That is the total distance from Sydney. Instead of going from Emu Plains along the banks of the Hawkesbury for many miles, and then tunnelling through above Wheeny to Colo, we would start from Parramatta with a short tunnel through the Castle Hill ridge, and then along the Dural ridge to the junction of the Colo River with the Hawkesbury, then an easy line up the Colo, giving much simpler and less construction difficulties than my original line would have done. I am confident it would save, at least, £500,000, and 10 miles in distance.
1902. When you submitted your report, were the quantities and the cost of the work revised by any officer of the Department? I had two men in the office helping me with it. 1903.

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* NOTE (on revision).—See Q. and A., 1918.

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1903. But were they disputed by the then Engineer-in-Chief? I believe not. All that the Engineer-in-Chief said is in these papers, and I am not aware that he ever disputed the quantities—
1904. Well, how was this difference in cost made out? Mr. Whitton estimated for a double line, and I estimated for a single line.
1905. Did you make an estimate at all for a double line? No. In my first exploration I stated that certain portions of the line should be double. Subsequently, as is explained here, I withdrew that and estimated for a single line, excepting the bridges which were all estimated for double line, after I had made a complete survey.
1906. *Chairman.*] That refers more particularly to the tunnel-work? Yes. I increased the tunnel-work very largely. I think I put in between 12 and 13 miles of extra tunnelling in order to avoid landslips.
1907. You increased your tunnelling work, but reduced the tunnels from double to single? Yes.
1908. *Mr. Wall.*] Is this Committee to assume that Mr. Whitton concurred in your estimate of the cost of a single line, but increased the cost to nearly £6,000,000? The Committee may assume what they like. It is here in the papers. Mr. Whitton insisted on giving his estimate for a double line, although the then Minister for Works, Mr. John Sutherland, referred the papers back to him, stating that my estimate was for a single line.
1909. The Great Western Line was then, of course, a single line? It was altogether a single line, and mostly is still.
1910. You say you think it is only a matter of time when that line will be constructed? I am convinced of it.
1911. Do you think it will be advisable to lay out any large sums of money in reducing the grades on the Blue Mountain line, in view of the fact that it is probable that that line will be constructed at some future time? Well, my opinion is that no amount of money laid out on the Blue Mountain line would ever make it a line capable of doing great duty, on account of the heavy grades. The common opinion is that the Zigzags are the cause of the obstruction of the Western line, but the fact of the matter is that the enormous heavy grades in between the Zigzags are the real obstruction. In all my railway experience I never knew a train stuck up on the Zigzag, but on the heavy curves and grades between the Zigzags the engines have been stuck up.
1912. *Chairman.*] That is between the Lapstone and the Lithgow Zigzags? Yes, between the Zigzags.
1913. *Mr. Wall.*] You are prepared to stake your professional reputation that that line could be constructed as a single line for £2,695,000? Yes.*
1914. With a grade not exceeding what? One in 100.
1915. First of all your starting-point was from Emu Plains? Yes.
1916. Starting from Emu Plains, and connecting at Narramine, the line could be constructed for £2,695,000? Yes.
1917. Since you furnished that report, on reconsideration you have adopted a different route, namely, from Parramatta;—for how much less could that line be constructed? £500,000 less.
1918. From Parramatta to Narramine a single line could be constructed for £2,695,000? Yes.†
1919. What would be the length of that line? I cannot remember exactly what the length would be. It is 278 miles by the present line to Dubbo, and that line would save 40 or 42 miles; therefore by that line the distance from Sydney to Dubbo would be about 236 miles, instead of 278.
1920. It would effect a saving of some 40 miles between Dubbo and Parramatta? Yes.
1921. You have been engaged in connection with other railway surveys? Yes.
1922. And you have always found them, if carried out, correspond with your estimate? Fairly. I never had any fault found by Mr. Whitton with any of my previous work—in fact, I can show you a memo. from him in which he mentions myself and some others specially for an increase of pay lest he should lose the services of some of the best surveyors in the Department.
1923. I understand that it was with the concurrence of Mr. Whitton that you were instructed to carry out that survey? I cannot say that.
1924. You received your instructions from the Minister? I received my instructions from the Minister, through Mr. Goodchap, to report to Mr. Whitton—to carry out that survey under Mr. Whitton.
1925. You are not in a position to say whether Mr. Whitton approved of that survey being initiated? No, I am not.
1926. *Chairman.*] Is it true that after you had left the Railway Construction Branch, and had joined the Existing Lines Branch, you obtained leave of absence from the Commissioner for the purpose of exploring the Colo Valley with a view of constructing a different line from that going over the mountains? It is better, perhaps, that I should reply to that question by reading from these papers. It is put here very concisely, as that very point was raised by Mr. Whitton. I wrote:—
- The facts of this matter are as follows:—In 1880 my services with Mr. Whitton were dispensed with, as the work on which I was engaged was finished. In the early part of 1882 I was re-appointed by Mr. Whitton, at the same salary as I had formerly received.
1927. Is it true that after leaving the Railway Construction Branch, and whilst in the Existing Lines Branch, you obtained leave of absence from the Commissioner to explore what is known as the Colo Valley scheme? Two years afterwards I did.
1928. Two years after joining the Existing Lines Branch you obtained leave of absence? Yes, I did.
1929. Did you make a report to the Commissioner for Railways, upon which the Minister subsequently ordered a fuller survey? I did.
1930. That survey would be carried out by you under the engineer for construction, Mr. John Whitton? It was first of all intended that a survey should be carried out under the Existing Lines Department. Subsequently it was ordered that it should be carried out under Mr. Whitton.
1931. *Mr. Wall.*] On submitting your report to Mr. Whitton, Mr. Whitton did not, you say, find fault with your estimates for a single line? At first he did.
1932. In what respect did he differ from you in regard to that estimate? No particular respect, but generally. Subsequently he found fault with the whole thing, and put in his estimate for a double line.
1933. Did he at any time agree that your estimate for a single line was a correct one? He never agreed that anything was correct—that I was, or anything else.
1934. From what I can understand, your estimate for a single line was not concurred in by Mr. Whitton? Well,

* NOTE (on revision):—See Q. and A., 1918.

† NOTE (on revision):—This should be £3,500,000, then the saving by change of route of £500,000 will leave £3,000,000 as total cost of line from Parramatta to Narramine.

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Well, tacitly it was, for he refused to give his estimate for a single line to compare with mine, and insisted on giving his estimate for a double line to compare with my estimate for a single line, as these papers show.

1935. Can you point out to the Committee any other lines you have been engaged upon where you have made estimates? No; because, as a rule, the railway surveyors do not make their own estimates—the estimates are made in the office.

1936. Have you made any estimates while engaged in the department here in connection with any deviations, works, or surveys in connection with the railway lines? I made the estimate for the duplication between Parramatta and Penrith.

1937. Was that estimate borne out by the results? Yes; the work was carried out from it.

1938. I understand from a reply you gave to a question a little while ago that Mr. Goodchap at that time approved of the construction of the Colo Valley line? Yes.

1939. Did Mr. Goodchap make any estimate as to what would be gained by the department by that line? I believe he did. I cannot find it, looking hurriedly through these papers, but I believe he estimated that the cost of the line would be saved in a certain number of years. I estimated that it would be saved in forty years, and I believe that Mr. Goodchap estimated that the cost would be saved in less time than that.

1940. You are quite convinced as to the correctness of your estimate now? Perfectly.

1941. Have you made any surveys or examinations in connection with the present Western line? No.

1942. You are not in a position to inform the Committee to what extent the grades you refer to on that line could be reduced, and what would be the cost of reducing them? No.

1943. You furnished the Committee with the number of trucks hauled? That is information obtained from the Locomotive Department at the time of making the estimate.

1944. You have made no personal inspection of the line, and are not in a position to inform the Committee what would be the cost of a reduction of the grades, so as to make this a trafficable line? No, it is simply impossible. On examination of a section anybody could see that at once.

1945. You think that no expenditure on the Western line would make it as good a line as the Colo Valley line would be if constructed? Not a chance of it.

1946. *Mr. Collins.*] If the line which you advocate were constructed what communication would towns such as Orange and Bathurst have with it? None whatever. They would have to deal with the present line, which would be the main line between Sydney and Orange.

1947. You would have to keep the existing line still going? Yes. The proposed new line would not have the slightest effect on any of the high-level towns, such as Bathurst and Orange. On account of the shortening of the distance from Dubbo to Sydney by the new line it would pay to run a train from Wellington to Dubbo, and to use the new line instead of bringing it up the present line to Orange, so Wellington could come under the new system.

1948. You would have to have the same line from Bathurst to Parramatta, as now exists? Exactly.

1949. Then the present line would not have to be taken up at all? No; that line would not be interfered with in any way.

1950. You would have to have two lines of railway? Yes.

1951. Would the Colo Valley line open up any good country? A great deal of coal and shale, and on the table-lands a great deal of good orchard land. In fact, according to my new proposal to go by Dural, it would open up all the Dural country for which a railway has been proposed recently.

1952. Is it Crown lands? I think it is mostly alienated now. A great number of acres have been taken up within the last seven years, I know.

1953. The betterment principle would apply to that line, and the people on the line would have to pay for it? Certainly.

1954. *Mr. Ewing.*] Do you know the railway system of the Colony fairly well? Pretty well.

1955. Do you believe that the Western line will continue to be the main artery of traffic to the west? I am sure it will not. I am sure the Colo Valley line will have to be made. There is no shadow of doubt about that, although I may not live to see it. I am not very young now.

1956. You believe that whilst there is a level road to be obtained the whole traffic of the west will not continue to be worked over an elevation of 3,670 feet? Never.

1957. *Mr. Humphery.*] Have you had any experience of railway construction anywhere outside New South Wales? Yes; in India.

1958. Can you express any opinion as to the advantage or disadvantage of the proposed tunnel in No. 1 scheme as compared with No. 3 scheme of the proposed deviation from Clarence tunnel? I know but little about it. I have been over Bell's line, but I know too little about the particulars of the case to say anything. I have never seen a survey nor a section of any of it, and I should not like to venture to give an opinion about it at all.

1959. *Mr. O'Sullivan.*] I see that Mr. Whitton, in his second reply, dated 1st March, 1888, says that your proposal would cost £6,148,393? Yes.

1960. And he makes the difference up by going into all the details? Yes.

1961. He states here, in a letter in reply to you, that your first estimate was for double line, tunnels, bridges, and viaducts? My first estimate was made, as I have explained here, on a mere exploration of the country proposed for a double line, and with only a comparatively small amount of tunnelling. Subsequently, when I had made the survey, and found that I should have to introduce a long length of gallery tunnelling to avoid landslips, I thought it better to reduce it to a single line, and I made my estimate for a single line, and Mr. Whitton insisted subsequently on making an estimate for a double line, to compare with my estimate for a single line.

1962. There is an enormous difference between your estimate and his? Yes; because he estimated for a double line and I for a single line.

1963. He makes the cost nearly three times as much as you make it? No; very little more than double.

1964. Would a double line cost twice as much as a single line? It depends a great deal on the works. The cost of a double line tunnel is very nearly twice the cost of a single line tunnel. For cuttings and banks a single line should cost about three-fifths, or from that to two-thirds of the cost of a double line.

1965. Would your line serve Bathurst and Orange? No.

1966. Dubbo? Yes.

1967. What route would you take in going down from the mountains? We do not get on to the mountains at all.

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1968. What route after leaving the Colo Valley? Through Mudgee to Dubbo, or to Coonamble, as has been since mooted. In case of going to Coonamble, we would junction with the Werris Creek line, and would connect with Dubbo.

1969. I suppose you would leave the old line to serve Bathurst and Orange? Yes; the old line would serve the high-level towns—Bathurst, Orange, and intervening towns, and also the Blayney-Cootamundra line. 1970. So your line of railway would really be to serve the Mudgee district and the far west? The Mudgee district, and west and north-west.

1971. *Mr. Davies.*] What is the total length of the suggested alternative line you speak of? It is about 40 miles shorter than the present line to get to Dubbo.

1972. Did Mr. Palmer, then of the Construction Branch, go through and examine in detail your first estimate? Not the whole of it. He went through a portion of it with me.

1973. Did he not report against you? Not entirely.

1974. What do you mean by not entirely? Partly in favour of and partly against me.

1975. Will you tell me what part of your project he reported in favour of? I should have to look through the papers; I cannot remember now. It is about eight years since.

1976. At what did Mr. Palmer estimate the cost of your 14 miles of tunnelling? I do not think that he ever made an estimate at all of the tunnels; I never heard of it.

1977. Did he not make an estimate that your 14 miles of tunnelling would cost £80 a yard, or a total of £2,000,000? I do not remember.

1978. You do not remember his reporting to the Engineer-in-Chief that the 14 miles of tunnelling itself would cost £2,000,000? He may have, but it is not in the official papers so far as I can recollect.

1979. You do not reckon that reporting against your recommendation? I say he reported partly in favour of it and partly against it. He was up on the line with me, and we spent a night or two there, and had a long talk about it. I was not put in possession of all the official papers, and he may have reported something to Mr. Whitton which I may never have seen.

1980. You do not seem to be familiar with the reports made in those days; you have not, I suppose, refreshed your memory as to what took place? With the work I am thoroughly familiar, but with the reports I am not.

1981. Mr. Palmer occupied a very important position? He was Engineer for Railway Surveys.

1982. Can you remember that the whole of the papers, surveys, and quantities were referred to him by the Engineer-in-Chief? Before the whole was finished, I think that Mr. Palmer was away in England, and Mr. Deane was dealing with the matter.

1983. I do not see that Mr. Deane had anything to do with it? I had to see Mr. Deane about it. I do not remember any distinct report of Mr. Palmer's about it, but if you like I will look through the papers to see.

1984. *Mr. Hoskins.*] You have spoken of the line you surveyed as an alternative line; what do you mean as an alternative line? Other than the one that was first spoken of.

1985. What was first spoken of? The Western line to carry all the traffic for the west and north-west. That is another line to carry the same traffic without going over the mountains.

1986. Then your alternative line was a line which you suggested to do away with the present Great Western Railway altogether? Not at all. It was only with regard to the traffic beyond Orange. The whole of the Western line would still be required as much as ever, and its carrying capacities would be taxed to its utmost to deal with the traffic between Orange and Sydney.

1987. How much of the existing line do you propose to do away with? Not to do away with any of it.

1988. *Mr. Trickett.*] In making this alternative line then to connect at Narramine, in estimating the earning properties of that line, how do you think that would affect the present line from Sydney to Orange—would that be a paying line by itself? Yes; the heavy grades of the Western line are such that the less carried on it the better it will pay, for all the goods carried on it at ordinary rates are carried at a loss.

1989. That is only to a certain extent? You may put on special rates through high-level country on account of the heavy grades, but when you extend beyond those grades hundreds of miles into flat country, people reasonably ask, "We have all this flat country, why should we be taxed on our light-grade line to pay for the extra haulage on heavy-grade lines?"

1990. But the Western line is a paying line, is it not? Yes; but we are very heavily taxed. I am told that people are carrying goods in drays and waggons, and competing with the Western line.

1991. Is that not more attributable to the good season, because they are able to get feed for their horses cheaply? There is no doubt about that.

1992. You said a little while ago that the difference between your first and subsequent estimate in the cost of your proposed line was caused by reason of a double line being proposed instead of a single line? Yes.

1993. Well, at page 17 in this report, Mr. Sutherland said:—

Mr. Townsend explains that his rough estimate has been exceeded chiefly because he has found it necessary to provide for 21 miles of single tunnel instead of 6½ miles of double tunnel, as originally contemplated by him.

That is putting it in a reverse position, is it not? No; 6½ miles of double tunnel would not come to anything like 21 miles of single tunnel.

1994. But are not the two statements quite different? Yes; but there are other things to be considered.

1995. According to Mr. Sutherland's summary, he makes it appear that the difference in the two prices is by reason of your having to construct 21 miles of tunnelling instead of 6½, whereas you now tell us that the difference in the two prices was because one line was to be a double line and the other a single line? No; I only said what I did to explain the discrepancy between Mr. Whitton's estimate and my estimate. Mr. Whitton's estimate is for a double line and my estimate for a single line. I am not referring in that to my previous report at all. In the first report I stated distinctly to Mr. F. Wright, who was then Minister for Works, that I objected to give an estimate at all on a mere exploration, but I was urged to give an approximation to an estimate, and I did so under protest, and the cost I hurriedly estimated as I did. Then Mr. Whitton wished subsequently to bind me to an estimate for a double line, although I distinctly stated I proposed a single line.

1996. As an engineer, what are your views with regard to a steep gradient in a tunnel of nearly 2 miles in length? I think that on all main trunk lines steep gradients should be avoided at almost any cost.

1997. I am speaking of grades in a tunnel? It would not make any difference in a tunnel. It is worse in a tunnel, perhaps.

1998. Especially on a mountain line;—is not the line in a tunnel apt to get greasy? Yes; it is worse in a tunnel; but it is so bad to have heavy grades at all that they should be avoided almost at any cost.

1999.

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1999. Then you do not think it is desirable to have a tunnel nearly $2\frac{1}{2}$ miles in length, with a grade of 1 in 50? Well, 1 in 50 on that line is so much better than many parts of the line that it might be regarded as a light grade, for you have 1 in 30, and miles of 1 in 33 and 1 in 40. You can only reckon good grades on lines comparatively.

2000. Have you had any experience in constructing railway tunnels? No; I have never been in charge of one.

2001. Or as to their working—as to their getting foul? Yes; I have.

2002. With regard to fouling, is it better to have a large tunnel or a small tunnel—a single-line or a double-line tunnel—which is likely to get the less foul from smoke? I should think about equally. In a double-line tunnel you would have the same sectional area in proportion to the traffic as you would have in the others. I do not think there would be much difference between them.

2003. Well, how do you account for the tunnel at Lapstone Hill getting so foul? I have only been through it as a passenger, but some of the old drivers say it is almost suffocating to go through it. I believe that part of the reason is that it is on an S curve. That will always be a bad tunnel, because ventilation will be so bad in it.

2004. *Mr. Neild.*] Your estimate for your proposed line was made somewhere about six or eight years ago, was it not? Six years ago.

2005. At that time was not the cost of engineering works much greater than it is now? Much the same, I believe.

2006. Has there been no reduction in the cost of tunnel making? I think there is some. No reduction on what I then proposed, but a reduction on what was then carried out. The cost of works such as those carried out was greater then than now, but it is about now what I proposed then, and for which the work could have been done then.

2007. So any alteration that may have taken place as to the cost of constructing lines, would not affect your estimate? Rather favourably than otherwise.

John Whitton, Esq., sworn, and examined:—

2008. *Chairman.*] You were Engineer-in-Chief for Railways in New South Wales for many years? Yes. J. Whitton,
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2009. *Mr. Suttor.*] When did you commence operations on the railway line from Sydney to Bathurst? About 1860, I think. I was here first in 1856, and at that time there was a proposition to make tramways on the public roads, 4,000 miles, at a cost of £4,000 per mile, and one of those lines was to go from Emu Plains to Bathurst. The proposition was made by Sir Wm. Denison. Some years after that I reported on those proposed tramways, and I think about 1860 we commenced a survey. 27 Mar., 1894.

2010. Who were the surveyors employed under you in marking out the route over the mountains? Mr. Barton had charge of the surveys.

2011. Were there any other surveyors employed? We had a number of other surveyors—many in the Colony now. They were the sappers, and as a rule, I believe the best surveyors I ever had. There was Kennedy, Melrose, Francis, and several others. I do not remember all their names just now.

2012. Can you give us any information in reference to this proposed deviation of the Zigzag? I should be very sorry to say that any deviation is necessary. My own impression is that we could have nothing better than the present Zigzag which, in my opinion, could be used for the next twenty years.

2013. We have before us a proposal to avoid the Zigzag. Will you look at the map? I have looked at all the proposals, but I do not think that a single deviation proposed is as good as the original line, taking the coal into consideration. One I saw was 2 miles of tunnel at a cost of about £250,000. The only improvement on the Zigzag, as far as I can see, is that the incline of the tunnel is 1 in 50, whilst on the Zigzag it is 1 in 42, and I think the Zigzag will work quite as well with 1 in 40 as the line in the tunnel with 1 in 50. There is no doubt that there will be some facility in working. I mean the officials then will have less to do, but beyond that I cannot see that there is the least difficulty in working the Zigzag, which has been in use twenty-four years. I have never heard of any serious accident upon it, and if any accident has happened it has been more from the carelessness of men in working in it than from the Zigzag itself, and it is certainly not a dangerous line.

2014. Your opinion is that there is no necessity whatever to make an alteration? Yes; I think there is no necessity whatever to make an alteration. We were years in making surveys. They were made in many directions. When we got to Dargan's Creek the question simply was whether there should be a zigzag or a tunnel, for there was no possible chance of getting a direct line down the mountains. The termination of Mount Clarence was so precipitous that we could not take a line down, therefore I thought it desirable to have a zigzag instead of a tunnel. The proposal was to have a tunnel about 2 miles in length, and there was no contractor in the Colony who would have undertaken such a work, and the cost would have been very large if it could have been made at all. Another reason was that I could see no means whatever of getting the bricks up the mountains to line the tunnel with. About 10,000,000 bricks would have been required, and if made at Lithgow or anywhere else, I could not see how, by any means whatever, they could have been conveyed to the tunnel. Therefore, there was nothing left for it but the Zigzag, and as that cost about £170,000 in round numbers, and the tunnel, if it could have been made at all, would have cost at least £400,000, I do not see how there can be the slightest objection to my having taken the cheapest line instead of taking the tunnel. Besides, I could see no limit whatever to the time the tunnel might take to make. It might have been four years in hand, and we should have kept the remainder of the line blocked up because the tunnel was not finished. There was no reason why the tunnel should be attempted, and, of course, I did not attempt it.

2015. *Chairman.*] I suppose that an expenditure of £400,000 for a work of that kind at that time would have staggered any Minister for Works? Yes; I do not think I dare have mentioned it to anybody. The Zigzag cost £170,000, and if it be done away with the debt will still remain, and the interest will still have to be paid. The proposal now—a deviation by tunnel—is to cost £250,000, which, at 4 per cent., will be £10,000 a year interest. The total interest would thus be £16,800 a year, with an additional £250,000 expenditure, which, of course, would have to be paid off at some time or other; and I do not see that the tunnel, if made, would make the line much easier to work than it is at present. There certainly is the question of time, but I do not think that can be of such very serious importance. I saw the

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- the other day an account of a goods train being an hour late in arriving at Mudgee or Bathurst. Supposing goods trains are an hour late, that does not make much difference. It is no reason why £250,000 should be thrown away in making what I look upon as a useless work. Instead of your having the Zigzag, costing £170,000, you would have a total cost of £420,000. If you destroy the line you cannot get rid of the payment that has been made, and added to that would be £250,000, which would make £420,000 instead of £170,000, the present cost. I was certainly startled when I saw in the papers that it was proposed to dispense with the Zigzag, but I was horrified when I saw that we were to do that in order to find work for the unemployed.
2016. *Mr. Hoskins.*] You require a special sort of labour for that? You require skilled men to work in a tunnel—not pick and shovel men.
2017. *Mr. Suttor.*] Your opinion is that there is no necessity to alter the Zigzag at all? That is my distinct impression. There might be a slight alteration of the wings, and the Zigzag could be worked for the next twenty years. That would reduce the labour of the officials, who are, perhaps, a little hard worked, but beyond that there is no occasion whatever to touch the Zigzag. I do not think that they profess to say that there would be anything beyond the saving of time and a little extra trouble in the working.
2018. *Mr. Ewing.*] You made a remark with regard to some alteration of the wings of the Zigzag;—what do you mean? I mean the top wing of the Zigzag might perhaps be lengthened; but I spoke to Mr. Deane about it just now, and he said he did not think it could, but if it cannot be lengthened it is still an easy matter to work the Zigzag. With a long train two engines come out from Lithgow, and there is no reason why, at the bottom points, they should not divide the train, and let the first engine push the first part up the middle line of the Zigzag past the upper points, and then straight on towards Clarence tunnel. The other engine can haul the other part of the train to the top of the wing, and back it up to the first portion of the train. I do not see any difficulty whatever in working the Zigzag. Spare engines are kept for the purpose.
2019. You think that there would be two engines even if you had the tunnel? Yes; most decidedly. I do not think the tunnel would be so easy to work with an incline of 1 in 50 as the Zigzag would be with an incline of 1 in 42. There must be a certain amount of condensation going on in a tunnel, the rails must become slippery, and I do not see how one engine could take a full load up an incline of that sort. But even assuming that the tunnel would be perfectly dry, the only saving by the tunnel would be in the time of running.
2020. That deals with the present, from your point of view? Yes.
2021. You have pronounced a definite opinion that it should be left alone? Yes.
2022. Now, look to the future. If this continues to be the main Western line all the traffic to the west for all time would have to go over an elevation of between 3,000 and 4,000 feet. Have you any knowledge at all as to any other route by which you could cheaply approach the west by better grades? You can only approach the west by better grades by No. 3 line, recommended by Mr. Deane, in the event of another line being required at all.
2023. I am not speaking of this deviation in detail, but of the whole Western line. Is there any way to approach the west except by that line? No.
2024. What of the Colo Valley? I should not like to express an opinion of the Colo Valley. I think there would be something like 24 miles of tunnelling on that line. There is no means of making use of any portion of that railway if it were constructed. I am afraid to say how much it would cost.
2025. You might say too little? I might say too little.
2026. You say it opens up no country? Yes.
2027. And is prohibitively expensive? Yes.
2028. You say that, after going into the surveys and plans and everything connected with it? I do not think that there was anything in the plans to justify me in any action, except in condemning the whole thing as perfectly useless and absurd.
2029. I speak in a limited sense, of course, but you think that there will be no time when a line of easier grades to the west will be found—we shall always have to go over that great mountain, 3,000 and more feet high? Yes; unless you make tunnels. It was suggested at one time to make the whole line a tunnel from Penrith to Mount Victoria, but I never could see the force of it.
2030. You think that even by choosing another locality it is not possible to get a better approach? I am sure it is not.
2031. You believe that for all time the Colony will have to make use of that mountain range? I do.
2032. If you are going to do that for all time it cannot do much injury to cut out the grades? You cannot cut them all out. There are inclines at the present time of 1 in 33 to Mount Victoria, and you cannot cut them out. There are certain grades you must have from Emu Plains to Blackheath.
2033. You believe they will never be cut out? No.
2034. That no lengthening of the road will do it? No. You may go to enormous expenditure in trying to cut them out, but I do not see why you should trouble much about inclines of 1 in 33, when between Emu Plains and Mount Victoria you have the worst incline on the whole of the line. If you work an incline of 1 in 30 I do not see why you should trouble about altering 1 in 33.
2035. You believe that for all time the country will have to have a railway with bad grades as its main artery of traffic to the west? They are comparatively bad grades no doubt, but I do not see any chance of improving them. I do not think you can, at any expense, without making an enormous length of tunnels.
2036. You see it would be quite out of question to spend much on the present line unless it is to be a permanent line, and if it be a permanent line you say that no work to improve it is justifiable, even from a future point of view? It might be, but of course there must be a limit to that. If you go on improving the line you may spend too much in doing so. Grades of 1 in 33 are not bad. There are far heavier grades than that being worked in different places, and I do not see why they should not be worked here.
2037. You prefer to use more engine-power to spending more money in reducing the grades? Yes; more engine-power, or reducing the weight of the trains.
2038. You state distinctly that to consider the Colo Valley at all as a line to the west eventually is out of the question? Perfectly out of the question.
2039. *Mr. Collins.*] Are you aware that £40,000 has been spent on the Lapstone Zigzag? I have heard that.
- 2040.

2040. And there is a saving of £8,000 a year by spending that? I do not know that I have heard that. J. Whitton, Esq.
2041. We have it from the Works Department that that is the case; and if there were a saving of £1,000 a year after paying interest on the capital of £250,000, would you recommend the deviation should take place? No; certainly not, because you saddle yourself with £250,000 on the Loan Votes, and you cannot get rid of that. If you could show the deviations proposed would not only pay the interest on the money expended in making them, but also pay sufficient to pay off the whole of the capital in a certain time, then there might be some reason for adopting the proposal; but the proposal now, to make a tunnel with inclines of 1 in 50, which might lessen to a small extent the expenses, would not be a justifiable expenditure. 27 Mar., 1894.
2042. You think it would be justifiable if it paid off the capital and interest? It would not be justifiable in this case at all, because I do not think you improve the position in any way.
2043. *Mr. Humphery.*] Have you carefully studied the Railway Commissioners' proposal, and No. 3 alternative route? I do not know that I have carefully studied them. I have seen the Commissioners' proposal of the tunnel and No. 3, Mr. Deane's alternative route, and this, in my opinion will be a far better line than the tunnel.
2044. Would you kindly state your reasons for preferring the No. 3 to No. 1? Well, instead of one long tunnel and an incline of 1 in 50, you have a number of tunnels with perfect ventilation and a better incline, 1 in 60, for working them.
2045. No. 3 line would be double the length of No. 1 line? I daresay it would.
2046. Do you think that the better gradients and short tunnels would neutralise the greater length of the line? I think so; I think it would be a much better line, in fact I do not think the long tunnel would be any advantage at all, and if a deviation had to be made I should say that the No. 3 proposed by Mr. Deane, would be a better line than the tunnel.
2047. You had, I think, about sixteen years or more experience of the Zigzag during the time you occupied the position of Engineer-in-Chief? I was chief engineer the whole time, and it was constructed under my superintendence.
2048. During what period was it worked? From 1869, and I did not leave the Colony till 1889.
2049. So you had twenty years experience of the working of the Lithgow Zigzag? Yes.
2050. Can you say what, during that time, was the cost of accidents which may be considered due entirely to the peculiar nature of that work? I do not know of one. The only accident that I remember occurring during the time I was here was very shortly after the line was opened. An engine was running tender foremost. We had not the Westinghouse brakes in use then. It was assumed, and afterwards proved, that the engine-driver had had more drink than was good for him, and when he got to the top points of the Zigzag he was not able to pull up the train, and it ran into a cutting at the end. The fireman was on the engine, and in trying to sand the wheels of the tender he put his foot outside on the end of the tender, and when the train ran into the rocks at the end of the wing his foot was cut off. That is the only accident I remember there.
2051. During the whole twenty years? Yes. There may have been other accidents, but they never came under my notice if there were any.
2052. In your opinion is there any greater danger to the public in passing over the Lithgow Zigzag than over any other portion of the line with steep gradients between Emu Plains and Bowenfels? No; I do not think so. I do not think there is the slightest danger in working the Zigzag. It makes the officials, perhaps, more careful in working that portion than any other portion of the line, but I do not see that there is the slightest danger in working the Zigzag as it present exists.
2053. You do not think the mere saving of time would be a sufficient advantage to the country to justify an expenditure so large as would be necessary to make the proposed deviation? I do not.
2054. With regard to the estimated saving upon the line, you mentioned that it would be necessary to provide a sinking fund for the lost money spent on the portion of the line to be cut out in the event of the deviation being made, but the Commissioners put it before the Committee in this way. They say there will be a saving of £10,000 a year in the working expenses. The estimated cost of the deviation is £225,000 which, at 4 per cent., would be £9,000, and this, deducted from the £10,000, would leave £1,000 profit, while the earnings on the railway would continue; so the actual profit would be £1,000. Do you take the same view of it? I do not take that view of it at all, for you have £16,800 interest to be taken off.
2055. But the earnings already provide a certain amount of interest: the earnings will not be diminished? But supposing the earnings were £10,000, and you paid £16,800 for interest, I do not see where the saving comes in.
2056. I think you do not take quite the view of it that has been placed before the Committee—it is not a matter of increased earnings, but of lessening of expense to the extent of £10,000 per annum, and after providing 4 per cent. on the cost of the deviation there would be £1,000 left? I think not.
2057. Well, that is the way it is placed before us? I say the tunnel will cost £250,000. In addition to that you must add £170,000 for the line you destroy, and therefore the total cost of the line would be £420,000, and the interest would be £16,800.
2058. But the interest on the portion of line proposed to be destroyed will be paid by the earnings as at present;—the earnings of the line continue, but they propose an additional expenditure of £225,000, and that additional expenditure will lead to a saving of £10,000? I do not quite follow that. If you assume—which I do not quite see myself—that they would save £10,000 by taking out the present Zigzag you cannot get rid of the fact that you would have to pay £6,800 interest for the line you destroy, and £10,000 interest for the line you create. That makes £16,800 altogether, which you would have to pay for interest alone, besides saddling the Colony with a debt of £250,000.
2059. *Chairman.*] You get £8,000 from traffic and £10,000 from savings on working expenses? That would be all it would be. You would still have the cost of the tunnel, £250,000.
2060. *Mr. Wall.*] Are we to assume that if the Commissioners spend £10,000 and earn £11,000 they are losing money? If they make £1,000 of course they make £1,000.
2061. *Mr. Humphery.*] This is Mr. Barling's evidence on page 1:—

They estimated the whole cost of the work at about £225,000, which at 4 per cent. would mean an annual cost of £9,000; but they estimated that in addition to the great facility to the working, and the avoidance of the continual risk which now takes place, the expenses would be reduced by about £10,000 per annum, so that as a commercial investment the money would be well spent.

That

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- That is a statement of an estimate, and estimates can be made somewhat elastic if you try to make them fit your own case. I do not say they have done that, but I say that can be done. The fact is that you spend £420,000, and in my opinion you do not get a much better line than you have now with the expenditure of £170,000, therefore I do not think it would be worth while to throw away £250,000.
2062. Do you differ from the witnesses who have stated that there will be a saving of £10,000 on the expenses? I have not gone into the question of savings at all.
2063. Well, assuming that there will be a saving of £10,000 on the working expenses, and that £9,000 would have to be provided for interest on the cost of constructing the deviation, there would be left a profit of £1,000 on the whole work; there is a difference of opinion as to whether there will or will not be a profit of £1,000, and it is as well to make that matter clear if possible; the present line has cost £170,000, and the working expenses you may assume at present are £10,000 greater than they will be if the deviation is made, and if there is £10,000 saved, does it not appear to you that there will be an actual surplus of £1,000 after providing interest on the outlay? That is on the assumption; but supposing the outlay to be £250,000—which I have not the slightest doubt it will be, and probably more than that—you still have to provide interest, if you construct the line, to the amount of £16,800. If you had no expenditure beyond the present Zigzag, and could save £10,000 in working no doubt there would be a profit beyond the interest, but I do not see how the profit would come in if you take into consideration the cost of the tunnel at £250,000.
2064. *Mr. O'Sullivan.*] Has the proposal to take the line from Mount Victoria to Eskbank or Bowenfels been brought under your notice? I have heard of it, but it has not been brought particularly under my notice. Originally surveys were made down Mount York, in the same position as this surveyed by Mr. Rock. We intended to go to Hartley, but when we got to the Cox River we found that we should have a tunnel 2 miles in length, from the Cox to Bowenfels—the direction we were thinking of taking the line at that time.
2065. You did not make a very exhaustive survey of the country at that time? At that time we thought it was an exhaustive survey, but I did not like the idea of going down Mount York. We had to go round twice to get into Hartley Valley.
2066. Assuming that the line could be taken in the direction Mr. Rock states, from Mount Victoria to Bowenfels, and save $5\frac{1}{2}$ miles distance between Bowenfels and Mount Victoria, do you think it would be worth the while of the State to consider the advisability of carrying out that line? No, indeed I do not. You would then be destroying the whole of the line from Mount Victoria to Lithgow. Whatever might be the value of that line it certainly would not be worth while to adopt it now. But I have not gone into it at all, and do not care to pronounce an opinion about it.
2067. I gather from your evidence that you prefer to see the Zigzag remain as it is? Decidedly, unless a very much better line in some direction at very much less expenditure can be found.
2068. Twenty-four years' experience has shown this to be by no means a dangerous line, and you think it can be worked as easily as a 1 in 50 grade tunnel? I think so.
2069. Mr. Foxlee, the Commissioners' engineer, tells us that a 1 in 60 grade would be of no advantage, because there is a 1 in 50 grade between the end of Mr. Deane's line and Bell? Well, I think we may say that if 1 in 60 would be no advantage over 1 in 50; then 1 in 50 would be of very little advantage over 1 in 42. Therefore, I do not see the use of having a tunnel, even in that light.
2070. I gather from your evidence that the cost of the old Zigzag—£170,000—and the cost of the proposed work would total £420,000? Yes.
2071. And there would be interest to pay on that amounting to £16,800? Yes.
2072. The Commissioners say they could save £10,167 per annum—can you conceive of any other profit that would cover the extra £6,800? No. Besides that, some one appears to lose sight of the fact that you are saddling the Colony with £250,000 debt, which must be paid. You do not get rid of a capital account by paying the interest, and the capital has to be provided at some time or other. Therefore, if the line will only pay interest, I do not see the use of making a deviation of that kind.
2073. We are told they can guarantee £10,167 in lesser working expenses:—that would still leave £6,800 interest lying dormant to be covered? Certainly.
2074. Therefore, instead of there being a commercial profit, there would be a commercial loss? No doubt.
2075. I should like to know if there is any other source from which the Commissioners could possibly get the amount of that interest lying idle? I do not think so.
2076. There will be no difference at all in the traffic through the tunnel from what there is now across the Zigzag? No.
2077. Where is any extra traffic to come from? From nowhere that I can see; besides, it is not only the interest you have to provide for; you have the capital to pay off some time or other. You borrow money and pay the interest, but surely at some time or other you expect to refund the capital.
2078. Then, from the standpoint of traffic, so far as you can see, there can be no £6,800 forthcoming to cover that interest? No; because I cannot see how, by making that tunnel, you increase the traffic at all in any shape. You are, in fact, at a loss of £250,000, and why money should be borrowed simply to pay interest on that, I cannot possibly see.
2079. From your experience of the working of the Zigzag, do you think that the traffic can be taken as safely and as expeditiously over that as it could be through the proposed tunnel? I would not say as expeditiously, but certainly as safely as anywhere else. There is a little time longer in working the Zigzag on account of extra length and shunting, but it is as safe as any other part of the line.
2080. How much time do you think would be saved? I cannot say. I think the traffic manager said the other day sixty minutes in one instance.
2081. There are other zigzags in the world, I believe? I think there are, but not many.
2082. Is there not one in India? It is hardly a zigzag in India. The engine and train are run into a dead end siding, and the engine taken over a loop to the rear of the train. That is on the Great Indian Peninsula.
2083. Was your design an original one? I had never seen one at the time this was made.
2084. The one in India has been working successfully many years? Yes.
2085. But it is not so long as this one? You come down to a point, and, instead of backing the engine, you take the engine from the front to the back; that is the only difference.
2086. Has any attempt been made to alter that Zigzag? I have never heard of any; but I do not say that there has not been.
- 2087.

2087. You know that on some of the American lines out west, especially some of the lines going towards California, some very difficult mountain engineering work has been done? Yes. J. Whitton,
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2088. All those are working successfully, are they not? So far as I know, they are. I have never heard of any trouble about them; but I do not see how anyone can suppose there can be any danger in working the Zigzag. You are more careful in working that part of the line than any other, and I do not see how any accident can happen upon it except from carelessness. Proof of that is that it has been worked twenty-four years without serious accident, and I have no doubt that any accidents that have occurred have been occasioned by carelessness on the part of those working the line.
2089. *Mr. Davies.*] How many years were you connected with the Construction Department as Engineer-in-Chief? Thirty-three years.
2090. How many miles of railways were constructed in the Colony during your term of office? A little over 2,000 miles.
2091. And included in those 2,000 the Zigzag was a portion of the lines constructed under your supervision? Yes.
2092. Before you entered upon the construction of the Zigzag, I presume you had surveyors out and explored the whole of the country as to the most desirable route that could be obtained? Yes; I think surveyors were out five or six years.
2093. You had a number of flying and trial surveys made? Yes; everywhere. Wherever a line was suggested at all likely to make a good line to Bathurst we always surveyed it.
2094. Then you were thoroughly familiar with the whole of the country near, and some distance from, the present Zigzag? Yes; I thought so, at all events.
2095. Since the construction of the Zigzag have you heard or do you know of any better route than that which has been adopted by the Department? No; I do not.
2096. You do not know a better route at the present time? No; I do not.
2097. Do you think it possible that any better route could be found than the one along which you constructed the Zigzag? I do not think so. I know of no better route. Of course, you may make another line at considerably increased cost, but I do not believe that any line to the west could have been made at a cheaper rate or better than the present Zigzag.
2098. The works are of a permanent character? Yes; all of them.
2099. Do you remember the cost of the line from Lapstone Hill right through to Eskbank? No; I could not tell you the cost of the line.
2100. Have you been over the first Zigzag since the tunnel was constructed? I went through the tunnel the other day.
2101. The line alongside that tunnel has a very steep grade, has it not? The line up to where the tunnel is put in is 1 in 30. Through the tunnel there is, I believe, a grade of 1 in 33.
2102. Do you regard an alteration in that respect as of great commercial advantage in the working of our railways? It is of some advantage, no doubt, for the wings of the Zigzag were very short.
2103. That was the only difficulty in working the goods traffic? Yes; but I think that in constructing the tunnel, a mistake was made in not making it for a double line. When the lines were first proposed, a tunnel was shown on the original drawings, and I intended to carry it out, but we were so short of money that I could not do it, and I put in the Zigzag to reduce the cost.
2104. The principle that guided you in the construction of the mountain line was one of funds? I was to get a direct line if possible to Bathurst at the cheapest possible cost, no matter how made. I made one of the best permanent ways in the world for it, and the savings were effected by putting in sharp curves and steep inclines. I do not think that all those inclines could be improved even at considerable cost.
2105. Coming now to the schemes which have been submitted to the Committee, you have seen the plans Nos. 1, 2, and 3? I have.
2106. You have seen the plans showing the Commissioners' proposal to cut out that portion of the Zigzag at Dargan's Creek, and avoiding the Clarence tunnel? Yes.
2107. And constructing a tunnel of $1\frac{1}{2}$ miles in length out of a piece of line a little over $2\frac{1}{2}$ miles long, the main portion of the deviation being a tunnel? Yes; that is the Commissioners' scheme for getting rid of the Zigzag.
2108. They propose to start at the mouth of the tunnel with something like 1 in 42? That is, I think a portion of the present line, below the bottom points near Lithgow. There is an incline of 1 in 42 there.
2109. And a grade of 1 in 50 through the tunnel? Yes.
2110. Do you, as an engineer having had charge of the construction of most of our railways, think that a deviation of that kind would be a wise one to make? I certainly do not.
2111. Apart from the cost? Apart from the cost. I would not make any alteration in any line to alter the grade from 1 in 40 to 1 in 50. To spend £250,000 in merely improving an incline from 1 in 40 to 1 in 50 is not justifiable.
2112. During the time you had the construction of our railways, you advocated open lines as far as it was possible to obtain them? Yes; tunnels were only constructed where you saved money by doing so.
2113. They were only adopted by you in any case where you could scarcely avoid it? Yes; except where it made the line cheaper altogether.
2114. You are entirely opposed to No. 1 scheme as a deviation to give a better grade to the mountain line? I think it is very undesirable to make a tunnel line at all.
2115. More particularly when a long tunnel is proposed in a short deviation? Certainly.
2116. You had twenty years' experience after the construction of this line over the mountains, and during that long term of office you do not remember any serious accident arising from the working of the Zigzag with the mountain trains? No, I do not; but I remember an immense number of people coming from all parts of the world to look at the Zigzag, and it was considered as fine a piece of engineering work as had ever been constructed—certainly the finest in the Southern Hemisphere.
2117. So far as the commercial working of the traffic is concerned, you are not aware of a great amount of money being paid as compensation to persons injured by accidents? I do not remember any at all. The only man injured was an unfortunate fireman, and he, being in the Department, was, no doubt, compensated.
2118. Taking the mountain road and a corresponding length of line on any other portion of our railway system, would it compare favourably as regards the absence of accidents or damage to rolling stock with the

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- the Southern or Northern line? There are portions of the line on which we have never had an accident. There are other portions of the line that have cost thousands of pounds, not from working anything like the Zigzag, but from broken rails, axles, or tyres. You may have accidents of that kind anywhere.
2119. Taking the same length of line, any other portion of our railway system would be liable to the same accidents as on the mountains? I think so.
2120. And returns of twenty years show that the mountain traffic has almost been free from accidents? I think it is very safe indeed.
2121. You never have, and you do not at present regard it as necessary to spend £250,000 to make this deviation? I do not. I should regard it as a great waste of public money.
2122. The Commissioners represent that they will save in the cost of train mileage so many thousand pounds a year on the traffic—in fact, about £10,000—by dispensing with additional motive-power; that by getting an easier grade or a tunnel they will be able to dispense with two push-up engines, and use one instead of three. They represent the train mileage at 4s. 7½d. per mile, and suppose they will, in the working of the line, effect a saving of something like £10,000 a year, and that the results of their traffic will be as it is now, so that the savings and the amount of money that is earned at the present time would make £17,000 or £18,000 a year on this portion of the line;—did you understand, when Mr. Humphery put a question to you, that, taking the savings and earnings together, they would make £17,000 or £18,000 a year? I do not know that I did thoroughly understand that.
2123. Well that is the way it is put before us by the Commissioners, but if they did that the capital cost of the Great Western line would be increased by the expenditure of this proposed deviation, and we would have to pay that? Yes.
2124. So we could not escape from the capital cost of this proposed deviation; that is, if the deviation cost £250,000 that would be added to the original capital cost of the line? Yes; and I cannot see myself where the savings come in.
2125. At what would you estimate the savings on train mileage? I think 4s. 7½d. is too high a rate of savings that would be effected over that line. I do not think it matters much about shortening the line. There might be a saving in running to some extent, but not, I think, to the extent named.
2126. You think an estimate of 4s. 7½d. rather a high rate of saving per train mile? I think so. I should like to see the details, and I do not think you could make out such a saving for ordinary running. The engines are there in steam, and if they have not employment enough in running they are employed in shunting.
2127. The only advantage you can see of this deviation will be a little saving of time? Yes.
2128. So far as safety and the working of the line are concerned it would be of no great advantage in your opinion? I do not think it would.
2129. If the Committee want an expression of your opinion in reference to Mr. Deane's suggested deviation of the two schemes you prefer that if we are to have a deviation? I should prefer that, if you are to have a deviation at all; but I do not think that the expenditure on that line is at all justifiable at present. If you had a larger goods and passenger traffic you might perhaps have a deviation, but if you had it should be a deviation having more distinct advantages, and not one that merely provides for a grade of 1 in 50 instead of 1 in 42.
2130. But if there is to be a deviation you prefer Mr. Deane's scheme to the other? Yes, so far as we know at present. So far as the two schemes before the Committee are concerned, I think that Mr. Deane's scheme is the better, if a deviation is to be made at all.
2131. But you still hold the opinion that the present line is sufficient for all purposes for years to come? I think so.
2132. Quite able to serve the traffic we have at the present time, and shall have for many years to come? I have no doubt at all about it.
2133. *Mr. Hoskins.*] It has been stated in evidence by the Secretary for Railways that in estimating any savings that they might make in working the railway by dispensing with a portion of it, and having another portion in lieu of that, the Commissioners do not take as a set-off against any estimated savings the interest on the money expended on the road disused;—do you think that is a fair way to calculate? Certainly not. The interest on the £170,000 for the Zigzag is £6,800, which must be paid whether you destroy it or not.
2134. Therefore that legitimately ought to be made a set-off against any estimated savings on the other line? No doubt it should.
2135. At the time you took charge of the lines, when it was determined to make a railway to Bathurst over the Blue Mountains, were you not instructed by the Minister, and was not an opinion expressed by the Legislative Assembly frequently that you were to make a line, even although there might be steep grades and sharp curves, as cheaply as possible consistently with having a safe line to work over? Certainly.
2136. Therefore I take it that if there had been a larger amount of money placed at your disposal by Parliament to make a line to Bathurst, you would have had easier grades, and would have dispensed with a good many of the sharp curves? No doubt; but there must, at all events, have been steep gradients on the line, in consequence of the elevation from Emu Plains to Blackheath, but some of the grades might have been somewhat eased.
2137. A good deal has been said before the Committee and in the community about the steep gradients on this line—1 in 30, 1 in 33, 1 in 36, and so on;—are you not aware that even in England, where the population served by the railways is estimated to be 2,000 persons to the running mile as against 400 persons to 1 mile here, there are a number of steep gradients, as steep as there are here? On some of the lines in England gradients were years ago steeper. There are only two inclines of 1 in 30 in this Colony, one on the Western line and one on the Southern. There are a good many miles of 1 in 33.
2138. Is it not a fact that in England, with the great advantages they have there of the large amount of realised wealth to be invested in any enterprise likely to yield good interest, owing to the character of the country generally, there are many lines as steep as 1 in 30 or 1 in 36? I know there were such lines, but I do not know whether they have been altered or not. On the original line to Oldham there was a grade of 1 in 27, and on the line between Bristol and Birmingham there was a grade of 1 in 37 worked for a number of years, and I am not sure that it is not worked now.

2139. Are you aware that on the Western and North-western lines, running to South and North Wales, there are steep inclines? There were steep inclines, but I should not like to say that they are there now, because they may have been altered.

2140. However, grades of 1 in 33, 1 in 36, and 1 in 42 are not uncommon in many other parts of the world besides New South Wales? I do not think they are uncommon, but I do not remember at the present moment any of the lines you allude to as having inclines of that kind, and I should not like to say unless I was positive that it was so.

2141. During the progress of the sittings of the Committee I called upon the Commissioners, through the Secretary, who was examined, for a return of the number of accidents that had taken place on the Lithgow Zigzag, the number of persons injured, the nature of the injuries, the amount of compensation paid to the persons injured, the injury caused to the rolling-stock, and the amount that was expended in placing the rolling-stock in as good a condition as it was before it was injured, and this return is given in the Secretary's evidence; but he stated that they could only give a return for five years, that is, since the Commissioners have had charge of the railways—and that during those five years the amount of money spent by the Railway Department in the repair of rolling-stock and paying compensation to persons injured, and for damage to goods, and so forth, amounted only to £1,630 19s. 5d.;—is that anything extraordinary, considering these steep grades and the amount of traffic for five years? I think not, and if you take into consideration that it is not the fault of the Zigzag, but some mishap on the part of the officials.

2142. You know as a matter of fact that before you gave up the charge of the railways there were very few accidents on the Zigzag? Very few indeed.

2143. And never any serious ones? I do not think so.

2144. I find this in the record of accidents—that on the 13th April, 1892:—

Double-train backed into dead-end top points; the rear engine stopped suddenly whilst other engine was giving steam; trucks buffer-locked and derailed.

Was it not gross carelessness on the part of the men driving the rear engine to give steam when the other engine had stopped? Yes; it was the cause of the accident, no doubt.

2145. Is it right to characterise such accidents as incidental to the working of the Zigzag? Certainly not.

2146. That might happen anywhere else? Yes.

2147. A push-up engine is used from Emu Plains to Katoomba? From Emu Plains to the first station. They ascend up an incline of 1 in 30.

2148. We have it in evidence that there are push-up engines used all the way to Katoomba? There might be the same accidents as on the Zigzag, if the same carelessness were exhibited.

2149. The other two accidents were of the same character. If instructions are given to engine-drivers, as I believe they are, not to go down the Zigzag faster than 10 miles an hour with a train, do you think, if those instructions are carried out, and Westinghouse or other continuous brakes are used, there is greater danger, or even as great danger, in descending a grade of 1 in 42 as in passing over some of the long inclines with grades of 1 in 33? Certainly not. There is no chance of accident in descending those grades at a speed of 10 miles, or even greater speed, with a Westinghouse brake, for you can check the speed at any time if necessary.

2150. An accident might occur through engine-drivers not carrying out their instructions, but with a speed of 10 miles an hour the chance of accidents would be very remote? Yes.

2151. Do you think, from your long experience, that there would be as great a chance of accident in descending the incline from Mittagong to Picton as on the Zigzag? Far more chance.

2152. And as great a probability of accident in descending the long incline down to Peat's Ferry bridge? No doubt. That is a steep incline, and would be a dangerous part of the road if the engine-drivers were careless.

2153. If proper care is exercised you do not consider there is any great danger in going down the Zigzag? I do not.

2154. From the evidence you have given I gather that there were few accidents on the Zigzag before you resigned the general supervision of the railways of the Colony, and during that time our rolling-stock was not fitted with Westinghouse brakes? No; I introduced the Westinghouse brakes, in the Colonies.

2155. Therefore, there are still greater opportunities of preventing accidents now in taking trains down the Zigzag, seeing we have continuous brakes attached to our trains, than there were in the early working of the line at that place, when there were scarcely any accidents? Yes; and on any parts of the line the Westinghouse or some other good brake is a necessity in working any of the steep grades.

2156. All the passenger and stock trains have Westinghouse brakes and the goods trains are being rapidly fitted with them as well. Would the fact of having these brakes fitted to almost all our railway stock ensure a reasonable and fair immunity from accidents on the Zigzag, consistent with the dangers incidental to railway traffic everywhere? Yes, no doubt. Of course the Westinghouse, or some other good brake, is a necessity in working all steep inclines; in fact, all lines, whether steep or not, require a good brake of some kind or other. At that time we were working all trains without any such brakes.

2157. It has been stated in evidence that they have Baldwin and other goods engines so powerful that they take thirty loaded trucks up the Zigzag;—is not that a fair-sized train? I should think it was. I saw the other day that they said an engine did not take its full limit up the Zigzag; it only took thirty trucks, and they said the limit was thirty-three; therefore, it took very nearly its full limit up the Zigzag.

2158. Would not thirty trucks be considered a very fair load for an engine to take up any incline? Yes; but you want to know the number of tons taken up.

2159. But thirty trucks, laden with 6 tons of coal, would be a pretty good load? Yes.

2160. *Mr. McCourt.*] For some years after the construction of the Western line, do you remember the number of trucks the engines used to take up the mountains? I think they took ten trucks each.

2161. Do you remember ordering that they should take twelve? I think I did, and I think the engine-drivers did take twelve.

2162. You are aware that the improved engines which we have now take up thirty loaded trucks? No, I am not aware.

2163. Having larger and stronger engines, does that not materially cheapen the traffic on the mountains? It should do so, no doubt; but I have my own doubts about the new engines taking thirty trucks up.

2164.

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2164. Well, if they do not take thirty trucks, they take up double what the old engines used to take? While they take more, they are double the weight.
2165. And would not that cheapen the traffic on the mountains? No doubt.
2166. Supposing that during the next ten years engines will take forty or fifty trucks? Well, there is a limit to the weight of an engine. If you increase the weight of engines, you must increase your permanent way and bridges. Therefore, there is a limit to what engines ought to take, and I do not think it is always desirable to get the heavier engines, for they do more injury to the permanent way, and to the bridges, and to themselves. But there is a certain weight you must have to take loads profitably.
2167. But, on account of the heavier engines, the mountain is not such a bar to traffic as it used to be? A heavier engine can, of course, take more goods than a smaller engine. The load taken depends on the weight and steam power. You cannot get a light engine to take the same weight as a heavy one.
2168. That would not be possible? No; I do not think so.
2169. *Mr. Wall.*] In the working expenses of a line, is any allowance made for the cost of replacing the line at any time? No. You mean, I suppose, a sinking fund to replace the line. The repairing of the permanent way and all things connected with it are paid for yearly out of the railway revenue.
2170. So the annual expenditure on the permanent way covers the cost of replacing? Yes; I do not know that it always does, but it ought to do.
2171. So if a line were constructed and continued to work until the end of time, the depreciation by wear and tear on the line would be compensated for by the annual expenditure on the permanent way? Yes; and the same with the rolling-stock. It is always repaired out of revenue.
2172. That being the case, there would be no necessity for the establishment of a sinking fund? No.
2173. You stated, I think, that there was a limit to the age of a line? I do not know that I said that.
2174. I inferred that it could not last for ever, and that the £250,000 cost of the line would at some period become a charge? No; I said that if you borrowed capital to construct a railway you not only had the interest to pay but the capital to refund at some time or other.
2175. The interest on the present line is now being deducted from the Commissioners' accounts, and the construction of a new line, costing (say) £9,000 per annum, and turning in £10,000 per annum, must necessarily effect a saving of £1,000 a year, must it not? I was not aware the Commissioners were paying interest on the loan account.
2176. In their account of the working expenses of the line they include interest on the cost of construction, and it is deducted in their account from the annual earnings;—I am only speaking of figures they have given to us? I have not seen the figures.
2177. The figures submitted to us are to this effect—that the annual interest on the capital required would be £9,000, and the return would be £10,000, leaving a profit of £1,000 per annum? Yes; but then you have got to do what I wish to point out. You must pay the interest, and you have the debt also to repay at some time or other, and that £1,000 will go a very small way towards that.
- 2178-9. Having had charge of the construction of lines in this Colony for many years, I should like to ask you whether you would, in the capacity of Engineer-in-Chief, think yourself justified in recommending the construction of a line that conferred no advantages excepting the earning of £1,000 a year—that opened up no new country, or made no new connection—would you feel justified in recommending the expenditure of £250,000 for a deviation that would simply turn in £1,000 a year?
2180. *Chairman.*] You spoke in no measured terms, condemning the Colo Valley proposal;—had you a proposal from Blacktown to Blayney—I think Mr. Gipps' line—did you give some consideration to that while you were in office? Yes; I made a report on it. My impression of that line and Mr. Gipps' impression appear to be very different. I have an impression that I reported differently from what he stated to the Committee the other day.
2181. Comparing the two proposals, namely, *via* Colo Valley, to join the main line at Dubbo, and Mr. Gipps' scheme from Blacktown, to join the main line at Blayney—do you think either of them were feasible or worth considering? I do not think so.
2182. You would put those both in the same class, as being visionary? I think I did. I think I did not speak so favourably of Mr. Gipps' proposal as he spoke of it himself here the other day.
2183. *Mr. Dawson.*] You say there would be 24 miles of tunnel in the Colo Valley line;—would that make much difference if the line were used for goods only? Well, I think you should look at the expense of tunnelling. But 24 miles of tunnelling is quite sufficient to condemn any line.
2184. You object to it on the ground of expense? I do not think it practicable; and even if it were so, it would open up no new country, or be in any way a substitute for the Western line.

MONDAY,

Note (on revision):—I beg to furnish the following statement as to the grades:—The following is an extract from the proceedings of the Institution of Civil Engineers, April 6th, 1856:—Mr. Hawksshaw, V.P., was anxious to correct a statement which might have the effect of misleading those who were unacquainted with the railway system of this country. It had been asserted that the Lickey and the Dainton were the only inclines worthy of notice. There were a great number of inclines on the English and Scotch lines, and they were increasing every year, for railways were continually in course of construction through hilly districts which were formerly regarded as impracticable. Even before the construction of the South Devon line there were numerous inclines which were worked with a large passenger traffic. Halifax, for instance, had an incline of 1 in 44, and thirteen years ago (in 1843) twenty-two passenger trains, together with heavy goods trains, were daily, without difficulty, conveyed over it. The change in the views of the engineers on this subject has been very great. . . . Steep inclines were, therefore, no novelty in railway engineering nor were the performances cited greater than those which had been accomplished for years past in this country. The gradients mentioned by Mr. (now Sir John) Hawksshaw are:—

Dainton	1 in 45	Halifax	1 in 44
Lickey	1 in 37	Hunts Bank	1 in 49
Oldham	1 in 27	Bradford	1 in 50
Leeds	1 in 50		

In the proceedings of the Institution of Civil Engineers, January 16th, 1877, vol. 48, p. 43, a table of the gradients of the Great Western Railway is given. They include the following:—

Steeper than 1 in 40	Miles.
1 in 40 and steeper than 1 in 45	6.0
1 in 45 " " " 1 in 50	13.3
1 in 50 " " " 1 in 60	25.9
1 in 60 " " " 1 in 70	60.9
1 in 70 " " " 1 in 80	85.6
	72.7, &c.

MONDAY, 2 APRIL, 1894.

Present:—

JACOB GARRARD, Esq. (CHAIRMAN).

The Hon. WILLIAM HENRY SUTTOR.	WILLIAM CHANDOS WALL, Esq.
The Hon. JAMES HOSKINS.	WILLIAM McCOURT, Esq.
The Hon. FREDERICK THOMAS HUMPHERY.	JOHN CASH NEILD, Esq.
The Hon. JOHN DAVIES, C.M.G.	EDWARD WILLIAM O'SULLIVAN, Esq.
The Hon. WILLIAM JOSEPH TRICKETT.	CHARLES COLLINS, Esq.
THOMAS THOMSON EWING, Esq.	HENRY DAWSON, Esq.

The Committee further considered the proposed Deviation to avoid the Lithgow Zigzag.

William Theodore Foxlee, M. Inst. C.E., Engineer-in-Chief for Existing Lines, Department of Railways, sworn, and further examined:—

2185. *Chairman.*] When you were last before the Committee, you anticipated that within ten days you would have sufficient evidence at your command to be able to express an opinion as to whether the further deviations which you were surveying were beneficial or otherwise, as compared with No. 1 scheme; are you in possession of that information? I can give you in a general way the result of our investigation. The alternative scheme commences at the 85th mile post, on the western side of Bell station, takes a route along the northern side of the existing line passes through two tunnels and then down Farmer's Creek, and rejoins the existing line near Eskbank. The length of the line would be a little over 8 miles, and the ruling grade will be 1 in 60. The two tunnels will be about 1,600 yards long and 682 yards long respectively; and the estimated cost of a double line throughout is approximately £250,000. It was only this morning that I received the approximate plan and section, and I have since hurriedly put some figures together in order to make an approximate estimate of the cost. The Commissioners have not yet had time to look into the scheme; but they will do so no doubt, and inform the Committee of the saving which they anticipate will be effected if the deviation were carried out.

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2186. What is the distance between the point where you leave the line and the point where you rejoin it? Along the existing line, about 9 miles.

2187. You save 1 mile? The saving would be about 1 mile, 10 chains on the existing route.

2188. Is 1 in 60 the tunnel grade as well as the ruling grade? Yes; I have no doubt in my mind that the scheme is perfectly feasible and that it can be done for the amount I have named.

2189. That cuts out the grade of 1 in 42 on the Lower Zigzag? Yes, and the 1 in 50 from Dargan's Creek to Bell, and 1 in 33 from Dargan's Creek to Clarence siding.

2190. Are there not any very important watercourses to cross during the length of 8 miles? The most important one that we shall have to deal with is Farmer's Creek, near Eskbank. There will be some heavy work there, but I consider that in the estimate of £250,000 ample provision has been made for the watercourses. Although the ground adjacent to the creek is somewhat rugged, there is not a large quantity of water passing down it.

2191. Will you interfere to any great extent with private properties, such as collieries or anything like that? No.

2192. Unless you make a very great diversion to the north of your line, so as to get your distance, I do not see how you are going to cross the present 1 in 42 grade on the level? It starts sufficiently far back to cross the existing line about on the level at the 93rd mile post.

2193. You are gradually ascending on a grade of 1 in 60 upon a portion of what is now a grade of 1 in 50? Yes.

2194. Where would you cross the line? About the 93rd mile post. Care has been taken to avoid any interference with any colliery sidings or workings.

2195. Do you think you have allowed sufficient for 8 miles of new line with 2,282 yards of double tunnel? I am sure I have. I have also added a percentage for contingencies. I know the estimate is sufficient.

2196. It is only a little over £25,000 more than the cost of your No. 1 scheme? No; that line we estimated to cost £213,245.

2197. I thought you had a certain amount for contingencies? That is included in the sum. I should mention that a large portion of the line at the Bell end will be very light indeed—practically a surface line. There is a ridge which will be pierced with a main tunnel near the trigonometrical station, and having passed through the ridge the line will be very light indeed until it reaches the main line at the 85th mile post near Bell. That accounts for what may appear to be a low estimate, taking the total length of the line. The heavy work lies between the trigonometrical station and Eskbank; until you get to the trigonometrical station, there is very little work. The deviation has also the advantage of cutting out a number of 8 and 10 chain curves.

2198. What is your sharpest curve? Fifteen chains radius.

2199. It will cut out a lot of 8 and 10 chain curves which you consider very objectionable? Yes.

2200. With this information before you—rather startling information, I should think—are you prepared to express an opinion as to whether it is desirable to adopt this route at a cost of £250,000, with all the advantages you have mentioned, in preference to the No. 1 route at a cost of £213,000? Personally, I am still of opinion that No. 1 scheme is the best; but the traffic officers are going into the question of the saving which would be effected by this alternative route, and no doubt the result of their investigation will be known shortly. I am still strongly of opinion the No. 1 scheme will turn out the best.

2201. But if with No. 1 scheme you still have the objectionable grade of 1 in 42 at the bottom points, and a grade of 1 in 50 between Dargan's Creek and Bell, and also an extreme length of tunnel, as tunnels go in this country, do you think that the advantages to be derived from the line which you have described to us will more than counterbalance the disadvantages connected with that scheme? That is my opinion. Of course the great advantage which we have in the No. 1 route is that is the shortest possible route. That tells by reducing train mileage. There we save 2 miles 71 chains upon the existing route; here we save 1 mile 10 chains only. That is where it comes in, and I should not be in the least surprised to find that after all you will consider No. 1 route to be the best. We shall see when the traffic officers have gone into this alternative scheme, the plans of which, as I have just said, have only just come up this morning.

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2202. Just at present your view is that because No. 1 scheme is so much shorter it is the best, but when the Commissioners have inquired into the scheme from the traffic point of view it may be desirable to take the last surveyed line? It may be; I cannot say definitely.

2203. Do you hand in a detailed estimate of your No. 1 scheme? Yes. (*Vide Appendix.*)

2204. You were asked on a former occasion to acquaint yourself with the details of Mr. Deane's scheme, with a view to giving the Committee your opinion on the scheme;—you have been furnished with the details which you required? I received the plans on Saturday morning. I should explain that quite unexpectedly I had to go with the Commissioners on their western tour to Bourke last week. I did not get back until the end of the week; but your secretary was good enough to let me have the plans on Saturday morning, with the details of Mr. Deane's scheme. I am sorry that I have not been able to go over the ground; but still I am, I think, in a position to make some remarks upon his scheme. I want the Committee to understand that what I am going to say is in the most friendly spirit towards Mr. Deane. I am going to give my opinion upon the figures which have been put before me. I think his estimate is rather low. Take first of all his earthwork. I think I am right in saying that to compare like with like, his formation for a double line has been taken in cutting at 26 feet; ours has been taken at 28 feet; that should add £2,600 to his estimate. Then his tunnel is put down at £53 16s. per yard; ours is put down at £58; that will make a difference of £6,994. Then I do not see any item in his estimate for sanctuaries or recesses in the sides of the tunnel. These, put down at the figure at which they are included in my estimate—which is practically the same as Mr. Deane's—will be £616. Then there is no allowance for tunnel fronts in his scheme. That, in my estimate—I have estimated them, I think, as cheaply as they can be built in concrete, and there are a good many of them—will amount to £2,800 in his scheme. Then he has not included anything for signals. I have allowed £500 for signals at Dargan's Creek. Altogether making an addition of £13,510; and adding 5 per cent. for contingencies to the whole amount, which I have done in my own estimate, would bring his estimate up to £192,602. Of course I have not been over the ground, and I cannot speak quite definitely; but in addition to that some provision must be made for crossing the deep gullies—60 feet, 65 feet, 110 feet, and 85 feet below such level—by providing waterways, either in the shape of culverts or viaducts. We have all of us in our recollection, I am sure, the terrible accident which occurred at Bell three or four years ago, through the slipping away of the embankment. The accident was caused by the embankment becoming saturated. The gully crossed was a comparatively small one—and the bank could not be more than 25 or 30 feet deep—yet the whole line slipped away. I think it will be quite evident to the Committee that in the case of the gullies I have indicated on the plan, some provision will have to be made for passing the water under the embankments. The sum of £4,026 for culverts and box drains seems extremely small. A culvert of moderate size in one of these embankments would cost that money. I should have thought that £14,000 would be nearer the mark than £4,000 for these works.*

2205. As you have not been over the ground, perhaps I may state that these gullies have very little watershed area? That may be. The bank at Bell had very little watershed area—not much more than twenty times the size of this room—yet it melted away and allowed the train to roll down and kill one or two people.

2206. Do you find that in Mr. Deane's estimate there is no provision made for that? I find that there is a sum of £4,036, which I do not think anything like sufficient. Of course, I may be wrong, but looking at that section it does not look enough. Making these additions, and allowing 5 per cent. for contingencies, I bring his estimate, as I have just stated, up to £192,602, without adding anything to the item for culverts or viaducts.

2207. It really comes to this: that Mr. Deane's scheme will cost practically the same as No. 1 scheme proposed by the Railway Commissioners? I have very little doubt in my mind about that.

2208. Have you any other points to mention? I have not any other points to which I would wish to direct the attention of the Committee.

2209. In addition, of course, to the cost being somewhat similar to the cost of your own No. 1 scheme, there is the additional length of line? There is a considerably additional length of double line to be maintained.

2210. *Mr. Humphrey.*] Have you estimated how long it will take to complete this new deviation? It could not possibly be done under two years.

2211. In the same period which would be occupied in carrying out your No. 1 scheme? Yes. Although the main tunnel is somewhat shorter the line is longer; therefore, I think it would not be safe to say it would be constructed in less than two years.

2212. In giving your opinion that the No. 1 proposal is the preferable, have you taken into consideration that your new proposal would have the effect of cutting out the whole of the objectionable grades for a distance of 8 miles? I have taken all that into account. I wish you to understand that it is only my own opinion that I give.

2213. Do you not think that a greater saving will be effected by reducing those grades to 1 in 60? That is met by the increased distance which the trains would have to travel.

2214. By reducing the grades on the whole length of 8 miles, do not you think a greater saving would be effected than by merely constructing a tunnel for 2 miles, and still leaving the objectionable grades? I do not think so. I think the advantage will be found to lie with No. 1 scheme, but the tunnel is only 1 mile 49 chains in length.

2215. You think an additional length of 1 mile 70 chains would neutralise any advantage which would be gained by the improvement of the grade? I do.

2216. By constructing the No. 1 deviation, you will have for all time a grade of 1 in 42? That is so.

2217. It would be impossible to cut that out except at great expense? Yes.

2218. By this new proposal you would get rid of $1\frac{1}{4}$ mile of 1 in 42 grade which otherwise must be permanent? Yes.

2219. What view do you take of that? That means the employment of a bank-engine, the cost of which we can estimate. I mean to say that if we retain the 1 in 42 grade to the mouth of the main tunnel on the No. 1 proposal, it means the retention of the bank-engine at a certain sum per annum. I considered that before expressing my opinion to the Committee.

2220.

* NOTE (on revision).—Since giving evidence I have seen Mr. Deane, and, although he admits that the tunnel fronts and sanctuaries are not specifically mentioned in his estimate, he states that they are included in the price of the tunnel.—W.T.F.

2220. Do you say that in point of economy the No. 1 proposal should be preferred to this new proposal? I am strongly of opinion that it will work out so, when it has been gone into by the traffic officers. They are considering the matter now. W. T. Foxlee, Esq.,
M.I.C.E.
2 April, 1894.
2221. *Mr. O'Sullivan.*] As your new proposal commences at the 85th mile post, just below Bell, it would cut out all the line between that point and the Clarence tunnel, as well as the Zigzag? Yes.
2222. Is there not some trade done in timber between Bell and Clarence tunnel? I believe there is a small local trade at Clarence siding, but I do not think that it amounts to very much.
- 2222½. Would it be necessary to leave the old line for the service of that traffic? That is a traffic matter upon which I am hardly in a position to speak, but I should scarcely think so.
2223. *Mr. Davies.*] Have you been over this last deviation? I have been over the greater portion of it.
2224. Was it discovered by Mr. Suttor, a member of your staff? Mr. Suttor, one of our staff, gave us the information. He informed us that his father had told him that the stock from his station used to be brought round somewhere in the direction of the proposed deviation down Farmer's Creek.
2225. Practically, it was he who discovered this route? He gave us the information.
2226. He was the first man, I presume, who passed over the route? He gave the information to the Department, and I believe he was the first to give the information to me.
2227. He was the first to give the information to the Department, as far as you know? I think so. I am not quite sure that Mr. Suttor did not tell me that he informed the Department, before the Commissioners took office, that his father had told him that there was a practicable route round that way,—that the stockmen used to take their cattle round the shoulder of the hill on the north of the present line, and down Farmer's Creek.
2228. He made the survey? He has been assisting in making the survey.
2229. He is your principal surveyor? Mr. Baxter is my principal surveyor, and Mr. Suttor has been working with him.
2230. Have you any tracing or plan of your proposed deviation to show the Committee? I have no tracing at present. We have a rough plan, but I am not in a position to put it before the Committee until the Commissioners have had a chance of looking at it. It was only brought to town this morning, and the Commissioners have had no opportunity of seeing it.
2231. As you were summoned to give evidence on this question, you should have brought the plan with you? I am in the hands of my Commissioners.
2232. You are in the hands of this Committee at the present time? I am here to give evidence, but I am not here to produce plans which have not been submitted to my Commissioners.
2233. Are you aware that this Committee is the highest court of inquiry which has been constituted by Parliament in respect of the construction of public works? Yes, but I am here to a certain extent as the mouthpiece of the Railway Commissioners, and I do not consider it is my duty to bring forward any plans and proposals of which they are not cognisant.
2234. Are you not aware that the Committee, through the Chairman, can summon you to produce any plans or documents that may be in your possession? I am; but I am sure that the Committee would not care to be misled by plans which do not represent the views of the Railway Commissioners.
2235. What is the value of your evidence without the plans of your proposal? That is for the Committee to determine.
2236. You are here as a witness, and as a public officer you ought to be prepared to give this information to the Committee? I am here to give information readily and freely, as far as I can, but I am not here—I may be misinterpreting my position—to bring forward something of which the Commissioners may not approve.
2237. Will you give a detailed statement of your alternative route—the No. 4 scheme? My estimate of £250,000 is only an approximate one. We are not in a position to give any details at present.
2238. How many thousand cubic yards of cutting would there be? I have not the details before me.
2239. What amount of sidings would there be? I have given £250,000 as a round and approximate figure;—perhaps it would have been better for me to have said that I could not give any information as to cost. I am, however, as I have just said, not in a position to give the details to-day.
2240. You stated that there would be 2,282 yards of tunnelling in your scheme; what would it cost per yard? If you refer to the detailed estimate of the No. 1 proposal which I have handed in, you will see that I put it down at £58 per yard, and the cost would be the same on this route.
2241. You propose to cut out 9 miles of the existing line;—do you know the capital cost of that portion of the line? No.
2242. Your estimate is simply an estimate of the cost of constructing 8 miles of line? Yes.
2243. You do not take into account the capital cost of the length of line you cut out? I merely give an estimate of the cost of the proposed deviation; and when the saving estimated to be effected by that deviation has been ascertained, the Committee will be in a position to decide whether it is advantageous to carry it out or not.
2244. You state that the proposed deviation of 8 miles could be carried out at a cost of £250,000, yet you cannot give me any details in regard to the side-cuttings, or the quantities of earth which would have to be moved? No. You must only look upon that figure as a round or approximate figure.
2245. You might as well say £500,000? Oh, no; you might not.
2246. But to get the approximate cost, certainly there ought to be some details available? When the scheme has been submitted to the Commissioners, I have no doubt I shall be in a position to supply you with the details of the estimate.
2247. You cannot tell the number of culverts? I cannot give you any details.
2248. You can only tell us you are going to cut out about 9 miles of line, and that you hope to make the railway shorter by a mile and 10 chains at a total cost of £250,000? Yes; and I have pointed out the advantage that will be gained by doing so. I am sorry that I am not in a position to give the Committee any further information. I should have been glad to have been in a position to bring the plans; but I have been away from town, and it was only this morning that they came before me.
2249. As the Engineer-in-Chief for Existing Lines, do you think the Commissioners would be warranted in spending £250,000 on this deviation? I cannot express an opinion on a question of general policy. I think it would be out of place for me to do so.
2250. You do not care to express an opinion? I would rather not. 2251.

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2251. What are the commercial advantages of this proposed deviation which you mention? I think I have pointed out that the effect would be to cut out the 1 in 42 from Eskbank to bottom points, the Zigzag, the 1 in 30 against loads going west, and the 1 in 50 against loads coming east, known as Bell Bank, and a number of very sharp curves. By reducing the ruling grade, the loads can of course be increased.
2252. What saving do you think it will effect? I cannot tell you; that question is being gone into now.
2253. You cannot tell the Committee whether it would be justifiable to spend this money? No.
2254. *Mr. McCourt.*] Have you had a discussion with Mr. Deane as to which route is the best, and as to the cost? No. We have not gone into the thing together; but as soon as the plans of No. 1 proposal were sent to Mr. Deane, we spoke in a general way of what the advantages would be, and he said that he thought he could find a cheaper route. But beyond that we really have not had any conversation upon the matter.
2255. Did he say that he thought that he could get a cheaper and a better route? He said that he thought that he could get a cheaper route, but I am not sure whether he said a better one.
2256. I suppose you are both aiming at the same thing—the best route? Yes, of course; we want to do the best thing for the country.
2257. Do you not think it would be in the interests of the country if you were to discuss the matter with Mr. Deane? As far as I am personally concerned, I should be delighted to meet him and to do so.
2258. Why is it not done; who is preventing it? I am not aware that it has been suggested before.
2259. Do you not think it would be in the public interest if you and Mr. Deane were to discuss this matter? I am quite sure that it could do no harm, and it might lead to some good. I want it to be understood that Mr. Deane and I are on the most friendly terms.
2260. Although you are on the most friendly terms, still you are picking each other's work to pieces? That is hardly so. I made a proposal, a challenge was thrown down by Mr. Deane, and I naturally took up the challenge, and expressed my opinion upon his counter proposal.
2261. *Mr. Neild.*] With reference to the new line which has been surveyed on the northern side of the railway, has that proposal turned out as well as you anticipated? From an engineering point of view, I think so, as far as I can judge at present.
2262. You have got as good a grade as you hoped to get? Yes.
2263. And the line is no longer than you expected it to be? No. I think, from an engineering point of view, it turns out quite as well as we were led to believe it would.
2264. If it has turned out as well as you expected, and you still prefer the longer tunnel or the No. 1 scheme, what was your object in asking for the delay, which you pleaded so hard for in order that this survey should be completed? A route was suggested as feasible, and I, having one object in view—namely, the interests of the country—thought that it would be desirable to examine it. It has been examined, and the Committee will probably be apprised of the result shortly.
2265. *Mr. Wall.*] Have you compared this new route with the other routes before the Committee? Not so far as the working of the line is concerned.
2266. Without making such comparison, you cannot say whether it is better than the routes which have been suggested by the Public Works Department? I am not in a position to say that at present.
2267. Prior to initiating the survey of this new route, did you recommend the construction of the No. 1 scheme of the Commissioners? I did, believing it to be the best route.
2268. In the interests of the country, did you think it would be desirable to carry out that line without any further survey? I believed it to be the best and the shortest route.
2269. Are we to infer that if you had not recommended the alternative proposal, we should not have had this proposal put before the Committee? I am not quite sure that it is right to say that I recommended its construction. The Commissioners, after some investigations had been made with a view to cut out the Zigzag, instructed me to look into the matter, and No. 1 proposal is the result of my examination. Other people had been over the ground a good deal before me, and that appeared to me to be the best scheme. I laid it before the Commissioners, and of course left it to them to decide whether it should be adopted or not.
2270. Was it not, as a matter of fact, upon your report, that they decided to construct No. 1 scheme? I believe that is so, after consultation with the traffic officers to ascertain what the advantages would be if it were carried out.
2271. Since they decided to carry out that line, another route was recommended by the Public Works Department? A suggestion was made that a better route could be found.
2272. But since that suggestion was made the Commissioners have had a survey made of this line which you now submit? That is not quite the fact. The alternative suggested by their own officers came before us before Mr. Deane's counter proposal.
2273. Are you in a position to compare this proposal with the other proposals which are indicated on this plan? No.
2274. The Commissioners are not in a position to say whether the two schemes which have been submitted by the Public Works Department are better or worse than the alternative scheme which you are now recommending to the Committee? We are not in a position to say whether this alternative scheme is better than any of the others, inasmuch as we have not gone into the question of the working.
2275. Do you not think that the interests of the country would be served by the Commissioners investigating the schemes submitted by the Department of Public Works? I quite think they would; but if I understand aright, the Commissioners have applied for information in regard to these alternative routes to be placed before them in accordance with the provisions of the Railway Act, but have not been supplied with it. It was only on Saturday morning that I got from your Secretary the details of the "green" or No. 3 scheme, although I believe I am right in saying that the Commissioners had applied for information regarding it some weeks ago.
2276. Are we to understand that the reason why we are deprived of your valuable services in recommending any of these routes is because the Commissioners could not get certain information from the Department? I do not know positively, but I have understood that the Commissioners have not been supplied with information regarding the alternative routes suggested by the Department.
2277. Can you say whether the Commissioners have applied to the Department? I cannot say positively, but I believe it is a fact that they have.
2278. And as a result of not obtaining the information they have submitted an alternative scheme of their own? Not as a result of not getting that information. Soon after we had prepared the plans for our No. 1 scheme, it was suggested by an officer of our Department that a better route could be got; we thought it right to investigate it, and an investigation was begun straight away.
- 2279.

2279. *Mr. Suttor.*] Why is it necessary to have a double line on the northern side of the railway if the grade is only 1 in 60? In carrying out a work of this kind it would never do to construct a single line, and when the traffic increases in the course of a few years, to bring the contractors on the ground again. Further than that, there is a tunnel nearly a mile in length, which, for the purposes of ventilation, should be a double one, and while we are about the work, whatever scheme is adopted, it ought to be a double road through the tunnel.

W. T.
Foxlee, Esq.,
M.I.C.E.

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2280. The line over the mountains is virtually a single line from Penrith? Apart from the question of tunnel ventilation, which is a very serious matter, it is desirable, while we are about it, to make a double road. At certain seasons it is even now extremely difficult to work the traffic over the road.

2281. What would be the cost of a single line? I have not gone into the matter sufficiently to say, but I think it would be a pity for either route to consist of a single line.

2282. Do you think it is best to make a double line? Certainly. We have a double line from Eskbank, to the bottom points, and it would be folly to substitute a single line for a double one even for a portion of the distance.

2283. Can you give us an estimate of the cost of a single line? That can be prepared, although I would not recommend it.

2284. *Chairman.*] Approximately, what percentage would the cost of a single line bear to the cost of a double line? That is rather too wide a question to ask. I can tell you that a single-line tunnel would cost from £35 to £40 per yard, and a double-line tunnel about £60 per yard.

2285. Can you say that a single line over the same country would cost approximately, say, 40 per cent. less than a double line? I would rather not give a general answer of that sort. I can tell you in every given case, with the greatest ease, what the difference in cost would be.

2286. *Mr. Suttor.*] Will you furnish an estimate of the cost of a single line? Certainly.

2287. *Mr. Dawson.*] Have you read Mr. Whitton's evidence? No; I have not seen it.

2288. If he states that as far as he knows neither line is required; that the old line can do all the work and is perfectly safe, and would be much cheaper, and that he could not advise the country to go to the expense of making a deviation, would not the opinion of an engineer of his experience and standing be worth having? I think his opinion would be worth having, very much indeed; but that is only his individual opinion, and I personally differ from him.

2289. You think it is necessary to have one or the other? I think it is very desirable to avoid the Zigzag as soon as the country can see its way to do so. It was all right in its day, but no doubt the time is coming when it will be desirable to have a straight through run.

2290. Do you mean that the time is coming in the immediate future? I cannot tell; it is for the Commissioners and the Parliament to decide.

2291. You have a knowledge of the traffic; do you think that at the present time it would be desirable to do away with the Zigzag? I think it would be a very desirable thing to do away with the Zigzag.

2292. Does the present traffic warrant the cutting out of the Zigzag? I think it would be very desirable to cut it out. It would very much facilitate the working of the traffic.

2293. *Mr. Collins.*] Do I understand you to say that you prefer No. 1 scheme to No. 4 scheme because it is shorter, although the grades on No. 4 are better? Yes.

2294. The Department will get a greater amount of revenue from traffic over the extra mile? No. It is not proposed, I believe, that there should be any alteration of existing rates. The old mileage will be adhered to if the present scheme is carried out.

2295. Do you think that would be done if the line were lengthened considerably? I am not in a position to say; but I do not think the Department would propose a deviation which would increase the present distance.

2296. *Chairman.*] How long will it be before you are prepared to put before the Commissioners the whole of the details of your alternative scheme? It can only be a question of two or three days. I want the Committee to understand that the plans and sections which have been made are merely preliminary plans and sections, but sufficiently accurate to enable a judgment to be formed upon the value of the route. They are not what are known as working plans and sections, which would take some months to prepare, but they are sufficiently near to enable an opinion to be expressed definitely upon the desirability, or otherwise, of adopting the scheme.

2297. With the data you have before you the Commissioners can decide at once? I think it can only be a question of a few days.

2298. Do you know if it is the intention of the Commissioners to at once consider the question? I believe the plans are now under consideration. The plans only came up this morning, and really there has not been proper time to look into them.

2299. Are you aware whether a Departmental Board is now considering the question of the saving to be effected on the line? The question of the saving to be effected is being considered by the traffic officers.

2300. This Board is reviewing the estimate which was made in regard to the No. 1 route, and considering the saving which may be effected in connection with the alternative route? That is so, I believe.

2301. *Mr. Davies.*] Perhaps the reason why you only received the papers and plans from the Engineer-in-Chief for Railways on Saturday morning was owing to your absence from Sydney? It may have been. There would have been no advantage from the plans being in my office earlier in the week, inasmuch as I was absent in the west. When I spoke of plans and information not having reached the Commissioners, I referred to an application which I believe they made some weeks ago.

2302. I understand that the plans and information which you received on Saturday were waiting in this room for some days prior to your return to Sydney? I have no doubt they were; but even so, I think it is not unreasonable to expect the information to be sent to me.

2303. You think that the plans should have been sent before you returned to Sydney? No; but I do not think it is unreasonable to expect that the plans should have been sent over to my office.

2304. *Chairman.*] I may state that the plans were sent over to your office on Thursday by the Secretary to the Committee; it was the detailed estimate which was sent to your office on Saturday morning? Yes.

TUESDAY, 3 APRIL, 1894.

Present:—

JACOB GARRARD, Esq. (CHAIRMAN).

The Hon. WILLIAM HENRY SUTTON.
 The Hon. JAMES HOSKINS.
 The Hon. FREDERICK THOMAS HUMPHERY.
 The Hon. JOHN DAVIES, C.M.G.
 The Hon. WILLIAM JOSEPH TRICKETT.
 THOMAS THOMSON EWING, Esq.

WILLIAM CILANDOS WALL, Esq.
 WILLIAM McCOURT, Esq.
 JOHN CASH NRILD, Esq.
 EDWARD WILLIAM O'SULLIVAN, Esq.
 CHARLES COLLINS, Esq.
 HENRY DAWSON, Esq.

The Committee further considered the proposed Deviation to avoid the Lithgow Zigzag.

Hugh McLachlan, Esq., Secretary to the Railway Commissioners, sworn, and further examined:—

H. McLachlan, Esq.
 3 April, 1894.

2305. *Chairman.*] You received a request from the Secretary to this Committee, asking you to furnish us with the details of your estimated saving of £10,000 on the No. 1 route, and also to give us any information you might have as to the probable savings or otherwise on the No. 3 route. Have you got that information with you? Yes. It is contained in two letters, and a statement attached to one of those letters, which I now produce and read:—

Sir, Government Railways of New South Wales, Secretary's Office, Sydney, 3rd April, 1894.

In response to the request made in your letter of 28th March that the Railway Commissioners would furnish the Public Works Committee with a statement of the details of the saving to be effected by the cutting out of the Lithgow Zigzag, I am directed by the Commissioners to forward statement attached to this letter, from which it will be seen that the actual savings as worked out by their principal officers, on the train-mile basis, would amount to about £18,000 per annum. The Commissioners desire me to state that the actual facilities to the working of the Western Line traffic—which must become greater and greater year by year—cannot be gauged in figures, as the whole mode of working can be altered to much advantage, and the result to the Railways will be greater than expressed by the foregoing figures.

With regard to the request that the Commissioners should furnish a statement to include:—

- (1.) The total approximate earnings;
- (2.) The total approximate expenses;
- (3.) The total interest on the proposed new expenditure; and
- (4.) The total interest on the cost of the line which, if the deviation be carried out, will be abandoned.

The Commissioners desire me to say that the earnings would be precisely the same as over the present line, as they propose to charge the same rates for traffic passing over the new line as are charged over the existing line. The expenses will be reduced as shown in paper referred to in previous paragraph. The total interest on the proposed new expenditure will in all probability be from £8,000 to £9,000 per annum.

With regard to the total interest on the cost of the line which will be abandoned, the Commissioners are unable to give any information on this point, as the line was constructed long before they took office, and they have no data upon which they can give the information. The Commissioners would, however, point out that in their opinion the real question is: How much additional interest will have to be found annually in connection with the Railway capital to effect the savings and advantages which will accrue from carrying out the great improvement in the working of the railways by this scheme, including the important advantage of cutting out the Zigzag and the 1 in 33 grade by which it is approached from the eastern side.

The financial position is, so far as can be at present estimated, that by an expenditure of £8,000 or £9,000 per annum, £18,000 per annum, and probably more, will be saved.

I have, &c.,

H. McLACHLAN,
 Secretary.

The Secretary, Public Works Committee.

Proposed Lithgow Zigzag Deviation.

During the year ended 31st October, 1893, there were run:—

2,370 Down goods trains, and
 2,192 Up " " "

Total, 4,562

By cutting out the Zigzag and the 1 in 33 grade against traffic going west which now exists between Dargen's Creek and Clarence Siding, not more than 1,420 down and 1,624 up goods trains (total, 3,044) would be required to haul the same aggregate number of waggons; hence there would be a saving of 1,518 trains × 11½ miles (the distance between Bell and Eskbank)=17,647 train miles, which, at 4s. 8d. per mile, would effect a saving of	£4,117
In addition to the foregoing, in consequence of the shorter route, there would be saved on each of the remaining 3,044-trains 2½ miles per train (total, 8,751 miles), each at 4s. 8d. per mile	2,042
A similar saving would be effected on 1,401 regular passenger trains=4,036 miles, each at 4s. 8d. per mile	912
Saving in connection with non-use of push-up engines, it being proposed by the Commissioners to use engines which will take full load without assistance on 1 in 50	1,500
Estimated saving due to the shorter time of engine-drivers and guards being on duty, to the avoidance of delays to trains, and to the practicability of men being run through on goods trains from Penrith to Bathurst and vice versa without incurring unreasonable hours or overtime (one hour each way)	3,000
At the present time it is the practice to take the same load through from Eskbank to Penrith, owing to the inconvenience of breaking up trains, consequent loss of time, &c., and serious delay to traffic rendering the alteration of load at Bell and Katoomba undesirable; if the load is increased from Eskbank, it would be taken through from Eskbank to Penrith, and the benefit of this proposal would be practically that between Bell and Katoomba 568 ordinary trains would be saved, equal to the train mileage of 9,656, which, at 4s. 8d., would be equal to	2,253
Between Katoomba and Penrith the adoption of the larger through train loads as against the limited loads of to-day would mean a saving of 18,176 train miles, equal to a further saving of	4,240
Or a total of	£18,094

Sir, Government Railways of New South Wales, Secretary's Office, Sydney 3rd April, 1894.

In reply to your letter of yesterday, asking the Commissioners to add to the statement they are preparing for the information of the Committee—their estimate of the value from a traffic point of view of the No. 3 suggested route for the deviation to avoid the Zigzag, I am directed by the Railway Commissioners to state that the savings as worked out by the principal officers on the train-mileage basis would amount to about £15,100.

I have, &c.,

H. McLACHLAN,
 Secretary.

The Secretary, Parliamentary Standing Committee on Public Works.

2306. A Board of your officers sat yesterday to go into this matter? There was no Board. One or two of our officers met.

2307. Did they take the No. 4 scheme into consideration? No.

2308. They had not that scheme before them at all? Practically not.

2309.

2309. Have the Commissioners had the details of that survey placed before them yet? No.

2310. They have had no reports from the engineer upon it? They have had nothing more than a personal interview with Mr. Foxlee.

2311. Have they ordered the information to be furnished to them within a certain time in order that they may come to a decision upon the matter? At the first their instructions were that the survey was to be expedited as much as possible. It has taken more time than it was expected to do, because of the unfavourable weather.

2312. Can you give us any idea when the Commissioners will have this information before them, and come to a decision upon it? No, I cannot; but as far as any saving is concerned, the principle shown in the figures I have just handed in would be the same.

2313. Did you preside over the meeting of officers held yesterday to go into the details of the survey? We had no conference; the officers were just asked to come together.

2314. But as a matter of fact your officers came together and compared notes? They had a chat about the matter.

2315. You were not present? I was.

2316. If Mr. Foxlee informed us that in his belief this Board, or whatever you term it, would consider the probable saving on the No. 4 route, he was under a misapprehension? Yes, because we had not the facts before us. It was spoken about generally, but the figures were not worked out.

2317. How long would it take to compile an estimate of the probable saving on the No. 1 route, the length of which would be 8 miles—a saving of 1 mile 10 chains on the existing line—and the maximum grade 1 in 60? I think the Commissioners would like to see the full details before giving an opinion upon the scheme. No plan has been put before them yet. All they know is, that in all probability a grade of 1 in 60 can be obtained.

2318. But the officers who compiled the information you have just given us did not go into the question of capital cost? No.

2319. It seems to me that if they know the grades and the length of the line that is all they require? They could give an estimate of the saving on the No. 4 line, and it probably would not differ much from that which I have just submitted. While we should save more by discontinuing the push-up engines entirely, we should lose in train mileage.

2320. You cannot tell us when the Commissioners will be ready to come to a decision on the No. 4 proposal? No; I thought Mr. Foxlee would have been able to give you that information as to time survey would be complete.

2321. *Mr. O'Sullivan.*] Why have you left out of your calculation the interest on the £167,000 expended on the old Zigzag? The Commissioners thought that that was not a matter for them to consider. The Commissioners say that by spending a certain sum of money they can save so much; but if the Committee like to add the cost of the original line, of course they can do so.

2322. But you practically propose to throw away £167,000? Yes; part of the existing line would be rendered useless.

2323. *Mr. Hoskins.*] How do you make up your estimate of 4s. 8d. per train mile? It is made up from various items, such as the wages of drivers, firemen, and cleaners, stores, oil, water, wear and tear on the locomotives, repairs to engines and carriages, traffic expenses, &c. As a matter of fact, if the proposed deviation were made, we could close two or three stations, such as Clarence siding and the platform at the bottom points. That would save six or seven men.

2324. Do you think it would be fair to people who have taken up land there to do that? What we have to consider is that at the present time we require signalmen there to work the through traffic, and they could be withdrawn if the deviation were made.

2325. The 4s. 8d. per mile applies to the whole of our railways? Yes; and our officers say that the proportionate expenditure is higher on this part of the line than on the lines as a whole. The consumption of fuel is greater, while the traffic expenses are heavier, because the stations are closer together than they generally are in other places.

2326. But are there not grades, not only on the western, but even on the southern lines, longer and steeper than those on the Zigzag? In our 2,500 miles of line there are, perhaps, 40 miles of 1 in 33, and of that, one mile is situated at the point we are talking about. Therefore, the grade there is disproportionately heavy, compared with the whole of our lines. Of course, there are steep grades elsewhere—coming up from Ema Plains, for instance.

2327. Therefore we are to understand that the fuel required for working the Zigzag with a grade of 1 in 42 is not more than is required in other places? It is proportionately, if that length of line is compared with the lines as a whole. The train-mile is worked out for the whole of our lines; not for any single section.

2328. You say that if the Zigzag were avoided, you would dispense with two or three stations, for instance Clarence siding? We would dispense with the men who are now employed there to work the through traffic. We could possibly work the Clarence siding if it were kept open without a permanent staff, though that is a matter which the Commissioners have not considered. Clarence siding is the only place where there is any population.

2329. *Mr. McCourt.*] Who were the officers who made this estimate of £18,000? Principally Mr. Thow and Mr. Richardson.

2330. Who estimated the saving of £10,000? The same officers; but the first estimate was to some extent a general one, and was prepared to show that the interest would be covered by the saving. When the Committee challenged that estimate, the Commissioners asked these officers to go into the matter more closely and see if the saving was not much in excess of what they had stated.

2331. Did not Mr. Thow take every detail into consideration in making his estimate? No; the principal item which makes the difference is the saving which would be effected by running trains right through to Penrith, and that was not taken into consideration at first.

2332. Then £10,000 was a misleading statement? That was an under estimate. All that the Commissioners wished to show was that the interest would be covered by the saving.

2333. *Mr. Trickett.*] In the statement you handed in to-day you state that if the deviations were made 3,044 trains would do the work which is done by 4,562 trains at the present time, but on page 45 of our evidence you will see that Mr. Richardson, when asked about this matter, said that 3,276 trains would be required.

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required to do that amount of work—which answer is correct? The answer that I have just given. The Commissioners asked Mr. Richardson, when he was going into this matter again, to take into consideration what would be the saving, supposing the more powerful engines which it was intended to use on the mountains were used, and he thereupon worked it out as I have given it to you.

2334. Is not £8,000 a very large margin to leave? Yes; but it is nearly all accounted for by this new item, which amounts to over £6,000.

2335. Which item is that? The estimated saving in running trains right through from Eskbank to Penrith. I think when our officers were here before, they stated that there were other savings which need not be considered. In my opinion if the matter were thoroughly worked out, the total saving would be even greater than I have just stated. For instance, I do not think the saving between Katoomba and Eskbank going west, was considered. I think you could take larger loads than they have taken into consideration.

2336. That is, if you used more powerful engines; but would not their use entail heavier working expenses? Not more than have been given.

2337. Would it not create extra expense in wear and tear on the permanent way? I think not, because the engines are better balanced. They are on more wheels, with no greater weight on each axle. But, of course, these questions are more for a locomotive engineer to answer. I do not pretend to be an expert in regard to the details of working.

2338. In answers to question 1041, you say, "The line which will be cut out has cost the country, say £165,000? Yes; but by working the old line you would make no saving." How then can the Commissioners say in the letter which you have handed in, that they have no data as to the cost of the existing line? The sum mentioned there was stated by some member of the Committee. The Commissioners could not father it as their statement.

2339. Further on, question 1082, you were asked, "Therefore, if the line which it is proposed to dispense with cost £160,000, the interest upon that is not to be calculated as an expenditure as against the estimated gain on the new line? It is not calculated."—I see that the Commissioners still adhere to that view of the case? Yes.

2340. Although that money is apparently lost to the country, it is not to be taken into consideration in calculating the earnings of the proposed line? No; the Commissioners think that the practical question is this; "You are going to spend a certain sum of money to save so much, what interest will you get on your expenditure?"

2341. *Mr. Wall.*] In making a calculation regarding the saving on the proposed deviation, you assume that a stronger type of engines will be used? Yes; the powerful engines which were obtained for the mountain traffic.

2342. Are those engines used on the existing mountain line? Not generally.

2343. If they were used would not the earnings on the existing lines be greater than they are now? You mean that the saving would not be quite so great.

2344. Yes? That would be so. We should have a slightly higher average train load.

2345. You have put in a tracing showing the alterations that have taken place on the mountain line; is it not a fact that that line has been altered since the Commissioners took charge of it, curves having been taken out, and grades having been reduced? Yes; in a number of places.

2346. Does not that lead to the inference that the line was originally laid out in the wrong place? I could not say that. Railway companies all the world over, improve their lines as years go by in different ways. At first you want to spend as little as you can.

2347. Is it not a fact that the improvements effected by the Commissioners have been made at less cost than the original cost of the line? I should think so, because material and labour are cheaper than they were when the line was originally made.

2348. Is it not a fact that although the lines have been straightened, and the grades reduced, a lesser quantity of earth has been removed? I am not in a position to say.

2349. *Mr. Ewing.*] You preface your evidence by the statement that the saving is still problematical? It is an estimate, and estimates are not strictly accurate.

2350. Do you mean that the saving will be even greater than is now shown? The Commissioners think that it will be greater rather than less, when we come to work the line.

2351. *Mr. Collins.*] Was it at the request of your Department that this inquiry was adjourned for some days, for the purpose of getting information? The inquiry was not adjourned, although we asked that it might be adjourned.

2352. Did your Department wish that the inquiry should be closed until we got information about the new scheme? I do not know that that was being considered, but I think the Committee have now got sufficient evidence before them as a matter of principle, because the No. 4 scheme is somewhat the same as the No. 2 scheme.

2353. Mr. Foxlee has stated that under all circumstances, he would prefer the No. 1 scheme, until he found that the other was cheaper? The details have not been submitted to the Commissioners, so that I could not say what their opinion in regard to it is.

2354. *Mr. Humphery.*] Can you explain in what way a saving would be effected on the deviation in trains running between Penrith and Katoomba? It can be explained in this way. At the present time, a train leaving Eskbank is limited as to load by the Zigzag, and to avoid the delay to goods which would ensue if we joined these trains at the top, they are run right through, whereas, if the deviation were made, we should run longer trains through, and there would consequently be a saving, not only on the deviation, but on the line right through to Penrith.

2355. That saving would be on the up train, not on the down train? Yes, a saving of about £6,000.

2356. *Mr. Hoskins.*] If the £6,800 per annum, which is the interest on the money expended in making the existing line were added to the £9,000 per annum, which will be the interest on the cost of the proposed deviation, that would bring the total amount of interest to be paid up to £15,800, which was to be set against your saving of £18,000? Yes.

2357. Therefore, the Commissioners suggest that the country should incur an expenditure of £250,000, to save about £2,000 a year? Well, we look at it in a different way.

Henry Deane, Esq., M.Inst.C.E., Engineer-in-Chief, Railway Construction Branch, Department of Public Works, sworn, and further examined :—

2358. *Chairman.*] Since you were last examined by the Committee, you have had an opportunity of reviewing the proposal put forward by Mr. Rock? Yes.

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2359. Are you prepared to make a statement in connection with it, or do you desire that we should question you in regard to it? I can tell you what has been done in the matter. Mr. Rock has furnished me with an outline plan, and a section of his line from Mount Victoria to Eskbank. In his description of the line he says that it

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Commences at a point on the Sydney side of Mount Victoria station, close to the bridge, and runs thence close below the stationmaster's house, across the approach to the station and the road on the ground below the Grand Hotel, and on until Piddington's house is reached; thence below the school, through the grassy track above Piddington's dam, about 5 chains above same; thence below the Eltham Park Estate, until the point known as Titania's Glen is reached at 143 chains.

Here I might say that I find that there would be a tunnel required at 85 chains from the commencement, about 34 chains in length. Mr. Rock's section is here rather undefined; but it is clear that a tunnel will have to be made.

Thence round this bluff and Bentley's Gully, until at the head of this gully a tunnel is necessary. This tunnel passes under the old Hartley Vale Road close to its junction with the Mount York Road, then further on under the same Mount York Road, and ends on the Kanimbla side of the spur at 217½ chains.

That tunnel is shown on the section as 40 chains in length.

The line runs thence along the spur round the point of same into the gully known locally as Tabrett's. After heading this it follows the opposite side until it reaches Armstrong's selection, where it crosses the road to Hartley Valley township, about 60 chains from the Post Office.

I notice by the section that at about 270 chains, that is 3 miles 30 chains from the commencement of the line, another tunnel will, apparently, be necessary.

2360. Is that on the Mount Victoria side of Hartley? Yes. That tunnel will be about a quarter of a mile in length.

2361. Whereabouts will it come in? In descending Mount York, going along the sidling.

Thence through the flats for a distance of 70 chains to the River Lett; thence on the flat belonging to Flood into Oad's ground, known as Mount Clarence Farm; thence round Blackman's Creek Gully and along the range until the Doctor's Gap is reached; thence by a tunnel through this gap under the Lithgow Road at the point where this latter and the Doctor's Gap Road meet.

2362. Can you give us the length of the tunnel there referred to? About 1¼ miles.

Thence along the swamp at the back of the Vale of Clwydd and on until a curve joins the main line near the coaling station on the Eskbank side of same, and about 30 chains from the station.

To this description the following note is attached :—

The flat from the Hartley Vale Road, to and beyond the River Lett, necessitates a large amount of filling if the line of survey is adhered to. By running the route a little further up the valley in the direction of the township, this filling could be saved to a large extent, and the extra length could be applied to casing the grade. The point where this deviation would take place would be 600 chains. The point of departure for a line to Bowenfels would be 737 chains.

I notice that some parts of Mr. Rock's line are very difficult of construction, and on asking him for information on the subject he said that those parts were very short. If the ground were, as he shows it to be, hard and rocky, no doubt a viaduct could be made; but a bank could not be made, because the slope is too steep. Without going over the line, or having anyone to carefully go over it, I cannot vouch for the accuracy of Mr. Rock's survey; but I think it may fairly be taken to show a practicable route. I think, however, that he has very much under-estimated the difficulties of some parts of the line.

2363. When you say a practicable route, what grade would you have? His own grade, 1 in 50, although there might be some difficulty in this way—you might come on to ground which would give you no support. In the particular place to which I am referring, if it were all loose ground, it would be almost impossible to make the line. The only way would be to keep closer in to the side of the hill, which might bring you into tunnelling, and thus greatly increase the cost of the line.

2364. While Mr. Rock, in placing his proposal before the Committee, said that there would be two tunnels, 1 mile 40 chains in length, you say that there would be four tunnels with a length of 2 miles 34 chains, and the possibility of other tunnels being required in order to get sound ground? Yes; with regard to the last part of the question, Mr. Rock tells me that, in his opinion, the ground is sufficiently good; but I think it not unlikely that when it came to be examined, it might not turn out as favourable as he considers it. His traverse was not along his proposed centre line. He has traversed along a convenient route and taken cross sections, from which he has plotted his longitudinal section.

2365. Have you arrived at any conclusion as to the cost of such a line? It is impossible to give an estimate without further information.

2366. You know his estimate—£345,000 for a double line? I consider that that estimate was too low. I believe Mr. Rock would find himself under the necessity of lengthening his line, because of the difficulty in the way of getting down the side of Mount York. It would, perhaps, be necessary for him in some cases to put in flat pieces, and he would thus lose fall, and have to increase his distance. As a consequence, he would have to cross the River Lett at a much higher point, which would add to the cost of the line.

2367. What difference would the extra tunnelling be? It would depend very much upon the material through which the tunnel went. I find it very difficult to make an estimate of the cost of the work. No doubt part of the line would be similar to the line going down to the Hawkesbury; and judging from the cost of works similarly situated, I do not think it could be constructed for less than £500,000.

2368. Have you anything further to say about it? I should like to add that lines have been run through there before. When a route for the Western line was being looked for, the surveys were made down Mount York, and the practicability of such a line that way was proved, so that really we have gained very little extra information from Mr. Rock's survey.

2369. Have you anything further to state in regard to his proposal? I do not think so.

2370. Did Mr. Rock put before you any information concerning his proposed deviation from the River Lett towards Bowenfels? I had some conversation with him about it. He acknowledged that he had not been over the route, but had simply been along the road. He had not taken any levels, nor run any traverse from which a fair judgment of the line could be made. I have been round that road myself, however, and my impression at the time was that it would be very difficult country for a railway. It is very much scored with water-courses, and on a steep slope for a good part of the way. The contour is not at all smooth, and I think it would be very difficult to get round there. It is possible that one might

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come upon gaps where there was no supporting ground. The possibility of getting over some of the gulleys could only be proved by an actual survey. It would seem rather an extraordinary thing if, at the time all the original surveys were made, that line was not tried, or that there is no information about it. I think that the probability is that the line was tried and the surveyors gave it up. There is nothing on the plans to show that a line was ever run through the Bowenfels Gap. It is impossible to give any further opinion about the proposal without an actual survey.

2371. Mr. Rock did not furnish you with any more detail than he had already given to the Committee in regard to the proposed deviation to Bowenfels? He only discussed the matter with me, and I pointed out what I considered would be the difficulties of the case. It is only fair to Mr. Rock to point out, in justification of the view he has taken, that levels taken at some distance apart apparently show that the line could be made. If you have a drop of 200 feet in two miles that shows, apparently, that you can get a grade of 1 in 50; but it might turn out that you could not get proper supporting ground in between where you wanted it.

2372. Will you now give us your detailed estimate of the proposed No. 1 route; or perhaps you have a statement to make in connection with the whole matter showing what has been done as between yourself and the Commissioners? I should like to show what has actually been done, but I will make my remarks very short. On the 25th January, 1894, I reported to the Minister as follows:—

I have the honour to report for the information of the Minister that the exploration of the country now being made by Mr. Surveyor T. Kennedy proves the existence of more than one alternative route, which may turn out to be equal to, or better, than the direct tunnel scheme proposed by the Railway Commissioners. As it is a matter of vital importance that the best scheme, as regards economy of construction and traffic, should be laid before the Parliamentary Standing Committee on Public Works, I strongly recommend that the Committee be requested to defer the inquiry into the matter for a month, so as to give me time to get together all the necessary plans and sections.

To which the Minister replied:—

The Committee must fix its own time for the investigation.

On the 30th January, I wrote again—

Mr. Burge reports to me that the Minister, in my absence yesterday, sent for him and gave him instructions to put another surveyor on this work, in order that the plans might be ready for the inquiry by the Public Works Committee this day fortnight. It was my intention to put an extra hand into the field as soon as he could be profitably employed, but I thought it premature at present. Every effort will be made to get the whole matter completed at the earliest possible date, but I doubt the possibility of getting all surveys made, plans completed, and the matter carefully weighed and discussed with the Railway Commissioners by the date mentioned. It would be a great pity if, for the sake of a week or a fortnight, the matter should not receive the attention it deserves. My view is, that the best scheme should be picked out for recommendation to the Public Works Committee, and not that every scheme, either emanating from this Department or the Railway Commissioners, should be submitted for the Committee to choose which they like to adopt. All schemes will, of course, be laid before them; but I imagine that the Department should be prepared to advocate one particular scheme, and stand by it, and this can only be done if sufficient time is allowed to consider the matter thoroughly.

That minute was submitted to the Minister, who wrote:—

The statements in the above minute denote the course to be taken, but I am very anxious the Department should be ready by the day named.

I had already acquainted the Railway Commissioners verbally with what was being done, and had shown them sketches. When I had the plans and estimates fairly ready, I took them over to the office of the Commissioners and showed them to them. The Railway Commissioners saw the plans, but I was given to understand that they thought the matter had better stand over, as there was no extreme urgency, and they were investigating a line which would give very much better results than any of the proposals hitherto inquired into. Mr. Foxlee also saw my plans, and we talked the matter over together; but neither he, nor the Commissioners, seemed to trouble much about them afterwards, as they had such great expectations of a new route which was being tried, and which it was said could be made much more cheaply than the No. 3 route. Mr. Foxlee has always had ready access to my office, and I have put myself out over and over again to meet him. Appointments have been made and broken, because Mr. Foxlee has not been able to appear, and then fresh appointments have been made, as, I think, Mr. Foxlee will acknowledge.* When Mr. Eddy spoke to me during my interview with the Commissioners, he mentioned the No. 4 scheme, and gave me an outline of what was expected from it, namely, that it would cut out the 1 in 50 grade, and the whole of the 1 in 42 grade, and he added, that he believed that the work would be done at a low cost. I said that if such a scheme could be carried out for a moderate amount there was no doubt that it was well worth considering; but its scope was very much larger than that of the scheme before the Public Works Committee, and no doubt might be considered an improvement on that account.

2373. The Committee are to understand that you have, from time to time, placed before the Railway Commissioners the information at your command concerning both the No. 2 and the No. 3 route? Yes. The occasion to which I have referred was the last, I believe, upon which I had any conversation with the Commissioners about these matters, and since that time their attention seems to have been entirely absorbed in the new proposal.

2374. So that if Mr. Foxlee has stated that he is under the impression that no details of your scheme were ever submitted to the Commissioners he is in error? Yes. I should now like to make a few observations with regard to the No. 3 estimate which Mr. Foxlee criticised yesterday. Mr. Foxlee evidently entirely misunderstood that estimate. Why, I do not know, except, perhaps, that he may have had too little time to go into it, though that must have been his own fault, because I was always ready to see him, and could have given him any information he might have wanted. But as I have said before, his whole attention was taken up with the other scheme, and therefore he did not investigate this scheme any further. My estimate of cost for the No. 3 scheme, given to the Public Works Committee, was £186,318, inclusive of permanent way. That estimate embraced the cost of excavating and lining the tunnels, and the cost of the tunnel fronts and sanctuaries, though I understand that Mr. Foxlee yesterday stated that it did not do so.

2375. He stated that he could not gather from the information submitted to him, if any provision was made for these sanctuaries and fronts? The information was in Mr. Foxlee's hands. He must have misread it.

2376. Is there any definite statement as to sanctuaries? There is a detail which includes sanctuaries.

2377.

* NOTE (on revision):—This does not specially refer to the Zigzag matter, but I mention it to show how, at all times, I have done my very best to meet the convenience of Mr. Foxlee and the Railway Commissioners.

2377. But are the sanctuaries specifically mentioned? Yes, on a sheet attached to each estimate—the No. 3 estimate, and the No. 1 estimate. H. Deane,
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2378. And is there also a definite statement in regard to the tunnel fronts? Yes; I have put down for the tunnels £90,098, which is made up of £87,048 for lining, £320 for sanctuaries, and £2,730 for tunnel fronts. The details of the estimate, which I have furnished in black ink, totalled up to £181,072 10s., leaving a margin of £5,000 when compared with the estimate I had previously furnished the Public Works Committee. The estimate which I furnished the Committee for Mr. Foxlee includes earthworks at 2s. 6d. per cubic yard, culverts and box drains, £1,036, which I maintain is ample, the treatment of the stream diversion at the bottom of the lower points, £2,000; for level crossings, fencing, road diversion, and so on, £491; and tunnels, £90,098. The contingencies which I added, and which I understood Mr. Foxlee to say had not been added, amounted, in all, to £7,652, which is rather more than 5 per cent. on the whole, giving a total of £156,254 10s. To that I added £3,500 for supervision, giving a further total of £159,754 10s., to which I added the cost of permanent way, £21,318, making in all a total of £181,072 10s. The cost of the tunnels included the cost of sanctuaries and fronts. The price I put down for excavation was 10s. per cubic yard, and with such short tunnels the work can certainly be done for that. I put down the price of concrete at 36s., and of brickwork at 40s. per yard, and those prices are higher than we have already paid for the same work. As I had a margin of £5,000, and I thought those prices might be cavilled at; I have in a new estimate added an extra 4s. to the brickwork and concrete, putting down the brickwork at 44s. per yard, and the concrete at 40s. per yard, bringing the total estimate up to £186,911 19s., which is practically the same estimate as I gave to this Committee. I do not think that there can be any doubt whatever about the possibility of carrying out the work for my estimate. Mr. Foxlee yesterday appears to have referred to the accident at Bell. I never inquired into that matter, because I was not asked to do so, and, therefore, I cannot give any definite information about it; but I see that on the original working section of the line a 2-foot culvert was provided for. Now, I have provided nothing less than 3-foot and 4-foot culverts, and from the experience I have had in connection with lines in similar places, such as that going down to the Hawkesbury, for instance, I am quite sure that my estimate for waterways is more than ample. I am very sorry that Mr. Foxlee took upon himself to criticise the estimate, because I think it was entirely unnecessary. Although at first I did not care about saying anything of the estimate of the No. 1 scheme, now, since I have been distinctly challenged, not yesterday, but when mention was made about putting things on a proper basis, I have made out an estimate on my own account of that proposed deviation. Considering the difficulties of the case—the difficulties of the excavation and the heavy grade, which is heavier than the grade on the No. 3 line—there is not the slightest doubt that the prices asked for by the contractors on No. 1 line would be very much higher than those asked in connection with a line where there are short tunnels. I have obtained the opinion of contractors on this subject, and I am convinced that the prices I have put down for the No. 1 scheme, are, if anything, under the mark. I wish it to be understood, however, that I have not run willingly into this comparison. I was content to leave Mr. Foxlee to his own estimate, and I expected that he would leave mine alone. I have had charge of a good many works, and know what has been paid for them. I have a clear record in my office of all prices paid to contractors, and I am in a position to form a very fair comparative estimate of what work can be done for. All the information in my possession has been at Mr. Foxlee's disposal, and if he wanted to criticise my estimate he might have come to me and criticised it in my office, instead of criticising it here. My estimate for deviation No. 1 is over £240,000. It is rather difficult to fix prices for a long tunnel such as Mr. Foxlee proposes, because the conditions are unusual. In regard to what was stated some time ago that long tunnels were frequently made on heavy grades, I would point out that that is a mistake, because nearly all the long tunnels in the world are on easy grades. Perhaps a little bit at one end may be on a steeper grade; but as a rule these tunnels are on easy grades. This particular tunnel, however, has a grade of 1 in 50, and while some portion of the waste material will be taken out at the bottom end, the bulk of it will have to be lifted up through the shafts, or taken to the top end of the tunnel against the grade. It must, therefore, be clear to anyone of common sense that the cost of the work will be heavier than where you can tip the stuff down a bank at the mouth of the tunnel, or even half a mile away. One contractor told me that in his opinion the excavation of the long tunnel would cost four shillings a yard more than the excavation of the short tunnels, while the lining would be about the same. Another told me that the cost of the lining would be materially increased, and a third with whom I spoke dilated on the difficulty of the work, the troubles in regard to ventilation, and so on. I furnished yesterday, or on Friday, a detailed estimate of the No. 1 scheme based on the following prices:—Excavation, 12s. 6d. per yard, instead of 10s. a yard, which is undoubtedly too low; brickwork, 55s. a yard, and concrete 50s. a yard. That brings the total up to £240,489 1s. Taking the opposite extreme, however, and assuming that the contractor was right who said that the cost of the brickwork and concrete would not be increased, I have run over the estimate again, and put down the brickwork at 44s. a yard, and the concrete at 40s. a yard, as in my last submitted estimate for No. 3, allowing 14s. for the excavation, and charging the whole of the cost of the extra difficulty to it, instead of dividing it over the various operations. The cost of the tunnel per lineal yard reckoned in that way comes to £67 16s. 10d., as against £68 16s., reckoned the other way. So that applying the revised prices to fronts, sanctuaries, and so on, I bring the total up to £240,117 15s. 9d. That is considerably over Mr. Foxlee's estimate. As I said before, I did not want to make this comparison. I would sooner have discussed the matter in my office, but I have not seen Mr. Foxlee there for some time. He has been entirely engaged on this new scheme. I am quite sure that if comparative tenders were called for the two lines and they were both worked up to the same extent, the proportionate amount that would be put in by the tenderers would be about what I have given.

2379. Then you have come to the conclusion that the No. 1 scheme would probably cost £240,000, while the No. 3 scheme could be constructed for the amount you originally put before the Committee—£186,900? Yes.

2380. Have you any information concerning the No. 4 scheme? No; I do not know anything about it.

2381. Mr. Foxlee yesterday told us that the proposed No. 4 deviation would leave the main line at Bell, skirting the ridge until it reached the trigonometrical station, or somewhere near there; then tunnelling to the head of Farmer's Creek, and running down that valley until it joined the main line on the flat piece at the end of the 1 in 50 grade. The length of this line would be 8 miles, cutting out 9 miles 10 chains of existing line, and doing away with the 1 in 42 grade up the Zigzag, the 1 in 50 grade up the Bell bank, and the 1 in 33 grade on the down journey. The maximum grade would be 8 miles, and the estimated total cost £250,000 for a double line. There would be two tunnels, having a total length of about

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about 2,300 yards. Upon such data as that, would you care to express an opinion as to whether the line could be constructed for the sum named? I could not give you an opinion; but I think it is to be very much regretted that the Railway Commissioners did not ask me to do the work, because I could have proved the practicability of the line in three days, though I do not say that I could make a survey in that time. A surveyor proved the practicability of the No. 3 route in one day.

2382. As a matter of fact, your surveyor did commence to explore the route, but finding the Commissioners' surveyors already in the field, he was withdrawn to save even an apparent conflict? Yes. I do not know, however, that I should have searched as far north as the Commissioners have gone. I would not say that the new line would have been discovered by my surveyors, because the desire seemed to be to improve the line between Dargan's Creek and the lower points, though it is possible that the surveyor might have suggested something else. If, however, the Commissioners had asked me to look into a suggested route, starting from Bell, and running along to cross into Farmer's Creek, I should have been very glad to have done so, and with the experienced officers I have, I could have proved its practicability in three days.

2383. I suppose if the details furnished to Mr. Foxlee to enable him to come to the conclusion which he has come to in regard to the line were furnished to you, you could arrive at an opinion as to its probable cost, and so on? I should require to see the plans and sections probably, because I know that the work going up Farmer's Creek would be very heavy. Starting where Mr. Foxlee's surveyors do, from the 93 miles, that is, about a quarter of a mile below the 1 in 42 grade, and running up Farmer's Creek, you would have to commence with a very big bank. I do not know how steep it would be, because I have not the levels; but I should think it would be from 50 to 80 feet high.

2384. Suppose you received instructions to try the country between Bell and the 93 miles, *via* Farmer's Creek, how long would it take you to get the information necessary to put such an estimate before the Committee as they should have? It would depend very much upon the difficulties. I spoke just now about the easiness of forming an opinion as to the practicability of the line, though that apparently has only been proved within the last day or two, and from what Mr. Foxlee says, he evidently prefers the No. 1 proposal. It is a pity that so much time should, under the circumstances, have been lost in making this survey.

2385. If, at a cost of £250,000 you could cut out all the existing heavy grades and curves, would the expenditure be worth it? I am not in a position to give an opinion on that point; but if it would be worth while spending £225,000 on the No. 1 scheme, it would be much more worth while to spend an additional £25,000 on the No. 4 scheme. If the No. 4 line could be carried out for £250,000, I think that it is probably the line which should be adopted.

2386. Is there anything else that you would like to state to the Committee? I do not think so.*

WEDNESDAY, 4 APRIL, 1894.

Present:—

JACOB GARRARD, Esq. (CHAIRMAN).

The Hon. WILLIAM HENRY SUTTON.

The Hon. JAMES HOSKINS.

The Hon. FREDERICK THOMAS HUMPHERY.

The Hon. JOHN DAVIES, C.M.G.

The Hon. WILLIAM JOSEPH TRICKETT.

THOMAS THOMSON EWING, Esq.

WILLIAM CHANDOS WALL, Esq.

WILLIAM McCOURT, Esq.

JOHN CASH NIELD, Esq.

EDWARD WILLIAM O'SULLIVAN, Esq.

CHARLES COLLINS, Esq.

The Committee further considered the proposed Deviation to avoid the Lithgow Zigzag.

Henry Deane, Esq., M.I.C.E., Engineer-in-Chief, Railway Construction Branch, Department of Public Works, sworn, and further examined:—

H. Deane,
Esq., M.I.C.E.
4 April, 1894.

2387. *Mr. O'Sullivan*] Mr. Foxlee, in his evidence, laid stress on the fact that your proposed culverts or waterways would not be sufficient to take off the water from the gulleys you propose to cross, which he seemed to think would require some very extensive viaducts, increasing the estimated cost of the culverts from £4,000 odd to £14,000. I should like to hear your opinion upon the matter? It is quite a mistake. I mentioned, when previously examined, that there would be one high bank; but it is no higher or heavier than one of the banks on the line to the Hawkesbury, and consequently there can be no more difficulty in constructing it. The amount allowed for culverts is £4,036, which is in addition to what I have put down for the cost of the stream diversion, and the stream tunnel at the lower end, that is to say, I have allowed £1,000 for the waterways between Dargan's Creek and the top end of the long tunnel, or nearly £1,000 a mile, which is a larger average estimate than has been found necessary in connection with any other line which we have constructed. When it is considered that there are no long water-courses bringing down a large volume of water to cross, it will be seen that the provision is ample. In similar country small waterways have been usually made with small stone culverts, about 2 feet square. On the Hawkesbury line there are a great many such culverts. The larger waterways are dealt with by means of brick culverts, and there is one stone culvert. On this line, however, I do not propose to use anything less than a 3-foot culvert.

2388. Mr. Foxlee laid stress on the Bell accident, and mentioned that the culverts there were only 2 feet wide. I understand that you propose to make your culverts more than 3 feet wide? The smallest culvert is 3 feet wide.

2389. You think that such culverts will be ample to carry off the water coming down the gulleys? I am sure of it.

2390. There will be no occasion for expensive viaducts or work of that character? No. I have provided sufficient in the earthworks to fill up all the embankments. Embankments, I might point out, are far better

* NOTE (on revision) :—I should like to add that I have been given to understand that Mr. Foxlee stated that I had taken 26 feet as the width of my formation instead of 28 feet. If he made that statement nothing can have been more uncalled for. Mr. Foxlee knows that my practice is to use a width of 18 feet for single line and therefore 29 feet for double. These widths have been adopted on all the newest railways, the Kiama to Nowra, Lismore to the Tweed, Cootamundra to Temora, Molong to Parkes and Forbes, Milson's Point Extension, and Marrickville to Burwood Road Railways. It will be observed that my formation is thus 1 foot wider than Mr. Foxlee's.

better, more secure, and more durable than any class of viaducts. A stone or a brick viaduct will last a very long while; but there could be nothing better than a stone embankment, and this embankment will be composed of broken stone.

H. Deane,
Esq., M.I.C.E.
4 April, 1894.

2391. It has been pointed out, I think by Mr. Foxlee, that your grade of 1 in 60 will be of no greater advantage than a grade of 1 in 50, because there will still be the hill between Dargan's Creek and Bell to climb? I am surprised to hear that idea expressed. The practice in engineering, where you have a ruling grade, is not to put that grade in wherever you can, but to cut it out wherever you can do so and get the best grade possible. Where the grade is good you can get along better, because there is less strain on the engines, couplings, and so on. As I pointed out before a grade of 1 in 50 in the open is better than 1 in 50 in a tunnel, because the same engine will not draw the same load at the same speed in a tunnel, where the rails are probably greasy, as it will draw in the open. The greasiness of the rails makes an immense difference to the load which an engine can draw, and it is most desirable, not only on that account, but also because of the inconvenience caused by the extra production of smoke and other products of combustion when an engine is exerting its full power, to avoid constructing a tunnel upon the ruling grade.

2392. Mr. Foxlee holds the opinion that the addition of culverts and other improvements which would be necessary upon your line would bring up the cost to probably £200,000, while he contends that his estimate may be reduced eventually to about the same amount? I said yesterday that I did not want to attack Mr. Foxlee's estimate or to have anything to say in regard to it. It is the estimate which has been submitted to the Legislative Assembly, and I did not wish to refer to it; but since my estimate has been attacked I must make a comparison. I consider that Mr. Foxlee was very unwise to attack it, because it leads me to show that he is utterly in the wrong. I think I have already explained that it is not at all necessary to add to my estimate, because I have included everything that could be included, with, perhaps, the exception of the signalling arrangements, the cost of which Mr. Foxlee puts down at £500, but which ought not to cost so much. The removal of the existing signals, and their erection at Dargan's Creek, could be done for very much less than £500. While £500 might be the cost of providing entirely new signalling arrangements, it could not be the cost of refixing or renewing the present arrangements. Mr. Foxlee seemed to be under the impression, or chose to look at it from that point of view, that the construction of short tunnels, where the grade is lighter and the disposal of the spoil easy, would cost as much per cubic yard as the construction of a tunnel $1\frac{1}{2}$ miles long with a steeper grade, where all the stuff would have to be taken up that grade, or lifted up shafts 300 or 400 feet deep. The thing to me is so absurd that I cannot understand anyone taking that view.

2393. You are confident that your estimate will not be exceeded? I am confident that my estimate is a fair one, and that there is no necessity to add any further items. I have included everything, and my estimate of £186,000 will compare with the estimate of the No. 1 scheme which I submitted yesterday—£240,000.

2394. One of the reasons for the origination of this work was the possibility of finding employment for those out of work. How many men could find employment on the No. 1 and the No. 3 schemes respectively? I will furnish you with a statement giving that information*.

2395. In your opinion, how long will it be safe to work the Zigzag? I consider that it will always be safe, but it is rather a matter of convenience in working the traffic. With precaution, it will be as safe in the future as it has been in the past; but every year, as the traffic increases, it will be more inconvenient.

2396. I understand that you think that it will always be safe to run over the Zigzag if ordinary care is taken? Yes.

2397. But, looking at the matter from the traffic standpoint, you think that as years roll by the inconvenience will increase? Yes.

2398. We have it in evidence from Mr. Whitton, who was very strong on the point, that he sees no necessity for a change, that the Zigzag would be quite as good in the future as it has been in the past. Do you agree with him? I have officially no information as to the traffic there.

2399. It would appear from the experience of the last twenty-four years that the Zigzag is by no means dangerous? No, I should say not.

2400. Ordinary care being taken, the Zigzag is no worse than any long, steep grade? When you say ordinary care, you mean care considering the construction.

2401. Yes; care such as is taken now? Yes.

2402. Mr. Davies.] You see no reason to alter the opinion you stated yesterday that Mr. Rock's scheme would cost at least £500,000? I have not been able to go into the matter further, because I have had nothing more than Mr. Rock's plan and section to go upon.

2403. Having examined all the details furnished to you by him, you have arrived at the conclusion that the line would cost somewhere about £500,000? I do not think I put it in that way. I said that I thought it would scarcely be done for less. It might cost more.

2404. Do you know of any advantage which his suggested route has over the other routes, which have been submitted to the Committee? No. I think it would be a great pity to do away with such a long section of the existing line as he proposes to cut out. If there had been no difficulties to encounter, the line would probably have been taken in that direction originally; but no doubt the cost of tunnelling prevented it.

2405. You do not see any good reason for adopting his suggestion? No.

2406. I think you stated that Mr. Rock's survey was part of an old survey made by the Railway Construction Department? I said that the Department had had surveyors out there, and that lines had been run down Mount York. The sides of Mount York have been utilised for getting down into the Hartley Valley.

2407. Can you say why the line was not carried that way? It must have been the cost of the tunnelling.

2408. You do not recommend Mr. Rock's scheme, because of its expense, and the large section of existing line which it would cut out? That is so.

2409. Do you regard 4s. 8d. per train mile as an excessive or as a reasonable amount to take in estimating the saving to be effected by cutting out the Zigzag and adopting the No. 1 deviation? That is a matter upon

* NOTE (on revision) —I am of opinion that the number of men, miners, or rockmen and labourers, which could be employed shortly after the work commences, would be,—in the case of No. 1 scheme, about 200 men, and in the case of No. 3, about 600.

H. Deane,
Esq., M.I.C.E.
4 April, 1894.

upon which I have some diffidence in expressing an opinion. I do not know the whole of the circumstances, but as a rule, if a small portion of a line is cut out—say, a mile or two—the whole cost per train mile is not put against it; but it may be correct to charge it where you do away with a whole section, such as that between Bell and the lower points. If it was merely a question of cutting out a small portion of the line, such as the Zigzag itself, making no alteration in the length or number of the trains, it would be excessive to charge 4s. 8d. I have not the particulars before me; but I believe it has been stated that the doing away with the Zigzag will reduce the number of trains required by the Department, and I do not know that I am prepared to advance any objection against the charging of 4s. 8d. for the trains which are got rid of; but when you come to compare the running of the same number of trains over a line which happens to be a mile or two longer, it is decidedly wrong to charge 4s. 8d. for the extra mileage.

2410. Then you would regard 4s. 8d. as an excessive charge against the cutting out of the Zigzag? I do not say that. To part of that estimate I am not prepared to offer any objection; but when you compare one line with another which is a mile or two longer, it is not fair to charge 4s. 8d.

2411. You prepared a detailed estimate of the whole of the work necessary for carrying out the No. 3 scheme? Yes.

2412. Do you know the quantities to be taken out of the cuttings and excavations? They have been taken out in detail; the total is very easily obtainable from the estimate. If the total cost of the excavation is multiplied by eight, it will give the number of cubic yards excavated.

2413. Do you remember what was Mr. Foxlee's estimate for the tunnel per cubic yard? 10s. for the excavation, and that is the price to which I principally object. 10s. is the price for which we have had tunnel work done, and which I have put down for the short tunnels on the No. 3 line; but it is quite clear that it would not be enough for the No. 1 tunnel.

2414. Has 10s. been the usual price paid by your Department for this work? We have had various prices.

2415. Have you had the work done for less than 10s.? No; 10s. is the lowest price.

2416. On the No. 3 scheme there are a number of short tunnels giving a great many faces, and that is why the work will be done more cheaply than on the No. 1 scheme? Yes; and there will not be so far to haul the stuff.

2417. The grade would be easier? Yes.

2418. On the No. 3 scheme there are seven small tunnels? Yes.

2419. That would be fourteen faces, while there would only be two faces for the long tunnel on the No. 1 scheme? There would be more faces than that, because each shaft would give two faces; but they would lead to extra expense, because the stuff that came out of the headings would have to be lifted up the shafts.

2420. That would increase the cost of the large tunnel? Yes. Then in the long tunnel the ventilation would have to be looked to very carefully, while with the short tunnels it is probable that no special ventilation would be required.

2421. You based your estimate of Mr. Foxlee's scheme upon the ruling rates, which you used in connection with your estimate of the No. 3 scheme? Yes. I put the cost of lining down as the same in each case, though I am of opinion that it would cost more in the long tunnel; but I made a difference of 4s. a cubic yard, or about £12 10s. per lineal yard, in the cost of excavation.

2422. But generally you applied the same rates as you applied to your own scheme? Yes, except for the tunnel excavation. Of course, if you get other opinions in regard to this matter, some experts may say, "You should put a little more on to the cost of the lining, and take a little off the excavation"; but you will find that the prices I have put down provide for a fair comparison.

2423. I suppose you saw Mr. Foxlee's statement that you were very short in many of your items? Yes.

2424. You are still of opinion that you fully estimated the probable cost of the No. 3 scheme? Yes. You see, I did not leave out the items which Mr. Foxlee thought had been left out. I am sorry he did not come to see me in regard to the matter. Whenever there has been a difference of opinion between us, Mr. Foxlee has generally come to see me in regard to it; but on this occasion he did not do so.

2425. *Chairman.*] You have already explained that the items were down on the list which you furnished to him? Yes, and if he did not understand the sheet, it would have been very easy to ask me to explain it. It is so clear that I have taken into consideration the costs of fronts and sanctuaries that it should not have been overlooked.

2426. *Mr. Davies.*] Have any representations been made to you by the Traffic Department in regard to the inconvenience arising from the Zigzag? Of course; it has always been looked upon as a desirable thing to get rid of the Zigzag, and some time ago a survey was suggested, but, after some little inquiry, the matter was allowed to stand over.

2427. Were representations made to the effect that the traffic had very largely developed, and the present road was not sufficient to carry it? I do not remember what was said at the time.

2428. There have been no representations made to you to the effect that the existing line is not sufficient for the traffic? No, not to me. I presume representations have been made from time to time, or else the idea of cutting out the Zigzag would not have originated.

2429. Is it not a fact that the object of cutting out the Zigzag is to save working expenses and haulage, rather than to facilitate the carriage of goods and traffic? I do not think it is proposed so much in the interests of the senders of goods or of passengers as in the interests of the traffic.

2430. To reduce the cost of haulage in working trains across the mountains? Yes.

2431. You do not care to express an opinion as to whether the existing line is sufficient for the traffic? No. I can see many advantages to be obtained by cutting out the Zigzag, but I cannot say whether they would counterbalance the expense. It is a matter I have not been consulted upon.

2432. *Mr. McCourt.*] If Mr. Foxlee says that you threw out a challenge to him over this matter, is his statement correct? I should like to know how I could throw out a challenge to him. My office is that of Engineer for Railway Construction, while Mr. Foxlee is Engineer for Existing Lines. If Mr. Foxlee, who is not Engineer for Railway Construction, stated that he had thrown out a challenge to me, it would have been a different thing.

2433. Do you think that it would be an advantage to have the Construction and Maintenance Branches of our railway system under one head? That is a matter of general policy upon which I would rather not give an opinion.

2434. *Mr. Neild.*] Would the No. 3 scheme cost less if it were carried out on a grade of 1 in 50? That would not make a great difference in the cost. If a grade of 1 in 50 were adopted I could reduce the

- the length of the 768 yards tunnel, but it would not make any real difference in regard to the other tunnel. I consider that 1 in 60 is the most economical grade. H. Deane,
Esq., M.I.C.E.
2435. If the grade were 1 in 50, would it make a difference of £5,000? I doubt it. I think the only real difference it would make would be in the length of the lower tunnel and in the cutting. 4 April, 1894.
2436. While the tunnels might be a little shorter, there would be more embankment to make? Yes.
2437. So that the saving would not be very great? No; I do not think it would be more than £2,000 or £3,000.
2438. Which would be more than counterbalanced by the increased facility of working given by a 1 in 60 grade? Yes.
2439. You are acquainted to some extent with the new northerly route which has been found by Mr. Foxlee's surveyors? Yes.
2440. Do you think it superior to your No. 3 route? I could not say until I had seen the details. What I said yesterday was that if the line could be taken that way for £250,000, that route would be preferable to the No. 1 route.
2441. But would it be preferable to the No. 3 route? That depends upon whether the advantages turn out to be as great as are hoped for. I have no data upon which to form an opinion, however.

Hugh McLachlan, Esq., Secretary to the Railway Commissioners, sworn, and further examined:—

2442. *Chairman.* You were asked yesterday to furnish the Committee with a statement of the probable savings which would be made if the No. 4 route were adopted. Have you got that information? Yes; it is contained in the following letter, and accompanying statement, which I will read:— H.
McLachlan,
Esq.

Sir, 4 April, 1894.

Government Railways of New South Wales, Secretary's Office, Sydney, 4th April, 1894.

In compliance with the wish of the Public Works Committee that information might be afforded as to the saving likely to be effected under the No. 2 scheme being investigated for the Railway Commissioners, I am directed to say that owing to the unforeseen delays occasioned through the inclement weather retarding the completion of the surveys, the country also being of a very rough character, the Commissioners have only had submitted to them rough plans and estimates in connection with the alternative scheme in question.

Speaking generally, the cost is estimated to range from £200,000 to £250,000; but it is hoped that careful inquiry may show that the work could be carried out at the lower sum.

With regard to statement relative to the effect on the traffic working, I have to attach a return compiled by the principal officers on the same lines as the previous one, based on the approximate results of the scheme so far as at present can be ascertained from the progress survey.

I have, &c.,

H. McLACHLAN,
Secretary.

The Secretary, Public Works Committee.

Proposed Lithgow Zigzag Deviation.

During the year ended 31st October, 1893, there were run:—

2,370 Down goods trains, and
2,192 Up " "

Total, 4,562

No. 2 Scheme.

By cutting out the Zigzag and the 1 in 33 grade against traffic going west which now exists between Dargan's Creek and Clarence siding, not more than 1,420 down and 1,624 up goods trains (total, 3,044) would be required to haul the same aggregate number of waggons; hence there would be a saving of 1,518 trains x 11½ miles (the distance between Bell and Eskbank)=17,647 train miles, which, at 4s. 8d. per mile, would effect a saving of	£4,117
In addition to the foregoing, in consequence of the shorter route, there would be saved on each of the 3,044 remaining trains 1½ mile per train (total, 3,424 miles), each at 4s. 8d. per mile	799
A similar saving would be effected on 1,404 regular passenger trains=1,579 train miles, each at 4s. 8d. per mile	368
Saving in connection with non-use of push-up engines, it being proposed by the Commissioners to use engines which will take full loads without assistance on 1 in 60	2,345
Estimated saving due to the shorter time of engine-drivers and guards on duty, to the avoidance of delays to trains, and to the practicability of men being run through on goods trains from Penrith to Bathurst and vice versa without incurring unreasonable hours or overtime (fifty minutes on up and down journey)	2,500
At the present time it is the practice to take the same load through from Eskbank to Penrith, owing to the inconvenience of breaking up trains, consequent loss of time, &c., and serious delay to traffic rendering the alteration of load at Bell and Katoomba undesirable; if the load is increased from Eskbank, it would be taken through from Eskbank to Penrith, and the benefit of this proposal would be practically that between Eskbank and Katoomba 563 ordinary trains would be saved—equal to the train mileage of 9,656, which, at 4s. 8d., would be equal to	2,253
Between Katoomba and Penrith the adoption of the larger through train loads as against the limited loads of to-day would mean a saving of 18,176 train miles, equal to a further saving of	4,240
	£16,622
Less for extra maintenance on the 16 miles of double line as against 11½ of single line at present, at £230 per mile	1,035
	£15,587

NOTE.—The above estimate of saving upon present working is based upon the assumption that the load of up trains will be limited to forty waggons.

Harry Richardson, Esq., Out-door Superintendent, Department of Railways, sworn, and further examined:—

2443. *Chairman.* Since you were last examined by the Committee, you and other officers of the Railway Department have consulted together as to the probable savings which would be effected if the No. 1 route were adopted, and you have amended your original estimate so that the saving is now estimated at £18,000 per annum instead of, as formerly, £10,000 per annum? Yes. H.
Richardson,
Esq.
2444. *Mr. Humphery.* In arriving at the revised figures had you the advantage of consulting the Commissioners or any of the officers of the Department? Yes. 4 April, 1894.
2445. Will you give the names of the gentlemen who have assisted you in arriving at the revised estimate? Yes; Mr. Foxlee, Mr. McLachlan, Mr. Thow, and Mr. Stanger.
2446. Mr. Stanger is an officer of the Department, I suppose? Yes.

2447.

H.
Richardson,
Esq.
4 April, 1894.

2447. Do you think that £18,000 may be regarded as a fairly correct estimate of the saving which would be effected if the No. 1 proposal were adopted? Yes.
2448. In your former statement you estimated the saving at £10,000, but you confined your calculations to the section between Eskbank and Bell; now your calculations extend to the whole line between Eskbank and Penrith? Yes; the revised estimate includes a consequential saving which represents the advantage gained by taking an increased load over a longer distance.
2449. Will you explain how you make up the difference between £10,000 and £18,000? Yes. The practice hitherto has been to take on the average twenty-nine trucks on each train from Eskbank to Penrith; but if the Zigzag were cut out we should be able to take forty trucks, or eleven trucks more than we take now, which would result in a saving of 568 trains between Bell and Penrith.
2450. And that is estimated at what? £6,493.
2451. There is still £2,000 to account for? In giving my former estimate I included the cost of the services of a push-up engine right through the long tunnel; but, upon going into the matter again with our professional gentlemen, I found that they were of opinion that, with the engines which would be used, we could dispense with the services of push-up engines and save £1,500.
2452. You would dispense with push-up engines altogether? Not altogether. We propose to use them on the I in 42 grade, and as far as the mouth of the tunnel.
2453. You would still require a push-up engine as far as the mouth of the tunnel? Yes; one. We have three such engines now.
2454. You would effect the saving by leaving the train at the western end of the tunnel, instead of pushing it up to Dargaz's Creek? Yes.
2455. So that your estimate of savings has been increased by £8,000. Will you show how that amount is divided between the traffic, the locomotive, and the permanent way departments? We have taken the average cost per train mile for the whole railway system, 4s. 8d. The permanent way charges amount to something like 15d. or 16d. a mile, the locomotive charges to 1s. 10d. a mile, and the traffic charges to be between 16d. and 17d. a mile.
2456. In an estimate submitted by Mr. McLachlan yesterday, £3,000 is put down as the estimated saving "due to the shorter time of engine-drivers and guards being on duty." I understand that there will be a saving of about an hour on the journey? Yes.
2457. Would that time be taken into consideration in the estimate of 4s. 8d. per train mile? Yes, that is the average cost for all our lines.
2458. Then are you not charging it twice? I do not think so. This is an exceptional piece of line, and it takes us more than twice as long to work over ten or eleven miles here as it does to traverse a similar length anywhere else. The delays occasioned by breaking up the trains at Bell slowing down the Zigzag, and remarshalling at Eskbank make up more than an hour, and are quite apart from the ordinary train running.
2459. I understand this to be the case: that, although in the average cost of 4s. 8d. the time of journey has been taken into consideration, yet, owing to the exceptional nature of the service over the Zigzag, you are entitled to take credit for an additional saving. Is that so? Yes.
2460. I wish to know how you make up the estimated saving of £8,000 on the Lapstone tunnel? During the last fourteen and a half months we have reduced the number of trains running between Katoomba and Penrith by 1,033, which is equal to a reduction in the train mileage of about 85,191 miles.
2461. Has the volume of traffic been the same? Yes. I am now speaking of actual returns. Had we taken the same average number of trucks per train for the previous fourteen and a half months, we should have needed 1,033 more trains.
2462. And that makes a saving of what? £8,200.
2463. The cost of cutting out the Lapstone Zigzag, you said, amounted to £40,000? I think that was about the cost.
2464. Assuming it to have been £50,000, the interest at 4 per cent. per annum would be £2,000, so that the actual saving would be £4,780 per annum? Yes; we should have to spend that amount more if the Zigzag had not been cut out.
2465. You are quite clear about these figures. You can be under no misapprehension in stating that the country benefits to the extent of £4,780 per annum after providing interest on the cost of cutting out the Zigzag? Yes. In my office I have a record showing the number of trucks taken by every train going over the line.
2466. And you have worked out the figures in detail? Yes.
2467. Now let us pass to the Commissioners' second proposal. You are aware that that proposed line would do away with the existing line between the 85 and 94 miles, substituting 8 miles of new line with a grade of 1 in 60;—have you estimated what would be the saving on that line? Yes. My figures are similar to those handed in by Mr. McLachlan.
2468. You estimate that the probable saving will be £15,587 per annum? Yes.
2469. Were you present when the estimate was being discussed by the officers of the department? Yes.
2470. Did you take into consideration the advantage which would be gained by passing a larger number of trucks over a grade of 1 in 60? No. We have put down the load as the same in each case.
2471. But on the new line you could take a larger number of trucks than on the No. 1 line? Certainly,
2472. How many more? Eight more a load.
2473. Would there be any advantage gained by taking forty-eight trucks over the Commissioners' No. 2 line instead of forty trucks over the No. 1 line? No; because we consider forty trucks the maximum load for a train coming over the mountains. If we took forty-eight trucks over that particular piece of line we should have to take off eight of them at Katoomba, which, if we were carrying live stock, would not do. We endeavour, as far as possible, to get a ruling load from one point to another, and we have taken forty as the ruling load for that section.
2474. What is your maximum load on the up journey as far as Eskbank? Thirty-five from Bathurst to Eskbank with the assistance of a push-up engine from Wallerawang to top of Marrangaroo Bank.
2475. Do you never bring more than thirty-five trucks to Eskbank? Yes; we have brought up as many as thirty-eight and forty-one trucks from Wallerawang to Eskbank.
2476. Then what advantage do you hope to gain by being able to take forty trucks from Eskbank to Penrith? We can always get coal at Eskbank, so that if we brought thirty-five trucks of wool from Bathurst we could make up our load at Eskbank with five trucks of coal.
2477. In making up your estimate have you confined your attention to the traffic from Eskbank? Yes; nothing west of Eskbank has been taken into consideration.

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2478. You have not taken credit for the traffic right through? We have not taken credit for a truck beyond Eskbank.
2479. You estimate that you will always have a load of forty trucks over the mountains? Yes.
2480. Therefore it will be no advantage to be able to take forty-eight trucks over any particular part of the line? That is so, because we should only have to detach them further on.
2481. If the Commissioners' No. 2 proposal were adopted you could take forty-eight trucks from Eskbank to Katoomba? Yes.
2482. Would there be any advantage in doing so? There would be very little advantage?
2483. Then there would be no great advantage in getting a grade of 1 in 60 through the tunnel instead of a grade of 1 in 50? There would be an advantage, because there would not be so much pulling for the engine to do. It is better to have a 1 in 60 than a 1 in 50 grade if you can get it.
2484. Assuming that the curves on the Commissioners' No. 2 proposal are 15 chains radius, which do you think would be the better for traffic purposes—the No. 1 proposal or the Commissioners' No. 2 proposal? If we confine ourselves to loads of forty trucks, I would prefer the No. 1 proposal, because of the shorter distance.
2485. For purposes of traffic, which do you think would be the better? The No. 1 proposal.
2486. Will you explain why? Because it would mean a saving in distance, and to the down traffic the tunnel would be no disadvantage. The little disadvantage that it would be to the up traffic would be more than counterbalanced by the advantage it would be to the down traffic.
2487. How many trucks do you think you could take through the tunnel on the No. 1 route without the help of a push-up engine? I have no hesitation in saying that we can take forty-five, but forty would be our load. I have been up the bank from Dargan's Creek where there are S-chain curves, and got over the summit of the hill, with forty-eight trucks, at a speed of nine miles an hour.
2488. At Katoomba you split the train? I am speaking of a trial train which was taken over the line at the time of the Baldwin engine inquiry.
2489. *Mr. Ewing.*] By a Baldwin engine? Yes.
2490. *Mr. Humphery.*] What is your estimate for the saving occasioned by dispensing with push-up engines on the Zigzag? £2,345.
2491. You have taken that into consideration in your estimate? In estimating the Commissioners' No. 2 proposal I have taken credit for £2,345, but I have only taken £1,500 in estimating the saving in connection with the No. 1 proposal, allowing £800,800 for the services of push-up engines.
2492. What would be the saving on the No. 3 proposal, crediting it with all the items comprised in the revised estimate of the saving on the No. 1 proposal? £15,100.
2493. In round figures, £3,000 less per annum than on the No. 1 proposal? Yes.
2494. Have you taken into consideration the additional interest which would have to be met on the No. 1 proposal? I do not know the estimated cost of the No. 3 proposal.
2495. Then you have not taken it into consideration? No.
2496. Supposing the difference in cost was £60,000 in favour of the No. 3 proposal, the interest upon which would be £2,400 a year, the actual annual saving upon the two lines would be almost the same? Yes.
2497. Assuming this to be the case, which would be the better line for traffic purposes? I do not see much difference between Mr. Deane's and Mr. Suttor's line, so far as the amount of saving of money is concerned.
2498. But take Mr. Foxlee's line? I think it is the best.
2499. How is it better than the No. 3 line? Because there is the saving in distance.
2500. But have you not taken that into consideration in your estimate? Yes.
2501. Where then does the superiority of that line come in, seeing that you have already taken full value for the saving in time? By the increased saving of train miles.
2502. Leaving out the advantage in distance, because you have already taken credit for it, in what other respects do you consider the No. 1 proposal superior to the No. 3 proposal? In no other respect.
2503. Then, so far as savings go, the No. 1 proposal possesses no advantages over the No. 3 proposal? No.
2504. Therefore, the Committee may regard the two lines as on the same footing in that respect? Yes.
2505. *Mr. O'Sullivan.*] Do I understand that you have added the consequential saving already referred to to your estimate for the No. 3 line as well as to your estimate for the No. 1 line? Yes; all the estimates are on the same basis.
2506. What did you estimate the saving on the No. 3 line before? I did not give any figures, I confined myself to the No. 1 proposal.
2507. In making your calculations, have you taken into consideration the interest on the cost of that portion of the original line which will be rendered useless? Yes, in our earnings. We do not propose to reduce the earnings. Assuming that we are now paying a certain sum for interest charges, and adding £8,000 to that sum, we still get a saving providing the working expenses are reduced, as shown in our estimate. I do not know what else we have to consider.
2508. But you did not touch the question of the money lying idle? I do not think that has anything to do with it.
2509. It seems to me that you and your colleagues are not taking the interest on the cost of the Zigzag into account? No.
2510. *Chairman.*] Because the earnings of the line will meet it? Yes.
2511. *Mr. O'Sullivan.*] In giving an answer to Mr. Humphery in regard to the saving effected by the construction of the Lapstone tunnel, you made no allowance for the interest on the cost of the original Zigzag? No; we only take the new interest, which we put against the reduced expenditure.
2512. In speaking about the Commissioners' No. 2 proposal, had you something like definite data to go upon? Yes; we have been furnished with certain information. I was told that that line would have a grade of 1 in 60, though I have not seen any sections or plans.
2513. The plans have not yet been worked out, and so far as we can gather, the cost of the line is a mere approximation? I have not seen the plans, sections or estimated cost.
2514. *Mr. Davies.*] The only way in which you appear to be able to reconcile your evidence of to-day with that of a fortnight ago is by saying that you have discovered that in running trains through from Eskbank to Penrith, the saving is larger than if you only take the deviation into consideration? Yes; we take credit for increasing the train loads as far as Penrith.
2515. Had you not the same information before you when you last gave evidence as is now in your possession? Yes; but I then confined my remarks to the saving that would be effected between Bell and Eskbank. I did not take any consequential saving into account.

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2516. Did not the officers who prepared the first statement meet to prepare the new statement? Yes.
2517. They had the same information at their disposal on the first occasion as was before them the day before yesterday? Yes; they had the same figures to go upon.
2518. Whose idea was it to step out of the ring and include the running as far as Penrith? I do not know whose idea it was; but the suggestion was made that we should take credit for the running right through.
2519. Would not the same principle apply if you went as far as Parramatta? No; because beyond Penrith we take on another ten trucks.
2520. By reason of the easier grade between Penrith and Parramatta? Yes.
2521. During the time you have had charge of the Western line, have you had occasion to make representations to the Commissioners about the road over the mountains not being equal to the traffic? Yes.
2522. When did you make those representations? Attention has been drawn to the congested state of the traffic on several occasions, and I have had diagrams prepared showing how it is congested.
2523. What is the greatest delay which has taken place? I could not say without looking at the books, but there have been serious delays—whole hours.
2524. But is it not usual to have such delays when trains have to meet? There are delays where trains have to meet, but, where there are several trains meeting one another, if one train loses time, it puts all the others out. I have a diagram here showing the working of the trains on this line.
2525. Could not the Commissioners prevent that congestion by putting in sidings? That has been done.
2526. Where? At two or three places. An additional crossing-place was put in at Linden, though I cannot say if that was done since the Commissioners came here. There have also been additional crossing places put in at Woy Woy, Wyee, and other places to prevent delays.
2527. Have any new sidings been put in on the mountains? I cannot recollect that any new sidings have been put in there.
2528. Would it not facilitate the traffic very much if additional sidings were put in there? No doubt shorter sections on some parts of the line would facilitate working.
2529. Would it not very much assist the traffic and prevent delays on the mountains? No; for the simple reason that we are tied up by the Zigzag. When we get through there we are alright; but we cannot get the trains through there easily.
2530. How long does it take the trains to go through after you have divided them? It takes on the average ninety minutes to get a goods train through from Bell to Eskbank.
2531. Is that two divisions or one division? One division. And when we can only get one down goods train through in an hour and a half, and there are a lot of up trains, you can see what trouble occurs.
2532. What is the greatest number of trains you have ever had to deal with there? We have had as many as thirty-five goods and passenger trains through in a day.
2533. But how many at one given time? Only one in each direction, because we block them back. We only allow one train on a section at a time.
2534. Then there is no delay at the Zigzag? Well, the delay is occasioned by the Zigzag.
2535. But do you not so regulate the starting of the goods trains that they will not interfere with each other? Yes; but a goods train may miss its crossing by 10 minutes, owing, perhaps, to a hot box or other cause.
2536. Might not that occur on the level? Of course; in fact such a thing as a hot box would be more likely to occur on the level, because there they travel more quickly.
2537. At what speed do the goods trains travel over the Zigzag from Eskbank? We are limited to 10 miles an hour down the middle road, and 5 miles an hour on the wings.
2538. You have represented that the wings are not sufficiently long for the trains to stand upon them. Is there no possibility of clearing that defect? The principal wing has been lengthened since the Commissioners took office. It is now a little longer than the bottom one.
2539. Will it hold forty trucks? No; but it will hold as many trucks as we can bring up with one engine. Twenty-seven is the maximum number of "D" trucks which we can bring up, or twenty-one stock trucks.
2540. How do you arrive at your estimated saving of £3,000 in wages;—how many men are employed on each goods train? Five on some and three on others.
2541. That would give an average of four men who would be employed an hour each. How many trains a day are there? Fifteen or sixteen goods trains, though we have had many more than that.
2542. But that would be the average, taking good and bad seasons? Yes.
2543. How much would those four men receive? They would receive about 6s. or 7s. amongst them.
2544. The passenger trains would not require so many men? No, I am not counting them; because the delay is not so great with them.
2545. Then it is upon the goods trains that you base your estimate of £3,000? Yes; we must also take into consideration the engine expenses, fuel, and so on—everything connected with the train. The wages are only a portion of the expense. During the time that is occupied in getting over the Zigzag, we might be running 12 miles towards Bathurst.
2546. Then you go into the capital cost of the rolling stock? I could not well give you the details which make up the estimate of £3,000. I take that as an approximate estimate.
2547. As an old railway official, do you approve of tunnels in connection with mountain lines? I do not prefer a tunnel to an open road.
2548. Are you of opinion that the No. 1 tunnel scheme would be a great advantage, as compared with the existing line? Yes, any of the schemes would be of great advantage as compared with the existing line.
2549. Would the No. 1 scheme be an advantage equal to £250,000? Yes, if you could save the interest on that by reduced working expenses.
2550. How would the tunnel scheme compare with the No. 3 scheme? I said that there is not much to choose between the two.
2551. Is the difference in grade an advantage? It would mean easier working.
2552. Would it be a great advantage? No; because forty would be our maximum load in either case.
2553. Do you consider that the present line, if properly maintained, will be able to take the mountain traffic with safety for some time to come? It will take it for a little longer; but ultimately the Zigzag must be cut out.

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2554. But it will meet the traffic for some years to come? I cannot say that. If there was a very large increase in the traffic, as there might be with good seasons and a development of trade, the Zigzag would occasion great inconvenience and expense.

2555. *Mr. Hoskins.*] As a matter of fact, the traffic this year has decreased? Yes; although we have never known busier months than September and October last.

2556. Do you mean to say that while a push-up engine is required to take a goods train up the 1 in 42 grade in the open, it would not be required in a tunnel $1\frac{3}{4}$ miles long, with a grade of 1 in 50? I am sure it would not.

2557. Why do you use a push-up engine on the 1 in 42 grade? In order to get up with a load of 40 trucks. Thirty trucks is the load laid down for a train with one engine on a grade of 1 in 42, as against 45 trucks on a grade of 1 in 50.

2558. But I suppose you know that in a tunnel the rails are more greasy than they are in the open, and therefore the adhesive power of the engine is less? I believe that that is so.

2559. As there is only a difference of 8 feet between a grade of 1 in 42 and a grade of 1 in 50, do you not think that if a push-up engine is required on a grade of 1 in 42 in the open it would be required on a grade of 1 in 50 in the tunnel? I do not think so. We only propose to take forty trucks through the tunnel, which is five trucks less than the load laid down for a grade of 1 in 50.

2560. How many trains go over the Zigzag in a day, including passenger trains? We have had as many as thirty-five.

2561. Have you had experience in the working of railways in other countries besides this? No.

2562. What induced you and other officers of the department to confer together after having already made a statement to the Committee? I was requisitioned by the Secretary in the usual way to attend a conference to discuss this matter.

2563. Was any reason assigned? Yes; to furnish details of saving for the information of this Committee.

2564. Are you prepared to admit that the estimate you formerly gave was unreliable? It was quite reliable so far as it went; but we took no credit for the consequential saving to which I have referred.

2565. If the Zigzag were dispensed with, one engine would take forty loaded trucks from Eskbank to Penrith? Yes.

2566. Is the Zigzag the only obstacle in the way of that. Are there no other steep gradients? No.

2567. Is there not a steep gradient between Mount Victoria and Katoomba? Yes; a grade of 1 in 55.

2568. Are not engines frequently required to help trains up there? We have had trains stuck up there. It is what they call Soldiers' Pinch.

2569. Is it a short or a long grade? A short grade.

2570. Then if the Zigzag were dispensed with, a train of forty trucks might still be stuck up on the mountains? No, because we should use bigger engines. Now, owing to the length of the trains being limited we use small engines. We have never been stuck up with a big engine.

2571. Where do you use your large engines? Some of them on the mountains, some between Bathurst and Dubbo, and some between Eskbank and Bathurst.

2572. Do you not use them between Eskbank and Penrith? Only a few of them. It has not been economical to use them there, because the loads have been limited owing to the Zigzag, and we could not get full value out of them.

2573. How is it that the department saves £4,780 a year by dispensing with the Lapstone Zigzag, seeing that there is still a grade of 1 in 33 there? That is gained on the trains going down hill.

2574. There is nothing gained on the trains going up hill? About three trucks a train. We have increased the average train load from twenty-four to twenty-seven and three-quarter trucks.

2575. *Mr. Trickett.*] Is there any way by which you can get at the approximate earnings on the line between Dargan's Creek and Eskbank? I do not know. All those accounts are kept by the accountant. I think he keeps the section between Penrith and Bathurst distinct.

2576. In reply to a letter sent at my instigation to Mr. McLachlan asking for these particulars, that gentleman has entirely shelved the question? I believe the accountant keeps the earnings between Penrith and Bathurst distinct, and from that you could find out the average earnings for 11 miles.

2577. *Mr. Neild.*] When last examined you stated that the reduction in the number of goods trains, if the deviation were made, would be 3,276, but the secretary to the Railway Commissioners puts it down at 3,044;—how does that come about? In the first place I simply took into consideration the average loads taken by small and big engines, but when the Zigzag is cut out, we shall use big engines almost exclusively.

2578. You also stated that the saving in train mileage would be 14,950 miles, it is now stated that the saving would be 17,647 miles? By increasing the train-loads from thirty-five to forty trucks we make a saving in mileage and number of trains.

2579. While you show 200 trains less, you show a saving in mileage of nearly 3,000 miles? Yes. Since fewer trains will be required, we shall save so many more miles of running.

2580. I suppose the alteration has been due to this special committee meeting? Yes.

2581. While there is this saving in connection with goods trains, there will be very little saving in connection with passenger trains? We shall not be able to reduce the number of passenger trains.

2582. I understood from your answer to Mr. Davies, in connection with the item of £3,000 appearing on your list of savings, that between £1,500 and £1,600 will be for wages, and the rest will be saved in coal, rough the non-use of engines now employed? Coal form part of the saving, as well as stores, and the non-use of the engine.

2583. Is that a fair estimate;—is there not a very large number of engines necessarily in depot throughout the country? Yes; but, if the Zigzag is cut out, we shall be able to do more work with present engines.

2584. In reference to the meeting which has been referred to, did you not set to work to swell your previous estimate? No.

2585. Was that not the result of the meeting? Yes.

2586. What was the purpose of the meeting, if not to try to make the estimate larger? A memorandum came from the Committee asking, I understand, for certain particulars and details, and we were called together to go into the details and show every saving that could be effected.

2587. What is the difference between the load taken over the Zigzag by the larger and the smaller engines? The larger engines take thirty trucks and the smaller engines nineteen trucks.

2588. Does it not take more to run a larger than to run a smaller engine? Yes, there is an extra fireman.

2589.

- H. Richardson, Esq.
4 April, 1894.
2589. Have you made allowance for that? It is included in the 4s. 8d. per mile.
2590. Is that a fair way of doing it, considering the extra fuel and the extra wages which will have to be met? I think 4s. 8d. is a fair average right through.
2591. You are putting the possible earnings of the big engine against the present earnings of the little engine, and yet you do not take into account the extra man and the extra fuel required by a big engine? There is an additional fireman employed on the big engines, but this cost is included in the 4s. 8d. per mile.
2592. *Chairman.*] Can you give us any idea as to how long it would take an engine to run from the bottom points to Dargan's Creek—2 miles 53 chains—over a grade of 1 in 50? From nine to ten minutes.
2593. And how long would it take to run over the No. 3 route—4 miles 55 chains—with a grade of 1 in 60? It ought to be done in about five minutes more.
2594. Would it take five minutes more in view of the fact that the grade would be flatter? Yes.
2595. Do you not think that an engine would take a load over the longer but flatter route in about the same time as it would take it over the shorter but steeper route? It would not do the longer journey in the same time as the shorter.
2596. You told us just now that the maximum number of trucks taken from Katoomba to Penrith was forty. Was that maximum fixed before the goods trains were provided with continuous brakes? No.
2597. It was fixed after the continuous brakes came into use? Yes.
2598. With a full knowledge of the power of those brakes, the Department came to the conclusion that forty trucks should be the maximum train load? Yes; the matter has been very carefully considered. Forty trucks is considered the maximum for safe working.
2599. How many sections are there between Sydney and Bourke? From Bourke to Narramine I have taken a load of eighty trucks; but we can only bring fifty from Narramine to Dubbo, and thirty-one from Dubbo to Bathurst. The ruling grade there is 1 in 40.
2600. What do you take from Eskbank to Penrith? Twenty-nine and a half is the average load, but we require a push-up engine as far as the Clarence tunnel.
2601. Would the wings on the Zigzag allow you to increase the length of the trains between Eskbank and Katoomba? Yes; we could take as many as forty-five trucks on them by dividing the train at bottom points.
2602. Then your limit is the pulling and pushing power of the engines? Yes; but the trains are cut in half at the bottom of the Zigzag, and sent up in two divisions because the wings will not hold more than twenty-seven trucks.
2603. Will you kindly furnish a statement to the Committee showing the total tonnage of goods and the number of passengers carried in 1889 over the Western line, and the same information for last year? I think I can get it, though my books will not show the 1889 traffic.
2604. Would the Commissioners annual reports give the information? No; they only show the tonnage from each station. Bathurst might be shown as sending away 10,000 tons, but of that traffic only 1,000 tons might go over the Zigzag. I will obtain the information if it can be obtained.
2605. If you can, will you make out the return for the traffic between Penrith and Eskbank, both ways? Yes.
2606. *Mr. Neild.*] You told Mr. Hoskins that last year there was a decrease in the traffic. Under those circumstances is there any pressing necessity for this work? I think so. I hope we shall get a revival of trade shortly, and it must be remembered that the work will take a considerable time to complete.
2607. How has the reduction in traffic come about chiefly—in coal? The mineral traffic has fallen off. The Commissioner in to-day's paper points out that the falling off has been in the mineral and passenger traffic.

THURSDAY, 5 APRIL, 1894.

Present:—

JACOB GARRARD, Esq. (CHAIRMAN).

The Hon. WILLIAM HENRY SUTTOR.	THOMAS THOMSON EWING, Esq.
The Hon. JAMES HOSKINS.	WILLIAM CHANDOS WALL, Esq.
The Hon. FREDERICK THOMAS HUMPHERY.	WILLIAM McCOURT, Esq.
The Hon. JOHN DAVIES, C.M.G.	JOHN CASH NEILD, Esq.
The Hon. WILLIAM JOSEPH TRICKETT.	EDWARD WILLIAM O'SULLIVAN, Esq.
	CHARLES COLLINS, Esq.

The Committee further considered the proposed Deviation to avoid the Lithgow Zigzag.

William Thow, Esq., Chief Mechanical Engineer, Department of Railways, sworn, and further examined:—

- W. Thow, Esq.
5 April, 1894.
2608. *Chairman.*] I understand that since you were last examined before the Committee the heads of various branches of the Railway Department have met in conference to review the estimate of the probable saving on the proposed deviations? Yes; there has been some further consideration of the question.
2609. The saving now totals £18,094? Yes.
2610. *Mr. Davies.*] How do you reconcile the present estimate of £18,000 with that of £10,000 which you gave us about a fortnight ago? When first we considered the saving that would be effected by cutting out the Zigzag we confined our inquiry to what would be saved between Eskbank and Bell, and it was only after that estimate was called in question that we recognised the fact that the employment of longer trains would cause an economy between Bell and Penrith. That economy would apply, of course, to any scheme which would cut out the Zigzag. Our first object was to compare the deviations, in order to ascertain from them the maximum economy obtained. There can be no doubt whatever that if the Zigzag was cut out, not only would we be able to bring longer trains from Eskbank to Bell, but we should also be able to take them on to Penrith, and the additional saving which will thus be effected is shown in the last two items in the revised estimate.
2611. Two thousand two hundred and fifty-three pounds will be saved between Bell and Katoomba? Yes. That amount would be saved on the up journey chiefly.

2612.

- 2612 I want to know how you have made up the item of £3,000, the saving of overtime in the wages of drivers, guards, and firemen? I think I explained when last examined that that is already in the 4s. 8d. a train mile, but the work being located in this particular place we thought it only fair that cognizance should be taken of the saving of time, and that £3,000 in addition would be a proper amount to represent the economy derived in that way. W. Thow,
Esq.
5 April, 1894.
2613. It is only a representative figure? Yes; it is not an estimate of which we could give details. Looking at the whole question, with what figures we had to guide us, we thought that £3,000 would be a fair sum to put down for the saving in time, due to a shorter continuous run.
2614. That is for overtime? The overtime would be reduced, because trains would be able to go through more quickly than they do now. The Zigzag might be compared to the neck of a sand-glass—we have to dribble the traffic through it because of the awkwardness of the road. If the Zigzag were cut out we should get our traffic through sooner, and should save a good deal in the wages of men, engine fuel, and other waste that now takes place. That figure is only approximate; it was not arrived at by detailed investigation. It is not so accurate as the other estimates, which have been based upon the cost of train mileage, which is saved by taking the number of waggons hauled in any one year and dividing them by the number in the train.
2615. Do you take loaded and unloaded trucks together? We reduce them all to loaded waggons; that is, if there are a number of empties we consider them as a less number of loaded trucks.
2616. Has your attention been called to the Commissioners' No. 2 scheme? Yes.
2617. Are you in possession of the information which Mr. Foxlee has given to the Committee? I had the matter explained to me verbally.
2618. You have seen no plans or detailed information? No. I saw a hand-sketch showing the direction in which it was proposed to take the line.
2619. In your new estimate do you propose to dispense with any more push-up engines, or do you retain the same number of push-up engines? We reduce our estimated cost of push-up engines from £2,345 to £1,500.
2620. That is the cost of one engine? A little more than that.
2621. Do you propose to use more than one such engine? With the No. 1 scheme we should require the services of a push-up engine as far as the mouth of the tunnel.
2622. At present you use three push-up engines? Some days we use more, and on other days less. A little more than three is the average.
2623. A Baldwin engine would take forty-two loaded trucks? We have allowed for their taking forty trucks. They could really take more, but we take forty as a fair load.
2624. On a grade of 1 in 50? Yes. Their load is tabulated as forty-five trucks between Clarence and Bell, where there is a grade of 1 in 50. When we have stock-trucks or coal-waggons we take fewer than forty-five. Forty is a fair average.
2625. What would be the gross tonnage of forty loaded trucks? About 350 or 380 tons.
2626. What number of trucks could a Baldwin engine take over the Zigzag? The load is limited by the wings. I think it is thirty trucks for a Baldwin.
2627. Would it be possible to extend the wings to take a larger number of trucks? I daresay it would be possible; but the load would not be increased very much. I think thirty-three trucks would be the longest train that you could have there, and it would scarcely be worth while to go to heavy expense for so small an advantage.
2628. What would be the gross tonnage of thirty loaded trucks? About 250 to 280 tons without engine and tender.
2629. The heavier load which you could take would be the main advantage obtained for cutting out the Zigzag? That would be the main advantage.
2630. What number of trucks do the Baldwin engines take at the present time from Bathurst to Eskbank? The loads vary from forty-five to thirty-one to suit the grades.
2631. Is there a larger number of trains composed of thirty trucks coming from the west to Eskbank than of trains composed of forty-five trucks? The loads I have given you are what the engines can take; but, in practice, I think they average about thirty-five.
2632. If you broke up a train of thirty trucks to take it over the Zigzag, it would make it very small? We only take twenty-two trucks through at a time by one engine; a longer train has to be divided over the middle portion of the Zigzag.
2633. But supposing a train containing thirty trucks came from Bathurst to Eskbank? Then we should break it up and haul twenty-two vehicles by the train engine, and the balance by the push-up engine over the middle portion of the Zigzag.
2634. How many trains come from the west in a year containing only thirty trucks? That I could not tell you; it does not come before me in any way. The Traffic officers could give you the information. All we do is to tell them by our tables what loads they must not exceed, and we undertake to run the trains to time if those loads are not exceeded. They are quite justified in loading up the engines within our limits; but I am not prepared to tell you what loads they bring.
2635. *Mr. Hoskins.* Is not thirty trucks an average train load in the western district, except during the busy season of the year? I do not think you can look at it in this way. The economy is effected by putting a number of short trains together, and drawing them with one engine.
2636. Do you get a sufficient number of loaded trucks from the western district to enable you to provide forty-truck trains? Undoubtedly we do. There is nothing to prevent us from bringing any number of waggons in one train, if by doing so we can save money. There is nothing to compel us to run a certain number of trains, so long as we bring the waggons through to Sydney that are intended to come.
2637. Is not thirty trucks considered an average train load upon the mountains? I should think that on the average thirty trucks would be a very good train load; but we are at present working with a number of light engines. If we had the convenience of a straight run, we could put heavy engines on the road and reduce the number of trains.
2638. How many of the heavy Baldwin goods engines have you? Twenty.
2639. And they will take thirty-five trucks up these inclines? The heavy Baldwin engines would take forty-five trucks up a grade of 1 in 50.
2640. Looking at the fact that the inclines on the Zigzag are not so severe as some in other parts of the line, would twenty engines suffice for the goods traffic? I think we could work that portion of the traffic with twenty Baldwin engines.
- 2641.

- W. Thow, Esq.
April, 1894.
2641. I think I understood you to say that if the Zigzag were dispensed with, the saving would be on the up traffic rather than on the down traffic? Yes; there would not be so much saving on the down traffic, though at present the traffic is delayed on both journeys.
2642. If your large engines can take thirty loaded trucks up the Zigzag safely, is not any delay that may be occasioned similar to that which is occasioned in connection with the loops which you have on the western line;—the delay in transit on the western line is not occasioned solely by the Zigzag? A certain amount of it arises from the system of working the line by means of loops; but the Zigzag occasions more delay than any of the loops.
2643. How would the delay occasioned by the Zigzag compare with the delay which takes place on the loops? I should think that the delays at the Zigzag are two or three times as long as those on the loops.
2644. You cannot give us an idea of the average delay caused by the Zigzag? I cannot; but it has been estimated that if it were cut out we should save about an hour on the average per train.
2645. Does it take an hour to draw a train over the Zigzag with a Baldwin engine? The delays occur at the end of the Zigzag.
2646. If a Baldwin engine can take thirty trucks over the Zigzag would there be any delay between Eskbank and the top? Yes. The delays which we have estimated for are constantly occurring.
2647. Are there not heavy gradients on the line between the top of the Zigzag and Sydney? Yes; there is a grade of 1 in 50 near Bell, and a grade of 1 in 55 between Mount Victoria and Blackheath. Those are the two steepest places as far as Katoomba.
2648. Is it not a fact that you have occasionally to use push-up engines on those banks? No. Occasionally we send our engines up to Bell to pick up waggons going towards Bathurst; but we do not use push-up engines beyond Clarence siding unless there is an engine returning, and we can make use of it in that way.
2649. Do you believe that if the No. 1 project were adopted, an engine could draw forty-two trucks through the tunnel without the assistance of a push-up? I think the heavy consolidation engines would easily take forty trucks through the tunnel. The only difficulty that could arise would be from the slipperiness of the rails caused by the tunnel being wet; but I do not think it would be wet, and there would therefore be no necessity for push-up engines.
2650. But is it not a fact that the rails in tunnels, and especially in long tunnels, become greasy? That is not so in all cases. For example, in the Woy Woy tunnel, which is a long one, the rails are perfectly dry, the reason of that being that the tunnel was made for a double line, and the ventilation is very good.
2651. *Mr. Neild.*] Your second estimate is based upon the supposition that, in the event of the Zigzag being cut out, you would be able to use Baldwin engines? Yes.
2652. How many men are employed on the engines now in use? Three men on the Baldwin engines and two men on all other engines.
2653. Have you taken the additional man into consideration? It would be only a very small item—simply the wages of a fireman at 8s. a day.
2654. You have twenty Baldwin engines;—that would make the cost of the additional man equal to £1,200 a year or even a little more? Perhaps so. Of course if one went into very minute detail I believe the saving could be shown to be very much greater than it now appears to be. There is not the least doubt that the widening of the neck, through which the traffic now has to dribble, would effect a saving on all the western traffic.
2655. Your estimate of savings includes an item of £942, yet a little matter of £1,200 or £1,500 you have left out of consideration. Surely if it was worth while to account for £900, £1,200, or £1,500 cannot be considered an infinitesimal amount? That amount might be considered.
2656. Why should the saving between Katoomba and Penrith be estimated twice over, as it appears to be in the statement handed in by Mr. McLachlan. He puts down £2,253 as the saving between Eskbank and Penrith, and then £4,240 as the saving between Katoomba and Penrith? The saving in the first case appears to be shown as between Eskbank and Penrith; but it is really on the train mileage between Bell and Katoomba.
2657. That means that you are going to make up the train at Katoomba? No; the same train will run right through.
2658. But I see that you have estimated that with a saving of 568 trains between Eskbank and Katoomba a saving of 9,656 train miles would be gained, while between Katoomba and Penrith there would be a saving of 18,176 train miles, leading one to suppose that the saving in trains would be about 1,000? The additional saving in train mileage is due to the longer distance between Katoomba and Penrith as compared with the distance between Bell and Katoomba.
2659. Why should the estimate have been made up in two sections in this way? I do not know. It might just as well have been made one item.
2660. You speak of an hour being saved by doing away with the Zigzag;—how much of that hour is taken up in running now, and how much in waits? Roughly, about 40 minutes is occupied in running and the rest of the time is taken up in waits at either end of the section—at Bell and at Lithgow.
2661. Do the two sections of a train follow each other at an interval of twenty minutes? We should save a great deal by not having the Zigzag. The bulk of the saving would be gained by being able to run right through instead of having to stop our trains three different times.
2662. How soon after one division of a train leaves Bell does the other follow it? The second division starts as soon as the first division gets off the section.
2663. What is the length of the section? The section is the distance between Bell and Clarence. I think that is the arrangement.
2664. Does safety require that there should be such a long interval between the trains? I think so. It is only on the ground of safe working that such a system would be adopted.
2665. Then forty minutes is occupied in traversing the distance between Clarence siding and the lower points? No. I was referring to the journey from Bell to Eskbank. Most of the time is lost in zigzagging up and down, and in having to stop on three unnecessary occasions.
2666. You refer to the detention on the wings? Yes.
2667. *Mr. Wall.*] What is the steepest grade between Penrith and Katoomba? One in 30.
2668. Is that on the Lapstone Hill? The tunnel there is on a 1 in 33 grade, and there are several other pieces of it on each side of the tunnel.
2669. Is there not a minute in the Department regulating the number of trains that are to go down the Lapstone Hill? I do not remember such a minute.

2670. What is the ordinary train which an engine can take down a grade of 1 in 33? Our present practice is to take thirty-five trucks on that grade. W. Thow,
Esq.
2671. Are you aware if a minute was in existence prior to the Commissioners taking office limiting the number of trucks to be taken down there to fifteen? No; but prior to the cutting out of the Lapstone Zigzag, the limit was twenty-two, because the wings would not hold a longer train. Since the Zigzag was cut out, we have increased the load to thirty-five trucks. April, 1894.
2672. The limit is imposed now by the grade instead of being checked by the Zigzag as heretofore; otherwise you might bring down any length of trains? It is limited by our brake-power. Then, too, there is a small bank which we have to climb 16 miles after leaving Katoomba which imposes a check. At the present time all our waggons are not fitted with the continuous brakes; we have only those brakes on some of them.
2673. What would be a reasonable limit on a 1 in 33 grade, if you had continuous brakes, and maintained the present rate of speed? There are a great many things that enter into the handling of trains besides the mere question of brake-power. Our idea is that there would be no difficulty in working a train of from forty to forty-five waggons from Katoomba, if the present Zigzag were removed, and we could bring them up to Katoomba.
2674. That is, providing that continuous brakes were fitted to the trains? Provided that the brake-power was what we intend that it shall be.
2675. Is it the intention of the Department to so improve their brake-power as to enable them to bring forty-five trucks down the Lapstone Hill? I think there would be no difficulty about that.
2676. I want to know if it is the intention of the Department to so regulate their brake-power as to allow it to be done? Yes; but we could not do it just now.
2677. You intend to do it if the Zigzag is cut out? I think so; whatever load we take to Katoomba we shall bring on to Penrith.
2678. Will not the number of trucks you bring down be regulated by your brake-power? The intention is that if we take forty trucks from Eskbank to Katoomba, we shall bring them on to Penrith.
2679. But, in a report which has been submitted to us, it is stated that you will bring forty-five trucks from Eskbank to Penrith;—is it not forty trucks? My evidence was to the effect that the engines were equal to bringing forty-five trucks; but that we had estimated for forty trucks.
2680. It is mentioned in this report that it is the intention of the Commissioners to use stronger engines—engines which will take a full load without assistance on a grade of 1 in 50? These are our twenty Baldwin engines.
2681. Are they running on this particular line at present? Some of them are, and some of them are running west of Bathurst.
2682. It is a pity that the evidence of the Department should be so conflicting;—we have been informed that these engines were not used here, although they are in possession of the Department? Some of them are now running between Penrith and Bathurst.
2683. And if the Zigzag were cut out, and you were to take the maximum load, it would be necessary to use these engines? Yes.
2684. The smaller engines would not give the results you require? No.
2685. The present statement of earnings has been compiled from the working of both large and small engines; but if large engines were used altogether, would that not make a difference in the returns? I do not think so, because, if we ran those engines to the top of the Zigzag, and coupled them to trains with forty trucks, which were waiting to go to Penrith, we should have to bring those trains up the Zigzag by means of the smaller engines, so that we should not gain anything like so much as one might suppose.
2686. Then, if you used the strong engines now entirely, you do not think any saving would be effected because of the disconnection of trains that would take place on the Zigzag? That is so. We should still feel the crippling effect of the Zigzag on the traffic.
2687. Could you give us an estimate of the total cost of the push-up engines now used between Eskbank and the Clarence siding? I think they cost about £2,345 per annum.
2688. If you bring a load from Eskbank to Clarence siding with the help of push-up engines, that entails a certain expense upon the Department which is represented by the fuel and other expenses in connection with the engine used and the loss of time? It would be quite impossible to give you an idea now of the value of the time required by working the big engines as you suggest. These engines at present bring a load through from Bathurst to Eskbank and come on to Penrith, and it would require a very careful estimate to ascertain what could be saved if we worked the big engines only between the top of the Zigzag and Penrith.
2689. If you used the stronger engines, you would have to use them right through to Bathurst? Yes; we should run them right through between Bathurst and Penrith.
2690. The obstacle in the way of using them now is the Zigzag? Yes; because they can only draw thirty waggons on the Zigzag.
2691. Why have you not taken credit in your estimate for the saving which would be effected by hauling larger loads between Bathurst and Eskbank? That might be done; but that saving would depend entirely upon whether we used a light engine to Eskbank or took a heavy engine right through.
2692. And you do not know whether it is the intention to use these engines right through to Bathurst, or whether an advantage would be gained by taking them right through? The advantage to be gained would depend entirely upon the requirements of the traffic; but there is no doubt that if the heavy engines were used between Eskbank and Penrith the saving which would be effected is legitimately expressed by the figures which have been given.
2693. *Mr. Collins.*] Have you seen any estimate in connection with the Commissioners' No. 2 scheme? An estimate has been made in reference to that scheme.
2694. Did you make it? No; I was not concerned in it, but I do not see anything in it that is not perfectly correct.
2695. Do you think that, from an engineering point of view, it would be better to construct that line than the No. 1 deviation? No doubt from an engineering point of view it would be a great advantage to cut out the grades of 1 in 42 and 1 in 50, and do away with the long tunnel.
2696. Therefore it would be an advantage to adopt the Commissioners' No. 2 proposal? Well, those advantages would have to be set off against the longer distance.
2697. Against the longer distance would have to be set the less cost in working? The working would cost less. 2698.

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5 April, 1894.

2698. Then, in your opinion, the Commissioners' No. 2 proposal is better than the Commissioners' No. 1 proposal? I prefer a line in the open, and it would be an advantage to cut out the grades of 1 in 42 and 1 in 50.

2699. *Mr. Ewing.*] Do you regard this as an urgent work? It is not urgent in the present state of the traffic.

2700. It is a work which can be done without for a year or two? Unquestionably. The traffic has not increased so materially as to necessitate the cutting out of the Zigzag, but whenever the Zigzag is cut out there will be a considerable economy in the working of the road.

2701. But you do not regard it as a specially urgent work at the present time? No; we can do without it, and continue to carry the traffic through as we have been doing.

2702. *Chairman.*] Is there anything else you wish to state? I think not.

2703. *Mr. Neild.*] Do the savings represented in the first item, and in the last item but one in Mr. McLachlan's statement overlap each other, or are they separate? The meaning of the last paragraph but one is that we shall be able to dispense with 563 trains, and multiplying that by the distance between Bell and Katoomba, it gives a saving of 9,656 miles. That saving is made between Bell and Katoomba, and it would have been better to have said Bell instead of Eskbank.

2704. So that the latter paragraph should read, "Practically between Bell and Katoomba 563 ordinary trains will be saved"? Yes.

PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS.

Deviation to avoid the Lithgow Zigzag.

APPENDIX.

A.

[To Evidence of J. Barling, Esq.]

PRECIS OF PAPERS RELATING TO THE PROPOSED DEVIATION ON THE GREAT WESTERN RAILWAY TO AVOID THE LITHGOW ZIGZAG.

It would appear that the proposal to construct a deviation on the Great Western Railway, to avoid the Lithgow Zigzag, was first prominently brought forward in the latter part of 1885, by Mr. W. S. Targett, who was then Member of Parliament for Hartley. On the 11th September, 1885, he asked the following question in the House—"When will a survey be authorised of the Great Western Zigzag to see if it is expedient to construct a tunnel from Dargan's Creek to Bottom Points?" To this Mr. Dibbs replied: "This survey will be carried out at an early date."

The matter was referred to Mr. John Whitton, the then Engineer-in-Chief for Railways, who, in a report to the Minister on the 16th of March, 1886, stated that the tunnel proposed from Dargan's Creek to the lower points of the Lithgow Zigzag would be about 2 miles in length, and, for a double line, would cost about £400,000. As, however, it would only dispense with $1\frac{1}{2}$ miles of incline of 1 in 33, and 2 miles 35 chains of 1 in 42, he did not think it would be judicious to incur so large an outlay for so small an improvement in the line.

Mr. Targett, by the Minister's instructions, was informed to this effect on the 3rd of April; but he was not, apparently, satisfied with the answer given, and, on the 7th of April, he addressed the Minister, stating that Mr. Dibbs had promised in the House that a survey should be made, and he urged that this should be carried out. Mr. Secretary Lyne, who was then Minister, on the 22nd of April, gave instructions for a survey to be made accordingly. In connection with the matter, Mr. Targett submitted a plan of a route for the deviation suggested by Mr. P. Finn, a surveyor, and a resident of the district. A survey was made, and the route selected was the same as that suggested by Mr. Finn; and Mr. Whitton reported to the Minister on the 29th of October respecting the matter, as follows:—"By the route suggested the length would be $8\frac{1}{2}$ miles and slightly in excess of the existing line. There would be, according to the surveyor's section, at least $2\frac{1}{2}$ miles of tunnelling, and quite 3 miles of an incline of 1 in 40, whilst the earth work quantities and the expense of constructing retaining-walls and viaducts would be excessive." "The proposed route," he added, "does not compare at all favourably with the line as constructed," and he recommended that no further expense should be incurred in the matter. Mr. Targett was furnished with a copy of Mr. Whitton's report; and the matter then appears to have been allowed to remain in abeyance for some years.

In October, 1890, Mr. E. B. Price, then acting as a Temporary Examiner of Public Works Proposals, was instructed to report on alternative routes which had been suggested for relieving the congestion of traffic on the Great Western Railway. In his report he dealt at length with the proposed line from Blacktown or Liverpool to Blayney, and also the line from Richmond to Eskbank, and amongst the conclusions he arrived at, were the following:—

- "1. That it is necessary to take steps to relieve the congestion of traffic on the mountain section of the Western Line.
- "2. That it would be more economical and better serve the interests of the country to duplicate the present track, and construct branches than to make either the Blacktown—Blayney or Richmond—Eskbank alternative lines."

This report was laid upon the table of the House and ordered to be printed on the 5th November, 1890.

On the 15th of March, 1892, Mr. H. Deane, who had succeeded Mr. Whitton as Engineer-in-Chief for Railway Construction, reported to the Minister that the Railway Commissioners were desirous of testing the possibility of connecting the Western Line at Dargan's Creek with the lower points of the Zigzag, traffic considerations rendering the cutting out of the Zigzag desirable if it could be done at a reasonable cost. He therefore asked the approval of the Minister to a thorough investigation being made into the matter by the surveyors of his Branch. The Minister, on the 1st of April, minuted that the matter was one entirely for the consideration of the Commissioners; but he added that should they be desirous of testing the practicability of a deviation, he had no objection to the Engineer-in-Chief carrying out the survey.

On the matter, however, being again referred to the Minister for approval to the expenditure of about £300, he ordered it to stand over, and in consequence, the surveyors who had been instructed to proceed with the work were recalled.

It should be here stated that Mr. J. P. Sharkey, who had been formerly employed as a surveyor in the Railway Construction Branch, put in a claim that he was the discoverer of the route in question, and urged that he should be given the work of carrying out the survey.

Mr. Deane, however, in regard to this claim, pointed out that Mr. Sharkey's contention could not be sustained, and referred to the matter having been brought forward by Mr. Targett, M.P., and reported on by Mr. Whitton in 1886, two years before Mr. Sharkey carried out the survey when he claimed to have discovered the route.

The information in the possession of the Department, appears to have been sufficient to enable Mr. Burge, the Engineer for Trial Surveys, to submit a scheme to the Engineer-in-Chief. On the 26th of April, 1892, he suggested two alternative proposals, one to start the deviation at about 93 miles 70 chains which would show a length of about 4 miles 42 chains, as against 7 miles 20 chains of the present line, thus effecting a saving of 2 miles 58 chains. This would involve a viaduct, short in length, but about 70 feet in height over Farmer's Creek, and also considerable tunnelling, the extent of which could not be determined until a survey had been made. The other line he proposed would start at 93 miles 30 chains, and would be about 52 chains shorter than the first one, and increase the saving in through mileage to 2 miles 70 chains. The main tunnel would however, be longer, and the viaduct over Farmer's Creek, though not so high, would be longer, being over a wider part of the valley.

A third scheme he proposed, was merely a continuation of the present line on from the bottom points through a tunnel to Dargan's Creek. Mr. Burge pointed out that the objection to all the routes was the great length of the main tunnel on a steep grade, and that it was impossible to predict which was the best without a careful survey of each. He also appended an estimate which amounted to £260,000.

A copy of this report was forwarded by Mr. Deane to the Railway Commissioners, and in so doing he stated that as the surveyors were withdrawn before any real work was done, he was not in a position to offer any opinion on the report.

On the 14th of April, 1892, a letter was received from W. O. Reynolds, trustee for M. A. Reynolds, stating that, in the event of the proposed deviation being constructed, they would claim damages to the extent of £20,000. The writer did not state the nature of the damage for which compensation would be claimed.

On the 24th November, 1893, the Railway Commissioners addressed a communication to the Minister for Railways, the Honorable John See, in which they stated that ever since they had been in office, the disadvantage of passing traffic over the Lithgow Zigzag had been continually before them, as well as the continual risk in the working consequent on trains loaded with passengers having to be propelled both up and down over the intermediate section of the Zigzag. The cutting out of the Lapstone Zigzag had so greatly facilitated the working, that they felt justified in asking the Government to

to consider the expediency of providing sufficient money to carry out a further alteration of the line to permit of the Lithgow Zigzag being avoided. The work, they stated, would in all ways be beneficial, and more than return interest on the capital expended. The scheme they proposed was one for leaving the existing line at a point near Dargan's Creek about 86 miles 45 chains, and proceeding by a route through cutting and tunnel north of the existing main line to the bottom points of the Zigzag, where the existing double line of railway would be connected with. This line would be 2 miles 53 chains in length, 1 mile 52 chains being in tunnel. They proposed that the line should be a double one because of the difficulty of properly ventilating so long a tunnel if only a single line were constructed. The grading through the tunnel would be a continuous ascending one from the bottom points to Dargan's Creek, of about 1 in 50, the existing line being on varying grades of 1 in 33 and 1 in 42. The 1 in 33 grade was, they pointed out, against trains going to the West, and extended from Dargan's Creek to Clarence siding, a distance of 1 mile 32 chains, and was a great obstruction to the whole of the traffic going from Sydney to the West. This would be entirely got rid of by their proposal and thus materially assist the working of the Western-going traffic.

They estimated the whole cost of the work at about £225,000, which at 4 per cent. would mean an annual cost of £9,000; but they estimated that in addition to the great facility to the working and the avoidance of the continual risk which now takes place, the expenses would be reduced by about £10,000 per annum, so that as a commercial investment the money would be well spent. The Minister for Railways referred the matter for the advice of the Attorney-General as to whether the work could be carried out without reference to the Public Works Committee. On the 28th of December the Honorable G. C. Heydon submitted his advising and stated that he had come to the conclusion that the work need not necessarily be referred to the Parliamentary Standing Committee on Public Works, and for this opinion he gave his reasons at length. The matter was referred to Cabinet on the 2nd January, 1894, and it was then decided that the matter should be referred to the Public Works Committee as soon as convenient. The necessary resolution was accordingly, in pursuance of this decision, submitted by Mr. Secretary Lyne to Parliament on the 25th of January, and duly passed. In the meantime the sum of £250,000 for the work was noted for placing on the Loan Estimates.

In a minute of the 8th of January, 1894, the Minister stated that the Cabinet had decided the work should be carried out by this Department; and he directed that the Railway Commissioners should be asked to forward, for the use of the Engineer-in-Chief for Railway Construction, the plans and sections they had taken in connection with the matter. A letter to this effect was accordingly addressed to the Commissioners for Railways on the same date.

On the 6th of January Mr. Deane, in accordance with the Minister's instructions, submitted a statement of the cost of the work on the existing line, between Dargan's Creek and the lower points of the Zigzag, the total cost shown being £167,004 1s. 4d., the length 5 miles 14 chains, giving £31,157, as the cost per mile. He also gave an estimate of what it would have cost at the time the line was made; had a direct line with a single-line tunnel been constructed in lieu of the Zigzag, the sum being £324,862 14s. 2d., and a double-line tunnel would, he stated, have cost £445,055 14s. 2d. He pointed out that these estimates were based on the prices actually paid for the work, which in those days were extremely high; and he also said, that, even if it had then been considered desirable to construct a direct line, he thought it doubtful whether any contractor could have been found in the Colony to undertake the piercing of so long a tunnel, tunnelling work not being by any means so easy a matter then as now. He showed that, by the adoption of the Zigzag, the saving effected at the time was £157,858 12s. 10d. for a single-line tunnel, and £278,051 12s. 10d., for a double-line tunnel, which sum, he considered, was sufficiently large to justify the adoption of the Zigzag, as was done.

On the 22nd of January, the Railway Commissioners forwarded, in compliance with the request which had been made to them, plans, sections, &c., in connection with the scheme which they proposed. They also forwarded a report from Mr. Foxlee, accompanying the plans, &c., in which, he stated, that the estimated cost of the deviation proposed by him was £225,000, exclusive of land and fencing. That the length of the proposed deviation was about 2 miles 53 chains, the ruling grade 1 in 50, and the sharpest curve 12 chains radius. The tunnel would have a length of about 2,840 yards. In forwarding the plans, the Commissioners wrote the following minute:—"As the scheme is one that has been devised and worked out in detail by Mr. Foxlee, the Commissioners think that he should be associated with Mr. Deane in the carrying out of the work."

With regard to this, Mr. Secretary Lyne minuted the papers as follows:—"Divided authority in such a matter as this would not do at all, and there is certainly some error regarding the 'complete devising and working out of the plans by Mr. Foxlee.' I have no doubt that Mr. Deane will consult Mr. Foxlee—if he considers it desirable—upon any special point that may present itself to him."

On the 18th of January, Mr. Deane addressed a minute to the Minister, pointing out that in his opinion the deviation proposed by the Commissioners should not be definitely adopted until further surveys had been made, and referred to a conversation he had had with the Minister a few days previously, when he mentioned how, by means of a spiral, the necessary tunnel construction could be spilt up and shortened, the cost lightened, and effective ventilation rendered possible. He forwarded a tracing showing the position of the line he suggested, the cost of carrying out which would, he said, probably not be greater than £130,000 as compared with £225,000 mentioned as the Railway Commissioners' estimate. He also stated that there might be other alternative lines with even greater advantages than the one he then suggested, and that he had sent Mr. Surveyor Kennedy to the spot to get further information in the way of levels. After the return of this officer he hoped to be in a better position to report on the whole question.

It should be here stated that a proposal to construct a deviation was received from Messrs. E. M. Munford and Company, their offer being dated 1st of January, 1894. They stated that they were prepared to carry out the deviation, make certain roads, &c., and receive payment in debentures. The Minister directed that they should be informed that whatever was done in connection with this matter would be carried out by the Government.

On the 22nd of January, Mr. Burge, Engineer for Trial Surveys, brought under the attention of the Engineer-in-Chief a scheme which he said would not only limit the maximum length of any one tunnel to 1,076 yards, but also, without involving additional length either to the existing railway or to the line proposed, would reduce the grade in the open to 1 in 50, making that the ruling grade, against the heavier traffic between the engine stations of Eskbank and Penrith of 1 in 42; and, in the tunnels to 1 in 60. He estimated that the cost of this line would be £214,000. He proposed to utilise the present Clarence tunnel, as well as the present line down to near the entrance of the new third tunnel, at 90½ miles, for the purpose of the new down line when the duplication was made, the line to join the second line in the third tunnel, this and the remaining three tunnels being double ones. Mr. Burge went on to say that the 1 in 33 grade at the east approach to the Clarence tunnel could be got rid of, if necessary, by a deviation which would not cost more than £15,000, so that £230,000 would provide a substitute for the Zigzag, giving a series of short, easily ventilated tunnels, considerably less also in total length than the tunnel on any direct line, and rendering for these reasons the whole work capable of much quicker completion; reducing the ruling up grade between Eskbank and Penrith to 1 in 50, and doing away with the 1 in 33 east approach to the Clarence tunnel. Mr. Burge was, he said, convinced that either this scheme or the one previously proposed by him would be the best solution of the question, and he urged that they might be further investigated.

On the 25th of January, Mr. Deane reported to the Minister that the exploration of the country which was being made by Mr. Surveyor Kennedy, proved the existence of more than one alternative route which might turn out to be equal to or better than the direct tunnel scheme proposed by the Commissioners; and he urged that the investigation of the matter by the Public Works Committee might be deferred for a month to enable full investigation to be made. To this the Minister replied that the Committee must fix its own time for the investigation.

On the 29th of January, the Minister instructed that another surveyor should be put on to the work in order that the plans might be ready for the Committee within a fortnight. Mr. Deane, in regard to this, again urged that as much time as possible should be afforded him for the investigation, as he was anxious that the Department should be in a position to advocate the best proposal possible.

Subsequent action in the matter is fully detailed in the statement and evidence of the Under Secretary for Public Works before the Committee.

5/3/94.

J. BARLING.

Al.

A1.

THE RAILWAY COMMISSIONERS TO MINISTER FOR RAILWAYS, PROPOSING THE DEVIATION.

Office of the Railway Commissioners of New South Wales, Sydney, 24 November, 1893.

To the Honorable John See, M.P., Minister for Railways,—

Lithgow Zigzag.

EVER since we have been in office the great disadvantage of passing traffic over what is known as the Lithgow Zigzag on the western side of the Blue Mountains, has been continuously before us, as well as the continual risk in the working, consequent on trains loaded with passengers having to be propelled, both up and down, over the intermediate section of the Zigzag.

The cutting out of the Lapstone Hill Zigzag, on the eastern side of the Blue Mountains, has so greatly facilitated the working that we feel that we are justified in asking the Government, when dealing with the question of expenditure in connection with public works, to consider the expediency of providing sufficient money to carry out an alteration of the line to permit of the Lithgow Zigzag, which is a great obstruction to the working of the traffic on the western side of the Mountains, being avoided. The work would in all ways be beneficial and more than return interest on the capital expended.

Various schemes for effecting this object have been under our consideration for a considerable time past; but the cheapest and best plan which we have had before us is one for leaving the existing line at a point near Dargan's Creek, about 86 miles 48 chains, and proceeding by a route through cutting and tunnel north of the existing main line to the bottom points of the Zigzag, where the existing double line of railway would be connected with. This line would be 2 miles and 53 chains in length, 1 mile 52 chains being in tunnel. It is proposed the line shall be a double one, because of the difficulty of properly ventilating so long a tunnel if only a single line is constructed. The gradient through the tunnel would be a continuous ascending one, from the bottom points to Dargan's Creek, of about 1 in 50, the existing line being on varying grades of 1 in 33 and 1 in 42. The 1 in 33 grade is against trains going to the West, and extends from Dargan's Creek to Clarence siding, a distance of 1 mile 32 chains, and is a great obstruction to the whole of the traffic going from Sydney to the West. This would be entirely got rid of by the proposal, and thus materially assist the working of the Western going traffic.

The estimated cost of the whole work is about £225,000, which at 4 per cent. would be an annual cost of £9,000; but it is estimated that in addition to the great facility to the working and the avoidance of the continual risk which now takes place, the expenses would be reduced by about £10,000 per annum, so that as a commercial investment the money would be well spent.

It may be pointed out that nearly the whole of the money would be expended in labour, as with the exception of the rails and machinery required for the work, the whole expenditure would be for excavation and construction.

There are several other smaller grades on different parts of the line and also some curves in the Blue Mountains, the cutting out of which would greatly facilitate the working; and we would be glad if the Government could see their way to obtain a vote from Parliament for the sum (including the £225,000 previously mentioned) of £250,000, on account of grades and curves.

The construction of the tunnel would occupy from eighteen months to two years, and therefore the expenditure of the £250,000 would be spread over a period of quite two years.

Attached hereto is sketch plan* showing the route of the existing line, and of the proposed line.

* *Vide plan.*

E. M. G. EDDY,
Chief Commissioner.
W. M. FEHON,
Commissioner.
CHARLES OLIVER,
Commissioner.

I shall be glad to be advised by the Hon. Attorney-General whether this work can be carried out without reference to the Public Works Committee.—J.S., 28/11/93. The Secretary to the Attorney-General.—F.K., 28/11/93. Submitted.—W.W.S., 30/11/93. This is a matter which should be reserved for my successor.—E.B., 9/12/93. Resubmit when new Attorney-General has been appointed.—W.W.S., 14/12/93. Resubmitted as requested.—H.M., 15/12/93. Opinion herewith on separate paper.—G.C.H., 28/12/93. The Under Secretary for Finance and Trade.—W.W.S., B.C., 29/12/93.

A2.

COST OF THE EXISTING RAILWAY BETWEEN DARGAN'S CREEK AND THE LOWER POINTS OF THE ZIGZAG.

Department of Public Works, Railway Construction Branch, Sydney, 6 January, 1894.

Subject :—Great Western Railway, Zigzag Deviation.

IN accordance with the Minister's instructions I have had the cost of the works on the Western line between Dargan's Creek and the lower points of the Zigzag got out as carefully as possible. The total is £167,004 1s. 4d., the length 5 miles 29.14 chains, giving £31,157 as the cost per mile. These figures may be taken as fairly accurate, although very great difficulty has been experienced in getting them out owing, in the first place, to the works being carried out as part of two different contracts, and from the fact that the measurement books have been lost.

I have further estimated the cost at which the direct line could have been made at that time between Dargan's Creek and the lower points, including a tunnel nearly 2 miles in length. The prices in those days were extremely high, and those used in the above estimates are taken from the actual ones paid; but I wish to point out that even had it been looked upon as desirable to construct this line, it is very doubtful if any contractor would have been found in the Colony to undertake piercing of so long a tunnel. Tunnel making in those days was not the easy affair it is now, as may be seen from the high price paid per cubic yard, for the Clarence tunnel, which is a short one, viz., £1.

The cost, then, of the direct line, with a single-line tunnel, would have been £324,862 14s. 2d., and a double-line tunnel which would, no doubt, have been declared necessary, owing to the necessities of ventilation, would have cost £445,055 14s. 2d.

It will thus be seen that the saving to the country by the adoption of the Zigzag was £157,858 12s. 10d., as against the single-line tunnel and £278,051 12s. 10d., as compared with a double-line tunnel, sums sufficiently large to justify the adoption of the Zigzag. At the present time the connecting line with double-line tunnel can no doubt be done for about £225,000.

The Under Secretary.

H. DEANE,
Engineer-in-Chief.

Copy may be forwarded for the information of the Railway Commissioners.—J.B., 9/1/94. Approved.—W.J.L., 22/1/94. Copy forwarded to the Secretary for Railways, 30/1/94. Mr. Deane.—D.C.M'L., (*pro* U.S.), B.C., 2/2/94.

B.

[To Evidence of H. Deane, Esq.]

LIST OF GRADES STEEPER THAN 1 IN 60, PENRITH TO DARGAN'S CREEK.

Against Down Traffic.						Against Up Traffic.	
1 in 30.	1 in 33.	1 in 40.	1 in 43.	1 in 50.	1 in 55.	1 in 60.	1 in 55.
m. c.	m. c.	m. c.	m. c.	m. c.	m. c.	m. c.	m. c.
1 62	0 65	.....	.....	.....	.....	1 32	.....
	0 55	.....	.....	.....	.....	.....	.....
	0 6	.....	.....	.....	.....	.....	.....
	0 24	.....	.....	.....	.....	.....	1 50
	0 51	.....	.....	.....	.....	.....	.....
	0 9	.....	.....	.....	.....	.....	.....
	0 24	0 17	.....	.....	.....	.....	.....
	0 79	.....	.....	.....	.....	.....	.....
	1 33	.....	.....	.....	.....	1 32	1 50
	0 19	.....	.....	.....	.....	.....	.....
	0 68	0 18	.....	.....	.....	.....	.....
	0 58	.....	.....	.....	0 32	.....	.....
	0 59	.....	0 51	.....	.....	.....	.....
	0 22	.....	.....	.....	.....	.....	.....
	0 57	.....	.....	.....	1 9	.....	.....
	1 36	.....	.....	.....	.....	.....	.....
	0 23	.....	.....	.....	.....	.....	.....
	0 30	.....	.....	.....	.....	.....	.....
	0 31	.....	.....	.....	.....	.....	.....
	0 25	.....	.....	.....	.....	.....	.....
	0 48	.....	.....	.....	.....	.....	.....
	0 44	.....	.....	.....	.....	.....	.....
	0 16	.....	.....	.....	.....	.....	.....
1 62	13 2	0 35	0 51	.....	1 41	.....	.....

B1.

LISTS OF GRADES AND CURVES ON EXISTING LINE AND ON PROPOSED DEVIATIONS.

Department of Public Works, Railway Construction Branch,

Engineer-in-Chief's Office, Sydney, 14 March, 1894.

I HAVE the honour to forward herewith six lists showing grades and curves on existing line, and on Nos. 1, 2, 3, and No. 3 variation on 1 in 90 grade deviations.

H. DEANE,

Engineer-in-Chief.
(per F.H.)

The Secretary, Parliamentary Standing Committee on Public Works.

LIST of Curves between Dargan's Creek and Bottom Points.—Original Line.

	8 chains rad.	10 chains rad.	12 chains rad.	16 chains rad.	20 chains rad.	30 chains rad.	40 chains rad.	
Dargan's Creek.	m. c.	m. c.	m. c.	m. c.	m. c.	m. c.	m. c.	
	.....	0 9'00	.....	.....	.....	.....	.....
	0 14'70	0 6'15	0 15'80	.....	.....	.....	.....
	0 15'20	0 6'75	0 2'55	0 5'50	.....	.....	.....
	0 15'45	0 16'60	0 3'67	0 3'30	0 6'90	.....	.....
	.....	0 16'90	0 7'30	.....	0 11'00	.....	.....
	.....	0 7'30	.....	.....	.....	0 17'50	.....
	.....	0 9'15	.....	.....	.....	0 23'20	0 7'30	
	.....	0 9'40	.....	.....	.....	0 18'10	.....
	.....	0 7'85	.....	.....	.....	0 25'90	.....
	.....	0 16'00	.....	.....	.....	.....	.....
	0 45'35	1 25'10	0 29'32	0 8'80	0 17'90	1 4'70	0 7'30	Bottom Points.

Top wing 6'20 chains 12 chains rad.
Bottom wing 8'87 do 20 do

LIST of Grades between Dargan's Creek and Bottom Points.—Original Line.

Against Down Traffic.			Against Up Traffic.		
1 in 33.	1 in 66.		1 in 40.	1 in 42.	1 in 66.
m. c.	m. c.		m. c.	m. c.	m. c.
1 31	0 6		0 25	.....	.....
.....	0 9		.....	2 42	.....
.....	.....		.....	.....	0 24
.....	.....		.....	.....	0 23'3
1 31	0 15	Bottom Points.	0 25	2 42	0 47'3
			Bottom Points.		

Level 21'60 chains.

Top wing 12 chains 1 in 66
Bottom wing 13'5 do do

LIST of Grades and Curves on Deviation No. 1.

Against Down Traffic.	Against Up Traffic.				Curves.
	$\frac{1}{100}$	$\frac{1}{100}$	$\frac{1}{50}$	$\frac{1}{25}$	
53 chains of $\frac{1}{50}$	2 chs.	1 ch.	1 m. 53 chs.	35 chs.	19'29" chs rad. 35 chs 22'46 " 12 "
Level..... 17 chains.					

LIST of Grades and Curves—Deviation No. 2.

Grades.			12 chs. rad.	m. c.		
Against Up Traffic.						
1 in 42.	1 in 60.	1 in 77.	}			
m. c. 0 6'00 0 16'00	m. c. 0 49'00	m. c. 0 47'00			0 17'80	0 21'75
Total ..0 22'00	0 49'00	0 47'00			Total	0 60'00

LIST of Grades and Curves on Deviation No. 3.

Against Down Traffic.		Against Up Traffic.	
1 in 61.	1 in 156.	1 in 60.	
m. c. 0 50'80	m. c. 1 14	m. c. 2 69	
Level 0 miles 5'40 chains.			

Curves.

15 chains.	20 chains.	30 chains.	48 chains.	60 chains.
m. c. 0 42'00 0 7'65 0 11'35 0 4'60 0 10'60 0 13'70 0 27'35 0 20'35 0 20'45 0 16'45 0 11'30	m. c. 0 11'55 0 3'80	m. c. 0 12'35	m. c. 0 14'15	m. c. 0 21'45
2 25'80	0 15'35	0 12'35	0 14'15	0 21'45

LIST of Grades and Curves, Amended Route No. 3.—(1 in 90 Grade.)

Against Down Traffic.		Against Up Traffic.	
1 in 90.	1 in 132.	1 in 132	1 in 90.
Total..... 0 m. 31'60 c.	0 m. 11'10 c.	Total..... 0 m. 7'75 c.	2 m. 69 c.
Level..... 1 mile 2'35 chains.			

Curves.

15 chains rad.	16 chains rad.	20 chains rad.	24 chains rad.	60 chains rad.
m. c. 0 44'50 0 25'15 0 6'55 0 22'15 0 22'00 0 16'45 0 11'30	m. c. 0 14'55	m. c. 0 4'95 0 4'55 0 11'55 0 3'80	m. c. 0 25'40 0 12'95	m. c. 0 22'55 0 29'80
Total... 1 65'10	0 14'55	0 24'85	0 38'25	0 52'35

C. O. BURGE.
13/3/94.

B2.

[To Evidence of H. Deane, Esq.]

DETAILED ESTIMATES OF COST.

Great Western Railway—Great Zigzag—Deviation No. 1.

Amended estimated cost of a double line of railway 2 miles 48 chains in length.

Description.	Estimated cost.	Average per mile.
	£ s. d.	£
Earthworks.....	11,355 0 0	4,367
Timber bridge and culverts.....	661 17 6	255
Tunnels No. 2, 2,893 yards in length	205,491 17 0	79,035
	217,508 14 6	
Contingencies—Tunnels, 2 per cent.....	£4,109 16 9	
Other items, 10 per cent.	1,201 13 9	
	5,311 10 6	2,043
	222,820 5 0	
Permanent way, at 51s.	11,668 16 0	4,488
Supervision.....	6,000 0 0	2,308
	240,489 1 0*	
Average cost per mile	92,495 15 9	.....

* Say, £240,500.

Great Zigzag—Deviation No. 1.

Amended cost of one lineal yard of Tunnel, 4-ring circle—Lining composed of one-third brickwork and two-thirds concrete.

	£ s. d.	£ s. d.
Excavation, 63 cubic yards at 12s. 6d. 14s.	44 2 0	39 7 6
Brickwork, 3·7 " " 55s. 45s.	8 6 6	10 3 6
Concrete, 7·3 " " 50s. 40s.	14 12 0	18 5 0
Centre drain, 1·0 lineal yard at 20s.	1 0 0	1 0 0
	£68 0 6	£68 16 0
One front brickwork, 97½ cubic yards at 55s.		268 2 6
One sanctuary excavation, 5½ cubic yards, at 12s. 6d.		3 5 7½
Concrete, 3 cubic yards, at 50s.		7 10 0
		£10 15 7½

Tunnel No. 1—Length, 2,816 yards (Long tunnel).

2,816 lineal yards, at £68 16s.	193,740 16 0
Fronts No. 2, at £268 2s. 6d.	536 5 0
Ventilating shafts, 200 lineal yards, at £30	6,000 0 0
No. 76 sanctuaries, at £10 16s.	820 16 0
	£201,097 17 0

Tunnel No. 2—Length, 77 yards.

77 lineal yards, at £52	4,004 0 0
2 fronts, at £195	390 0 0
	4,394 0 0

Total tunnels

	£205,491 17 0
Permanent way, 2 miles 48 chains = 208 chains = 4,576 lineal yards, at 51s.	£11,668 16 0

Great Western Railway—Great Zigzag—Deviation No. 3; 1 in 60 grade.

Amended estimated cost of a double line of railway 4 miles 60 chains in length.

Description.	Estimated cost.	Average per mile.
	£ s. d.	£
Earthworks, at 2s. 6d.	51,977 10 0	10,942
Culverts and box drains	4,036 0 0	850
Stream diversion and tunnel at lower end	2,000 0 0	421
Level crossings, fencing, and road diversions	491 0 0	103
Tunnels, at 10s., 36s., and 40s.—1,674 lineal yards	90,098 0 0	18,968
	148,602 10 0	
Contingencies—Tunnels, 2 per cent.....	1,802 0 0	
Other items, 10 per cent.	5,850 0 0	
	7,652 0 0	1,611
	156,254 10 0	
Supervision.....	3,500 0 0	737
	159,754 10 0	
Add for permanent way double line, at 25s. 6d. per yard	21,318 0 0	4,488
	181,072 10 0*	
Average cost per mile	38,120 6 4	.....

* An addition of 4s. to lining prices brings this amount nearly up to that previously given.

Estimate presented to Works Committee—

Works	£165,000
Permanent way	21,318
	£186,318

Great

Great Western Railway—Great Zigzag—Deviation No. 3; 1 in 90 grade.
Estimated cost of a double line of railway 4 miles 71 chains in length.

Description.	Estimated cost.		Average per mile.
	£	s. d.	£
Earthworks.....	54,400	0 0	11,130
Culverts and box drains	3,670	0 0	751
Stream diversion and tunnel at lower end	2,000	0 0	409
Level crossings, fencing, and road diversions	500	0 0	102
Tunnels, No. 8, 2,459 yards in length	131,468	0 0	26,809
	192,038 0 0		
Contingencies—Tunnels, 2 per cent.....	£2,620	7 0	
Other items, 10 per cent.	6,057	0 0	
	8,686 7 0		1,777
Permanent way, at 51s.	21,935	2 0	4,488
Supervision	3,500	0 0	716
	226,159 9 0*		
Average cost per mile	46,273 0 8		.....

* Say, £226,200.

Quantities in double-line tunnel, with four-ring arch, and concrete side walls 18 inches thick—One-third of arch brickwork, two-thirds of arch concrete.

Excavation, no invert, 63·00 lineal yards, per yard run.			
Brickwork, 3·70 " " "			
Concrete, 7·30 " " "			
Centre drain, 1·00 lineal yard.			
One front brickwork, 97½ cubic yards, at 40s.		£195 0 0	
Sanctuary—Excavation, 5½ lineal yards, at 10s.		£2 12 6	
Concrete, 3 " " 36s.		5 8 0	
		£8 0 6	
	Tunnel.		
Excavation, 63 cubic yards, at 10s.	£31 0 0		31 10 0
Brickwork, 3·7 " " 40s. 44s.	8 2 10		7 8 0
Concrete, 7·3 " " 36s. 40s.	14 12 0		13 2 10
	£53 14 10		£52 0 10

Great Western Railway—Great Zigzag—Deviation No. 1.
Amended estimated cost of a double line of railway 2 miles 48 chains in length.

Description.	Estimated cost.		Average cost per mile.
	£	s. d.	£
Earthworks, at 2s. 6d.	11,355	0 0	4,367
Culverts, &c.	2,661	17 6	1,023
Level crossings, fencing, &c.	150	0 0	58
Long tunnel, 2,816 lineal yards, at £67 16s. 10d.	£191,042	2 8	
76 Sanctuaries, at £8 12s. 6d.	655	10 0	
2 fronts, at £214 10s.	429	0 0	
Short tunnel, 77 lineal yards, at £55 4s. 10d.	4,253	12 2	
2 fronts, at £214 10s.	429	0 0	
Ventilating shafts	6,000	0 0	
	202,809 4 10		78,004
Contingencies—Tunnels, 2 per cent.	4,056	3 8	
Other items, 10 per cent.	1,416	13 9	
	5,472 17 5		2,105
Supervision	6,000	0 0	2,308
	228,448 19 9		
Permanent way, at 25s. 6d. lineal yard	11,668	16 0	4,488
	240,117 15 9		
Average cost per mile	92,353 0 0		.....

Great Western Railway—Great Zigzag—Deviation No. 1.
Amended cost of 1 lineal yard of Tunnel, 4-ring arch, lining composed of one-third brickwork and two-thirds concrete.

Excavation, 63 cubic yards at 14s.	£ 44 2 0	
Brickwork, 3·7 " " 44s.	8 2 10	
Concrete, 7·3 " " 40s.	14 12 0	
Centre drain, 1·0 lineal yard, £1	1 0 0	
	67 16 10	per lineal yard.
Sanctuaries—		
Excavation, 5½ cubic yards at 10s.	2 12 6	
Concrete, 3 " " 40s.	6 0 0	
	8 12 6	each.
Tunnel fronts—		
Brickwork, 97½ " " 44s.	214 10 0	each.

Deviation

Deviation No. 3.

Excavation, 63 cubic yards, 10s.	£	s.	d.
Brickwork, 3·7 " 44s.	31	10	0
Concrete, 7·3 " 40s.	8	2	10
Centre drain, 1·0 lineal yard, 20s.	14	12	0
	1	0	0
	55	4	10
Sanctuaries as above, each	per lineal yard.		
Tunnel fronts as above, each	8	12	6
	214	10	0

Great Western Railway—Great Zigzag—Deviation No. 3. 1 in 60 grade.

Amended estimated cost of a double line of railway 4 miles 60 chains in length.

Description.	Estimated cost.			Average cost per mile.
	£	s.	d.	£
Earthworks, at 2s. 6d.	51,977	10	0	10,942
Culverts and box drains	4,036	0	0	850
Stream diversions and tunnel at lower end	2,000	0	0	421
Level crossings, fencing, and road diversion	491	0	0	103
Tunnels, 1,674 lineal yards, £55 4s. 10d.	£92,474	11	0	
40 sanctuaries, £3 12s. 6d.	345	0	0	
14 fronts, £214 10s.	3,003	0	0	
Contingencies—Tunnels, 2 per cent.	1,916	9	0	
Other items, 10 per cent.	5,850	9	0	
	95,822	11	0	20,173
Supervision	7,766	18	0	1,635
Permanent way, at 25s. 6d. lineal yard	3,500	0	0	737
	165,593	19	0	
	21,318	0	0	4,488
	186,911	19	0	
Average cost per mile	39,349	17	3	

H.D., 6/4/94.

C.

[To Evidence of W. Thow, Esq.]

STATEMENT SHOWING PLACES WHERE PUSH-UP ENGINES ARE EMPLOYED BETWEEN PENRITH AND BATHURST.

*Down Journey from Penrith to Bathurst.**Emu Plains—Katoomba:* Mileage, 35·43½ to 66·21½—All goods trains leaving Penrith having over 90 tons in weight are pushed up from Penrith to Katoomba by a Penrith engine.*Dargan's Bank:* Mileage, 86·40 to 88·20—Trains conveying goods or empty stock trucks are assisted between Bell and Clarence by an Eskbank engine, attached in front, if they have a greater load than the train engine is capable of hauling up Dargan's Bank. With average traffic this occurs on about two-thirds of the down freight trains.*Marrangaroo Bank:* Mileage, 97·10 to 100·72—Freight trains are pushed up by an Eskbank shunting engine from Bowenfels to mileage 100·72 when there is sufficient down traffic to warrant it. This is only an occasional practice.*Up Journey, Bathurst to Sydney.**Raglan Bank:* Mileage, 142·40 to 139·20—Goods trains are pushed up from Kelso to Raglan by a Bathurst shunting engine, except on trains controlled by the Westinghouse brake, in which case the push-up engine is not used.*Marrangaroo Bank:* Mileage, 103·10 to 100·72—When the traffic is sufficiently good to render it necessary, goods trains are pushed up from Wallerawang to mileage 100·72 by a Wallerawang engine. This only occurs once per day at present.*Lithgow Zigzag:* All goods, mineral, and live stock trains are pushed up from Eskbank to Clarence Siding Station by an Eskbank engine. About two are required at present, but in busier times three and four engines are necessary for push-up work.

D.

[To Evidence of W. T. Foxlee, Esq.]

DETAILED ESTIMATE OF NO. 1 PROPOSAL.

Proposed Deviation between Dargan's Creek and bottom points of Great Zigzag.

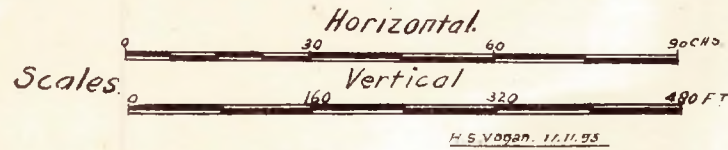
	£	s.	d.
2,917 yards run of double-line tunnel, lined with 18 inches of concrete, at £58	160,186	0	0
125 sanctuaries, at £8	1,000	0	0
100,000 yards cube excavation in approaches to tunnel and stream diversion, at 2s. 6d.	12,500	0	0
500 yards cube concrete in tunnel fronts, at 38s.	950	0	0
Bridges, culverts, and drains	2,500	0	0
9,550 lineal yards permanent way, including sandstone top and bottom ballast (80lb. T-steel road), at 25s. 6d.	12,176	0	0
Ditching, clearing, and fencing	250	0	0
Signals and interlocking	500	0	0
Shafts, including all necessary brickwork	4,000	0	0
	203,062	0	0
Add for contingencies 5 per cent.	10,183	0	0
	£213,245	0	0

W.T.F.

[2 plans.]

N.S.W.R.
WESTERN LINE

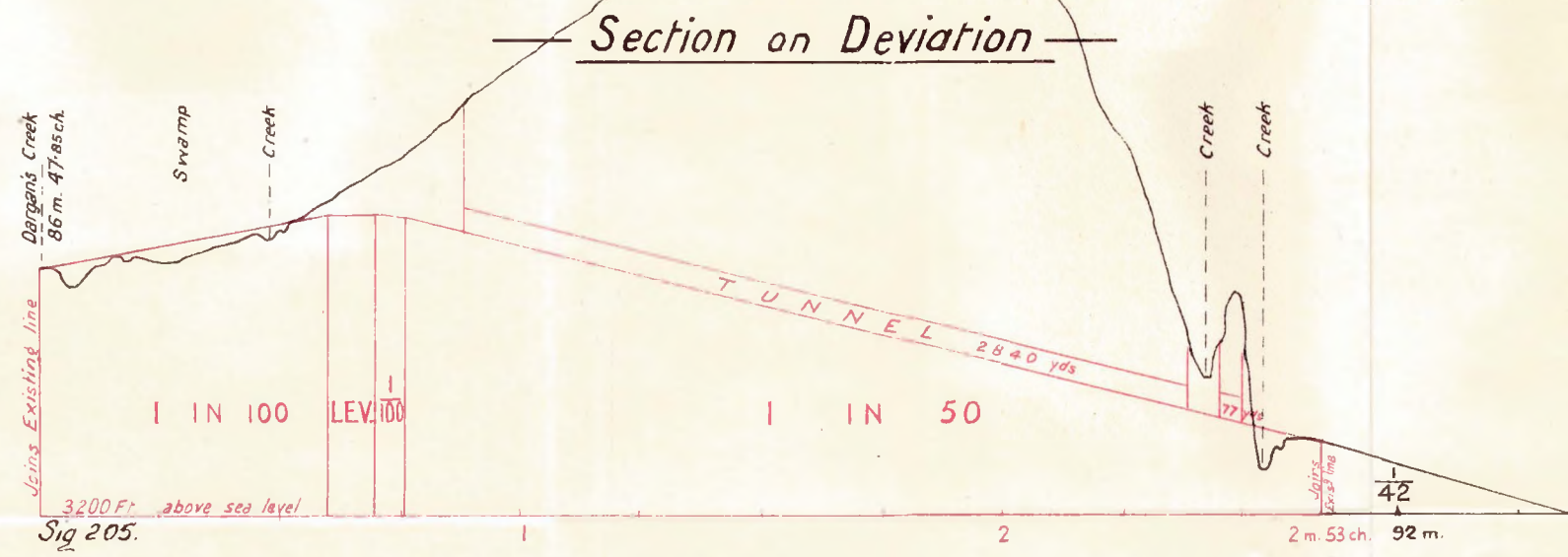
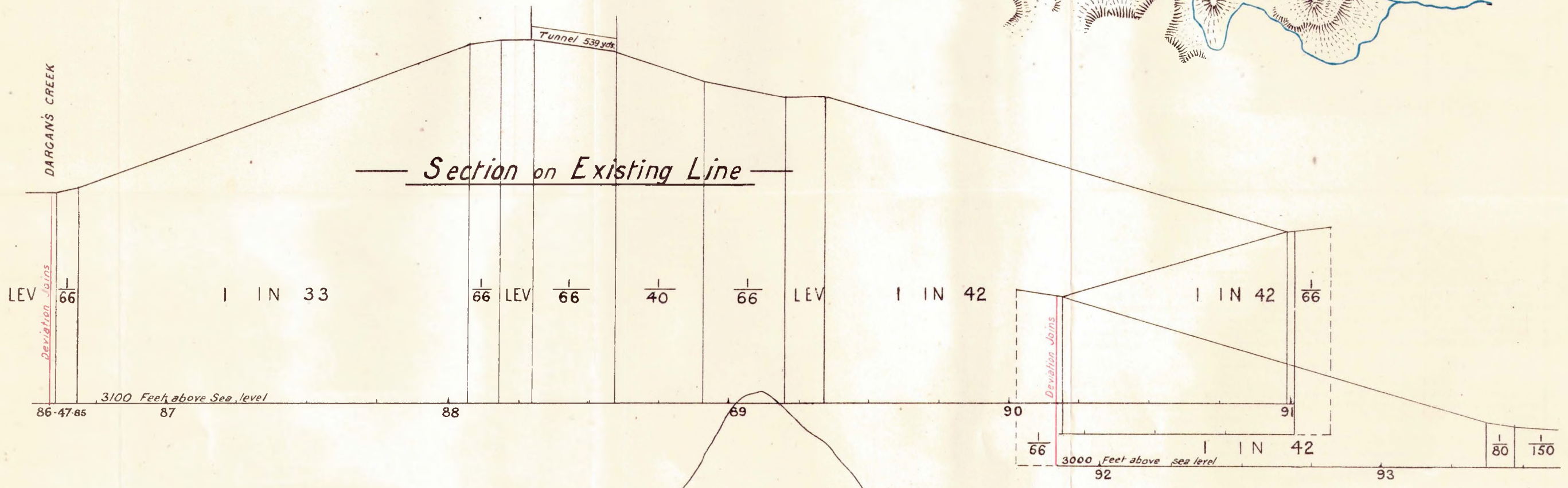
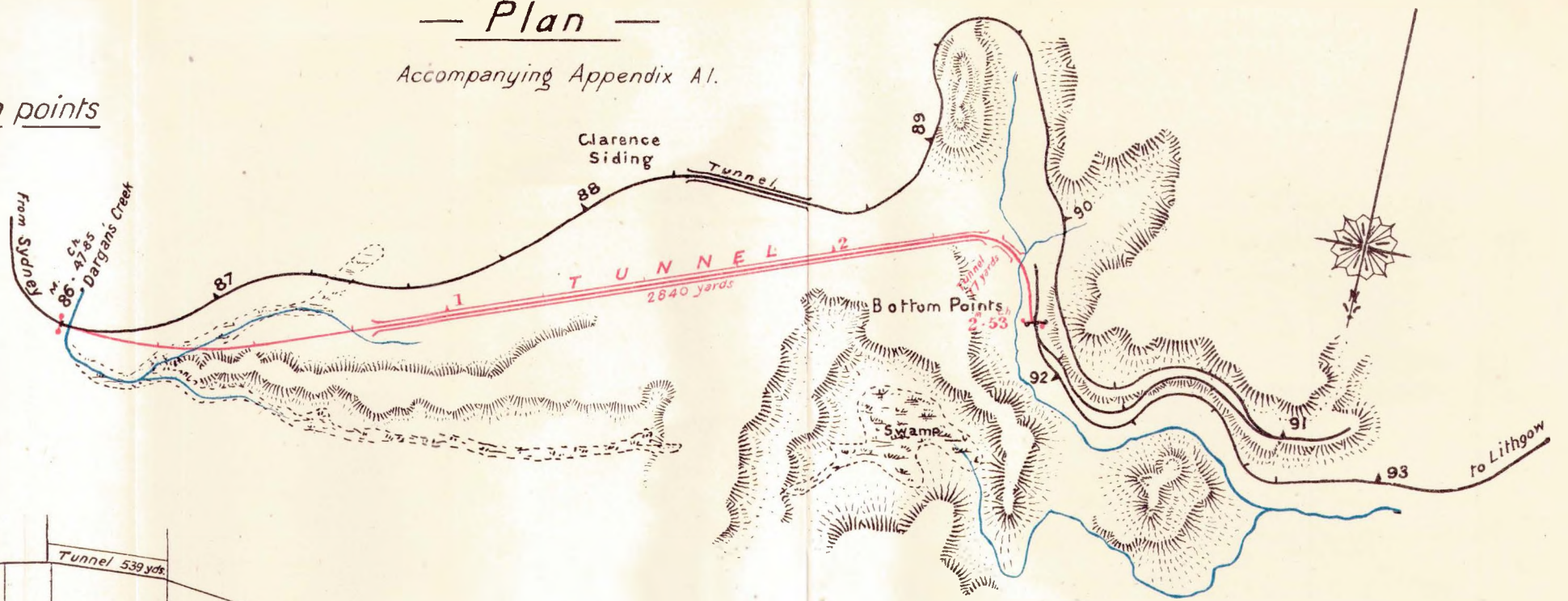
Proposed deviation Dargan's creek to Bottom points



Distance by Existing line	5	20.70
" " Deviation	2	53
Saving	2	47.70

W.F.F.

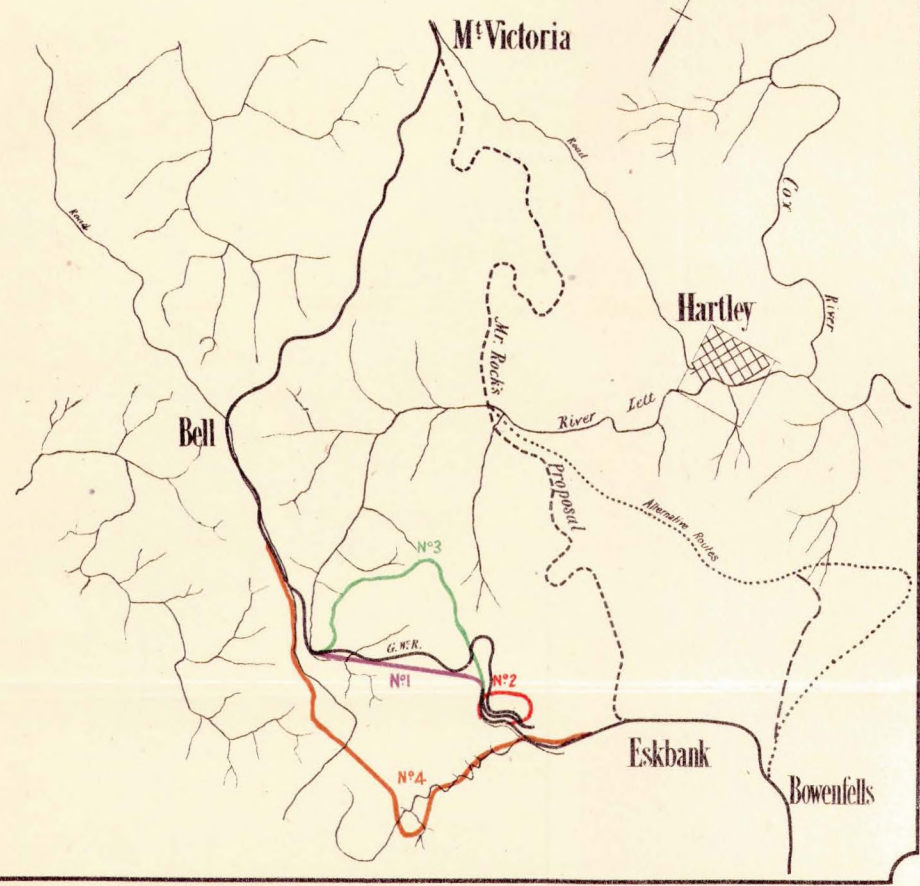
Plan
Accompanying Appendix A1.



Gradient	Existing line		Deviation	
	MILES	CHAINS	MILES	CHAINS
1 IN 33	1	31.00		
" 40	"	25.00		
" 42	2	39.00		
" 50			1	73
" 66				62.70
" 100				52.5
LEVEL				7.5
TOTALS	5	20.70	2	53.00

Diagram

Scale 1 2 3 4 Miles



G.W.R.

Proposed deviations to avoid the G^r Zig Zag

SCALE

0 10 20 30 40 50 60 70 80 90 100 110 120 Chains



1894.

NEW SOUTH WALES.

PARLIAMENTARY STANDING COMMITTEE ON
PUBLIC WORKS.

REPORT

TOGETHER WITH

MINUTES OF EVIDENCE, APPENDICES, AND PLANS,

RELATING TO THE

PROPOSED RAILWAY

FROM

TEMORA TO WYALONG.

Presented to Parliament in accordance with the provisions of the Public Works Act,
51 Vic. No. 37.

SYDNEY: CHARLES POTTER, GOVERNMENT PRINTER.

MEMBERS OF THE COMMITTEE.

LEGISLATIVE COUNCIL.

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 The Honorable JAMES HOSKINS.
 The Honorable FREDERICK THOMAS HUMPHERY.
 The Honorable JOHN DAVIES, C.M.G.
 The Honorable WILLIAM JOSEPH TRICKETT.

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MEMBERS OF THE SECTIONAL COMMITTEE.

The Honorable FREDERICK THOMAS HUMPHERY, Chairman.
 WILLIAM CHANDOS WALL, Esquire.
 HENRY DAWSON, Esquire.

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PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS.

RAILWAY FROM TEMORA TO WYALONG.

REPORT.

THE PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS, appointed during the first Session of the present Parliament, under the Public Works Act of 1888, 51 Vic. No. 37, the Public Works Act Amendment Act of 1889, 52 Vic. No. 26, and the Public Works (Committees' Remuneration) Act of 1889, 53 Vic. No. 11, to whom was referred the duty of considering and reporting upon "the expediency of constructing a line of railway from Temora to Wyalong," have, after due inquiry, resolved that it is expedient the decision upon the proposed railway be deferred for six months; and, in accordance with the provision of sub-section IV, of clause 13, of the Public Works Act, report their resolution to the Legislative Assembly:—

1. The official description of the proposed line shows that the railway would begin at the termination of the Cootamundra to Temora line, at 291 miles 63 chains 95·8 from Sydney, and that it would go thence to Barmedman and from Barmedman to Wyalong, a distance of 331 miles from Sydney. The total length of the line between Temora and Wyalong, according to the official description, would be 40 miles; but subsequent to the description being handed in it was found that the length could be reduced to 38 miles 46 chains. To within about 4 miles of Barmedman the route of the line is chiefly along the side of the main road. It passes on the west side of the township, and then proceeds almost direct, mainly along the public road to Wyalong. For nearly the whole distance the country is flat, and no expensive engineering works are necessary. The steepest grade is 1 in 100.

Description of
the proposed
railway.

2. The estimated total cost of the railway is £104,430, or £2,707 per mile, exclusive of the cost of land and compensation.

Estimated
cost.

3. At the commencement of their inquiry the Committee found that the available information concerning the proposed line was not complete. This was due to the proposed work having been somewhat hastily submitted to the Legislative Assembly in the desire to assist as quickly as possible the large population which at the time had assembled on the Wyalong gold-field. The line had some time before been surveyed as far as Barmedman in connection with a project for establishing railway communication with the Lachlan River districts, but, up to the time of the reference of the work to the Committee, no survey beyond Barmedman, in the direction of Wyalong, had been made, and no report had been obtained from the Railway Commissioners upon the traffic prospects and expenses of the proposed extension. Desirous, however, of proceeding with the inquiry as expeditiously as possible the Committee examined the Under Secretary for Public Works, the Engineer-in-Chief for Railway Construction, the Chief Draftsman of the Department of Lands, and the Chief Inspector of Mines; and also appointed a Sectional Committee to inspect the route proposed for the railway and to take evidence in the district. Subsequently they

The Commit-
tee's inquiry.

they examined Mr. McLachlan, Secretary to the Railway Commissioners; Mr. Harper, Goods Superintendent, Railway Department; Mr. Pittman, Government Geologist; Mr. Shellshear, Divisional Engineer, Department of Railways, Goulburn; and Mr. Firth, Acting Engineer-in-Chief for Railway Construction. In the course of their inquiry the Committee have held six meetings at which nine witnesses were examined. In addition to this, the Sectional Committee's inquiry comprised five meetings, at which the evidence of thirty-one witnesses was taken; and every effort has been made to procure complete information upon the project. By the examination of Mr. Harper, the Committee obtained valuable information with regard to the traffic prospects on the proposed line of railway, and the data supplied by him will be found in the appendix to his evidence. The question of light and cheap railways, referred to in the report of the Railway Commissioners as "pioneer" railways, received considerable attention, and in this connection the Committee examined Mr. Shellshear (Divisional Engineer of the Railway Department at Goulburn), who recently visited America to inquire into matters of general railway construction, as to the mode adopted in the United States of constructing light and cheap lines. In endeavouring to arrive at a proper conclusion with regard to this proposed work particular attention was also given by the Committee to the probable permanency of Wyalong as a gold-field, and upon this point Mr. Pittman, Government Geologist, who recently visited the district, was examined, and a copy of his report to the Department of Mines is attached to the evidence.

Sectional
Committee's
inquiry.

4. The Sectional Committee, who were accompanied by a surveyor of the Railway Construction Branch of the Department of Public Works, made a careful inspection and inquiry. At Barmedman, Wyalong, and Temora witnesses, including some from Hillston and Cargellico, were examined. The Sectional Committee were of opinion that under existing circumstances it would be premature to construct a railway simply to serve Wyalong, but having regard to the facility with which, from an engineering point of view, the proposed line could be constructed, they felt "justified in recommending its construction, if viewed as a section of a main line to the Lachlan at Hillston, *via* Cargellico," but at the same time they considered "that the question of ultimate extension to the Lachlan should first be decided." Unless it should be the settled policy of the country to extend the Cootamundra-Temora branch to the Lachlan, the Committee felt they would not be justified in recommending the immediate adoption of the proposal under consideration.

Railway
Commissioners'
Report.

5. The report of the Railway Commissioners, received by the Committee very late in their inquiry, is not favourable to the immediate construction of the proposed railway. In their estimate the Railway Commissioners do not adopt the figures supplied by the Department of Public Works, but a cost estimated by themselves, based upon a suggestion for the construction of cheap pioneer lines made by them to the Minister for Works in 1892. The estimated cost of construction put before the Committee by the Engineer-in-Chief for Railway Construction was £104,430; the estimated cost stated in the Railway Commissioners' report is £85,000. Taking this estimate of cost, the annual interest at 4 per cent. would be £3,400, and the cost of working £3,550, (*viz.* :—traffic expenses £800; permanent-way expenses, £2,000; and locomotive expenses, £750—total £6,950 per annum). Regarding the probable revenue from the line, the Commissioners say nothing definite can be stated. "In railway construction," the report says, "the proposal, from a traffic point of view, is unique, as the future entirely depends upon the permanency of the gold-field at Wyalong, which it is understood is the basis of the extension. There is country adapted for agricultural purposes around Wyalong and *en route* thereto, but there is no present necessity for providing it with railway communication while there are large areas suitable for the purpose contiguous to existing lines available." The present population of Wyalong the Commissioners do not regard as permanent; but basing an estimate of traffic "on the assumption that there will be a permanent settlement at Wyalong to the extent that now exists at Temora—about 1,800"—the value of the annual revenue from the railway would not exceed £2,800, leaving an annual deficiency of £4,150. Considering the "great uncertainty of the future of Wyalong," the Commissioners recommend that the proposal to construct the railway be "deferred for six months, or until such time as there can be no reasonable doubt as to the future of the place."

6. Prominent among the various points in the inquiry to which special consideration was given, were :— The evidence in the inquiry.

- (1) The proposal viewed as a portion of a future extension to Hillston, *viâ* Barmedman and Cargellico.
- (2) The most suitable route by which to tap the Lachlan Valley.
- (3) The permanence of the field, and its future population.
- (4) The traffic prospects between Temora and Wyalong, as a present terminus.
- (5) Whether the requirements of the population demanded the immediate construction of the proposed line.

A perusal of the evidence given by the Under Secretary for Public Works shows that prior to the discovery of gold at Wyalong, a survey had been made from Temora to Barmedman, the Department having in view a possible extension of the railway from Temora, *viâ* Barmedman and Cargellico, to Hillston, as the best route, by which to reach the Lachlan Valley, the desirableness of this route being to a great extent emphasised by the subsequent influx of a large number of people to Wyalong. Another possible route suggested to the Committee in the course of their inquiry was one by way of Forbes and thence to Hillston, and on the whole the evidence indicated this as the better route of the two. The evidence given on this point tends to show that the former route could only be justified by the township of Wyalong becoming a permanent and successful field, and not on account of the actual traffic which might reasonably be expected. The Committee, however, while directing particular attention to the proposal submitted to them by the Legislative Assembly, found it also necessary to consider the question in view of the traffic which might be expected from either of the routes mentioned. It was elicited that although good land for agricultural purposes existed in the country to the north-west of Wyalong, large areas contiguous to the Temora line remained uncultivated. In his evidence on this point, the Secretary to the Railway Commissioners says, "the country between Wyalong and Hillston is now used entirely for pastoral purposes and the traffic from that district comes to the railway now, so that no new traffic would be developed by the extension of the proposed line."

7. The evidence obtained from witnesses competent to express a reliable opinion on the permanency of the gold-field pointed to the likelihood of the population being reduced unless further developments were made in the near future. The permanency or otherwise of the field. "The evidence of experienced miners"—the Sectional Committee's Report states—"confirms the opinion freely expressed by local residents, and endorsed by the Chief Inspector of Mines, that even should no further discoveries be made, remunerative employment will be found for upwards of 1,500 people for a considerable time to come." Additional evidence upon which to base some reasonable estimate of the future prospects of the field was furnished in a report made by the Government Geologist, who after an exhaustive examination of the various claims already in existence and the country in the immediate vicinity, gave it as his opinion that the present prospects of the field were exceedingly favourable, but at the same time he pointed out that there was little doubt that mining operations would be more difficult and expensive as a greater depth was attained, as harder granitic formations would probably be reached.

8. In arriving at a conclusion with regard to the proposal submitted to them, the Committee have had due regard to the important interests involved. There are reasonable grounds for assuming that the construction of a railway to Wyalong would be followed by a fair amount of agricultural settlement, and the Committee have been supported in this assumption by the results of the extension of the line from Cootamundra to Temora, which has paid, since its opening, working expenses and over $3\frac{3}{4}$ per cent. towards interest; but the evidence furnished by competent witnesses, while favourable to the prospects of Wyalong, is not conclusive as to the permanency of the field, the general opinion being that, until further development takes place it could only support a population of about 1,500 persons. There has

Decision of the Committee.

has also been the question as to which route the extension to Hillston should take, and this, too, must, in the opinion of the Committee, depend largely upon the future of Wyalong. Under all the circumstances, the Committee are of opinion that the further consideration of the projected railway should be deferred as shown in the following extract from the Minutes of Proceedings of the meeting held on Tuesday, 22 May, 1894 :—

Mr. Trickett moved,—“That the Committee proceed to consider the evidence on the proposed Railway from Temora to Wyalong, with a view to reporting on the subject to the Legislative Assembly.”

The motion was seconded by Mr. Davies, and passed.

Mr. Trickett moved,—“That, in the opinion of the Committee, it is not expedient the proposed Railway from Temora to Wyalong, as referred to the Committee by the Legislative Assembly, be carried out.”

Mr. Collins seconded the motion.

Mr. Humphery moved,—“That the motion be amended by the omission of the word ‘not.’”

The amendment was passed on the following division upon the question,—“That the word proposed to be omitted stand part of the motion” :—

Ayes, 5.
Mr. Garrard,
Mr. Hoskins,
Mr. Trickett,
Mr. McCourt,
Mr. Collins.

Noes, 7.
Mr. Suttor,
Mr. Humphery,
Mr. Davies,
Mr. Wall,
Mr. Neild,
Mr. O'Sullivan,
Mr. Dawson.

Mr. Humphery moved,—“That the motion be further amended by the insertion of the words ‘that the decision upon’ after the word ‘expedient.’”

The amendment was passed on the following division upon the question,—“That the words proposed to be inserted be so inserted” :—

Ayes, 9.
Mr. Garrard,
Mr. Suttor,
Mr. Hoskins,
Mr. Humphery,
Mr. Trickett,
Mr. Wall,
Mr. McCourt,
Mr. Neild,
Mr. Collins.

Noes, 2.
Mr. Davies,
Mr. O'Sullivan.

Mr. Humphery moved,—“That the motion be further amended by the omission of the words ‘carried out.’”

The amendment was passed on the following division upon the question,—“That the words proposed to be omitted stand part of the motion” :—

Ayes, 2.
Mr. Davies,
Mr. O'Sullivan.

Noes, 9.
Mr. Garrard,
Mr. Suttor,
Mr. Hoskins,
Mr. Humphery,
Mr. Trickett,
Mr. Wall,
Mr. McCourt,
Mr. Neild,
Mr. Collins.

Mr. Humphery moved,—“That the motion be further amended by the addition of the words ‘deferred for six months.’”

The amendment was passed on the following division upon the question,—“That the words proposed to be added be so added.”

Ayes, 9.
Mr. Garrard,
Mr. Suttor,
Mr. Hoskins,
Mr. Humphery,
Mr. Trickett,
Mr. Wall,
Mr. McCourt,
Mr. Neild,
Mr. Collins.

Noes, 2.
Mr. Davies,
Mr. O'Sullivan.

The motion as amended,—“That in the opinion of the Committee it is expedient that the decision upon the proposed railway from Temora to Wyalong, as referred to the Committee by the Legislative Assembly, be deferred for six months,” was passed on the following division:—

Ayes, 9.
 Mr. Garrard,
 Mr. Suttor,
 Mr. Hoskins,
 Mr. Humphery,
 Mr. Trickett,
 Mr. Wall,
 Mr. McCourt,
 Mr. Neild,
 Mr. Collins.

Noes, 2.
 Mr. Davies,
 Mr. O'Sullivan.

J. GARRARD,
 Chairman.

Office of the Parliamentary Standing Committee on Public Works,
 Sydney, 28 May, 1894.

PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS.

MINUTES OF EVIDENCE.

PROPOSED RAILWAY FROM TEMORA TO WYALONG.

MONDAY, 9 APRIL, 1894.

Present:—

JACOB GARRARD, Esq. (CHAIRMAN).

The Hon. WILLIAM HENRY SUTTON.	THOMAS THOMSON EWING, Esq.
The Hon. JAMES HOSKINS.	WILLIAM CHANDOS WALL, Esq.
The Hon. FREDERICK THOMAS HUMPHERY.	JOHN CASH NEILD, Esq.
The Hon. JOHN DAVIES, C.M.G.	CHARLES COLLINS, Esq.
The Hon. WILLIAM JOSEPH TRICKETT.	HENRY DAWSON, Esq.

The Committee proceeded to consider the proposed Railway from Temora to Wyalong.

Joseph Barling, Esq., Under Secretary, Department of Public Works, sworn, and examined:—

1. *Chairman.*] You propose to make a statement to the Committee concerning the proposed work which has been referred to it by the Legislative Assembly? Yes; the proposal before the Committee was so referred by Parliament on the 29th March, the following being the terms of the resolution:—"That it be referred to the Parliamentary Standing Committee on Public Works to consider and report upon the expediency of constructing a line of railway from Temora to Wyalong." The early history of this proposal is involved in that of the extension of the railway from Cootamundra to Temora, so that I need not refer to it in any detail. Taking Hillston as the terminal point for the present, four different routes have been advocated. In speaking of Hillston as the terminal point, I do so for the purposes of the comparison I am about to make. I cannot say it has been absolutely determined by the Minister that the railway should be extended from Wyalong to Hillston, because there is another proposal extending the railway to Hillston *via* Forbes along the Valley of the Lachlan. But the discovery of gold at Wyalong has come as a surprise upon the Department, and as far as we can see at present the connection with Hillston will probably be *via* Wyalong. 1st. From Coolaman. This of course must be at once put aside, as the starting point has already been fixed at Cootamundra, and extended 38½ miles to Temora, so that this proposal is entirely disposed of. 2nd. The extension from Temora *via* Mandamah, leaving out Barmedman, and taking a direct route to Hillston. 3rd. The extension to Hillston *via* Barmedman, and thence in a direct line to Hillston. 4th. The direction of the line now proposed, *via* Wyalong, Lake Cargellico, and on to Hillston. Whatever doubt there may originally have been as to which route should be adopted is now in all probability set at rest by the discovery of auriferous deposits in the neighbourhood of Wyalong, which, accompanied by the fact of the splendid agricultural country which is common to all the routes, determines the balance of evidence undoubtedly in favour of the fourth or Lake Cargellico route. Independently, however, of the reason I have referred to, *viz.*, the discovery of gold deposits, there are others in favour of the Lake Cargellico route, which may be briefly summarised in the words of Mr. Surveyor Kennedy, whose report I will presently hand in. He says: "I think that the proposed line *via* the lake would be much easier to construct, open up better country (as against the direct or No. 3 line), and suit most people; the extra length by deviating to the lake would not at the greatest exceed 12 miles." There are other interesting remarks of Mr. Kennedy's pertinent to the subject, and which, with the permission of the Committee, I will read. He says: "On the whole line there would be no earthworks of any importance; in fact, there would only be forming for the whole distance, the curves need not be sharper than 20 chains radius. . . . Almost the whole of this line has the bright chocolate soil, the same as sample No. 1, along its route; with the exception of that portion along the Humbug Creek marked as sample No. 3, this soil is principally found in the Myall and Belar scrubs. The whole of the route is well settled, and the land is being rapidly taken up and cleared for agricultural purposes. Occasional belts of ironbark, gravelly ridges are passed along the route, and enough timber for sleepers could easily be procured close to the line; splendid ballast can be found adjacent to the line at the head of the Humbug Creek, Lake Cargellico, and the Willantry Bluff." I will hand in the same surveyor's report on the direct line (No. 3). It will give some interesting details to the Committee which I need not further refer to. I may mention, however, that in February of this year the Department received, through Mr. Rae, M.P., a letter from the Hillston Railway League conveying a resolution in favour of the direct route from Barmedman. This letter I will hand in. I have already pointed out the reasons for selecting the Cargellico route, and in all probability the real reason for the opposition of the people of Hillston is that they are afraid the line will stop at Lake Cargellico instead

J. Barling,
Esq.
9 April, 1894.

J. Barling, Esq.
9 April, 1894.

instead of going on to Hillston. With regard to the character of the country and its capabilities for settlement, I have obtained a report from Mr. McKinney, the Chief Engineer for Water Conservation, which, as it bears directly on the subject before the Committee, I will read. It is dated the 3rd instant:—

TEMORA TO LAKE CARGELICO.

Geological formation.

From Temora to Lake Cargelico, is a distance of about 96 miles in a direct line. For fully two-thirds of this distance the country is geologically of silurian formation, with extensive outcrops of eruptive rock. Throughout the greater part of the remaining distance, and extending to Lake Cargelico, Tertiary deposits are found. Quartz-veins are met with at Lake Cargelico, and it was at one time believed that there was a promising gold-field there.

Soil.

Throughout by far the greater part of the entire distance from Temora to Lake Cargelico the soil is a rich chocolate loam, covered as a rule with a dense growth of scrub. The valuable nature of this land is shown by the great progress of settlement throughout the district in recent years. The resumed areas of pastoral holdings have to a very large extent been taken up by selectors. For instance, in the case of the Hiawatha Run alone, an area of more than 40,000 acres was thus alienated within a period of eighteen months. The quality of the soil as to agricultural production has been tested thoroughly, and it has been proved that the soil is highly suitable for wheat and other crops.

Development of the district by irrigation.

Lake Cargelico is now a permanent source of water supply, and as the lake proper has an area of more than 4,000 acres, and much of the soil in its neighbourhood is well suited for irrigation, considerable development of the capabilities of the soil by this means may be looked for. Near the river Lachlan the soil is rich grey alluvium, sufficiently uniform as a rule to require little or no grading. The success of the Willandra Weir, which, besides diverting a large supply of water into the Willandra Billabong, holds back the water in the river Lachlan to a distance of about 14 miles, shows what can be done in the way of conserving the waters of the river Lachlan, and making them available for irrigation. The richness of the soil is exceptionally great, but this very feature makes the bush tracks almost impassable in wet weather. In the absence of railway communication the productiveness of the soil and the comparative abundance of water can be availed of only to a limited extent.

H. G. McK., Chief Engineer.

As the Minister informed Parliament, when submitting the resolution to refer the proposed line to this Committee, I saw Mr. Warden Slec, and I should like to read the few remarks made by that gentleman on the subject:—

THE proposed route is almost a level between Temora and Wyalong. No engineering skill or bridges required, with the exception of a few culverts.

The land will tap a large area of auriferous country as well as agricultural lands.

At present the population is about 12,000, but he thinks (say) about 1,500 would be ample for present prospects. Nevertheless there are great possibilities of alluvial ground being discovered within a few miles of Wyalong in a southerly and northerly direction.

Of course the future extension of the line would certainly tap the Lachlan River.

He is of opinion that sooner or later a large mining and agricultural population will inhabit these parts.

The permanency of the field will greatly depend on further development. His private opinion is that reefs at a greater depth will be found too small.

He considers that the line would tap an area of 20 miles on each side.

There is very little agricultural land at Wyalong, but there is really very fine land some little distance away—in fact, good country extends all the way to Mount Hope in the one direction, and Hillston in the other.

Mr. Slec feels confident that in the Wyalong district alluvial diggings will also be discovered. This is simply a part of a large auriferous country, and he thinks at any moment very much better reefs may be struck.

The average return of gold is at present about 2 oz. to the ton.

There are about thirty claims which have struck payable stuff, giving an average of six men to each claim, which means that 180 men are making wages now, and the others are just prospecting over the ground.

There are at least 1,000 at the present moment engaged prospecting, with every hope that something better will soon be discovered.

Gold has been struck over an area of 6 miles in length by 2 miles in width, and Mr. Slec considers there is an auriferous area of at least 30 miles in length by 10 miles in width, extending from Wyalong to Hillston, in which alluvial and reef gold may be struck at any moment.

Agricultural prospects.—There is a large area fit for wheat-growing extending over the whole of the district; that is to say, right on to Hillston, for at least 20 miles on each side.

Wyalong may be considered to be as the roof, as it were, of the dividing water-shed between the Murrumbidgee and Lachlan Rivers.

Of course, the evidence of Mr. Slec will be available, so I need not enlarge on his statements. I also hand in a map prepared by Mr. Saunders, the Chief Draughtsman of the Lands Department, which shows the land, starting 5 miles from Temora, and situated 20 miles on either side of the proposed line, and 20 miles to the north of the terminal point. The particulars are as follows: Freehold land, 112,750 acres; conditional purchases and conditional leases, 442,120 acres; reserved land, 260,750 acres; remaining Crown land, 451,100 acres; or in other words, of the whole area affected, 56 per cent. is Crown lands. The areas given are approximate. This map also shows that, with the exception of a little land at Temora, practically no land will have to be resumed for the entire length of the line from Temora to Wyalong, so that the question of land compensation may be entirely put aside. I have also obtained from Mr. Hickson a detailed estimate, giving the approximate cost of the construction of a road from Temora to Wyalong. The estimate is £69,100, and in the report Mr. Hickson says: "The country is very flat, so that draining on both sides will be necessary for the greater part of the distance." We have allowed a double track. The formation will be 20 feet, and the metalled portion 18 feet wide. The width of a single track roadway will give 12 feet of metal. It should here be noted that while this expenditure of £69,100 would produce no revenue, the construction of a railway, a greatly superior means of communication, would be at once revenue-producing. Mr. Russell, the Government Astronomer, has kindly supplied me with particulars of the rainfall, as noted at stations in the district affected by the proposed line. They are as follows:—

No. of years' observations.		Average Annual rainfall.	Greatest.	Least.
7	Cootamundra	26·34	40·78	12·07
11	Coombaning	21·16	37·08	10·75
11	Kildary	18·68	27·70	8·38
11	Wyalong	21·07	30·32	9·62
13	Temora	21·11	31·10	11·31
6	The Reefs	22·47	35·81	11·89

J. Darling,
Esq.
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I will now give the official description of the proposed line, which is dated 29th March:—

The line begins at the termination of the Cootamundra to Temora line, at 291 miles 63 chains 95·8 from Sydney, and passes through the town common at 293 miles 30 chains; thence it will occupy a portion of the main road to Barmedman up to 309 miles 10 chains, where it diverges from it to avoid rising ground. Barmedman Creek is crossed at 310 miles 63 chains, Crown land being traversed up to 311 miles 70 chains, where Barmedman Town Common is entered. To get a suitable site for the station the line bends westward, and passes through the unalienated township sections Nos. 21, 11, 10, and 1 successively. From thence it strikes generally in a direct line for Wyalong at about 331 miles.

A section has only been completed up to date to 312 miles, showing a surface line with easy grades and curves. No detailed estimate of this portion has been made, but it will not exceed £2,500 per mile. The ruling grade is 1 in 100.

As regards the rest, the section is not yet complete, but, judging from Mr. Kennedy's report, the cuttings will be light, and except at the south-west corner of Barmedman township, where a moderate cutting is encountered, and one other of shallow depth, it will also be a surface line. Three thousand pounds a mile should be sufficient for this portion, and the estimate, when the full information is to hand, will probably be less. The grades will be easy.

This survey is a portion of the Barmedman to Hillston, *via* Lake Cargellico, now being surveyed.

The length of this line is about 40 miles, and the further extension to Lake Cargellico is 66 miles, while that from Lake Cargellico to Hillston is 53 miles.

The total estimated cost is £110,000 to Wyalong.*

With regard to the survey of the line, the portion between Temora and Barmedman, a distance of 22½ miles, has been surveyed.

A line between Barmedman and Wyalong has also been surveyed to within 10 miles of the latter place, and in about another week the whole line to Wyalong will be marked out, but this will, of course, be subject to modification.

It will be observed by looking at a map of the Colony, that the line now proposed admirably spaces the country as between the Lachlan River and the Junee-Hay extension. The nearest point from Wyalong to the line of the Forbes to Wilcannia survey is 48 miles, and to the nearest point on the Junee-Hay line, 64 miles. As it may perhaps be useful to the Committee, I will give a table of the distances in connection with the proposed line. They are as follows:—

	Miles.
Sydney to Cootamundra.....	253
Cootamundra to Temora.....	35½
Temora to Barmedman.....	22½
Barmedman to Wyalong.....	17½
Wyalong to Hillston, <i>via</i> Cargellico.....	120
Forbes to Wyalong.....	60
Wyalong to the nearest point on the Forbes to Wilcannia.....	48
Wyalong to the nearest point on the Junee line.....	64
Forbes to Lake Cargellico and Hillston.....	144
Sydney to Wyalong.....	331½
Wyalong to Melbourne.....	401½

I am also to say that the Minister contemplates that the construction of the line shall be subject to the betterment principle, and that he hopes before the present Session is over the Bill giving effect thereto will have passed into law. I have one or two memoranda with regard to the subject of the wheat crop, which may be of some interest to the Committee. Mr. Coghlan has kindly given me some information on the subject. I have a letter from Mr. C. Wood Davis, a well-known economic writer in America, addressed to Mr. Coghlan, in which he deals with the wheat crop of the world, and which has a rather important bearing on the subject before us. In the first place, I may mention that the wheat-crop of the world, according to Mr. Coghlan's book, is 2,249,000,000 bushels. The production of the whole of Australasia is only 40,000,000 bushels. That is according to Mr. Coghlan's last returns, but I know it has been exceeded a little since then. That would only give 1½ per cent. of the whole wheat production of the world. I mention this to show how very little our production at present affects the market of the world. I find also that about 200,000,000 bushels are required by the importing countries of Europe, and it is an acknowledged fact that in the United States the growth of the population is proportionately greater than the increase of the area sown of this cereal. In Russia and Central Europe the consumption of wheat is also increasing. Of course it is well known that America is the great wheat-producing country of the world. Of the 2,249,000,000 bushels of wheat produced I see the United States production is 408,000,000 bushels. The letter of Mr. C. Wood Davis, reads as follows:—

My Dear Sir,

Peotone, Kansas, U.S.A., 24 February, 1894.

Permit me to thank you for copy of the *Wealth and Progress of New South Wales* you were so kind as to send me.

Enclosed I beg leave to hand you a recent communication to the *New York Sun*, in which the movement of population is shown by the increase in the number of farms during the last forty-three years. I have long desired to make this showing, but the Census figures relating to farm increase during the ninth decade are but now available.

I think this will interest you, as it shows the complete exhaustion of the arable portion of the public domain, and that the United States will soon have all it can do to supply food and fibre for its own people; hence will cease to compete with Australasia in supplying the wants of other peoples, and thus leave a wider field, that ensures high prices, to the other exporting countries.

I have just mailed to the *Sun* an article, in which I show by an analysis of official data that, with average crops, hereafter our export power must be confined to such products as cotton and tobacco.

I also enclose another article—appearing as an editorial in the *Sun*—in which I attempt to show that the industrial and commercial depression is due to the loss of purchasing power by the farmer. This is, I believe, the only logical conclusion, as it affects alike freetrade, protected, and gold and silver using countries. What else could result from abnormally low prices when half the labour of civilised people is employed in agriculture?

Yours truly,

C. WOOD DAVIS.

E. A. Coghlan, Esq., Government Statistician, Sydney, New South Wales.

I think that shows that the wheat industry is exceedingly promising in this country. I am well aware that at the present time the price of wheat is lower than it has been for something like two centuries, but the prospects show that there is every hope that the wheat industry here will improve and become one of our most promising industries. The following is from the *Sun* of 10th September, 1893:—

With prices of farm products again such as to afford fair remuneration for the labour and capital employed in production, as they presently must be by reason of the elimination of the world's acreage excess, the purchases of the 30,000,000 upon our farms will help to keep every spindle busy; labour in the towns will, at least for a time, be well employed; hoarding will cease, confidence will be restored, money become abundant, and an era of prosperity will result from the operation of that natural law which is the ultimate arbiter in determining the price of nearly every product of labour.

I quote this to show that there is every prospect that the wheat industry of the world will prosper. There is one other interesting fact which I may mention with regard to our wheat crop. I see that the area under crop with wheat in 1892-3 was 452,920 acres; in 1893-4, 622,320 acres—an advance of 169,400 acres, or nearly 40 per cent. increase. That is as far as the land is concerned. But as far as the

* NOTE (on revision):—Mr. Deane's revised estimate is £104,429 10s. 8d.

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the wheat production is concerned, though the figures I have given show an increase of about 40 per cent.—the actual figures being 37·4 per cent. over last year—the increased yield is only 15 per cent. greater. From this it seems that even with a very largely increased area of land, we are still 35 per cent. behind supplying our own needs.

2. *Mr. Wall.*] You have given us a return of the cost of constructing a road from Temora to Wyalong? Yes.
3. Do you know that there is a very large field opening up in Temora with a population of 7,000 or 8,000 people;—can you tell us how long that field was in existence before any money was expended on the roads? I could not answer that, but I know very well that we should not have spent anything like that amount of money there.
4. The Department states that this is an undulating country composed of chocolate soil? Yes.
5. This estimate is to construct a metal road, the whole of the distance from Temora to Wyalong? Yes.
6. Do the officers of the Department report on the necessity of the construction of a metal road for the whole of the distance? I do not think it will be necessary to construct a road at that cost, unless the Wyalong gold-fields become permanent.
7. Has such a thing ever been done in the Colony before in connection with any gold-field which has been opened? I do not remember.
8. We have the estimate of £69,000 for one work against £110,000 for the other;—are we to understand that it is intended to carry on the work? It all depends, of course, upon the developments which take place. There are 11,000 or 12,000 people at Wyalong now, and if the field turns out to be a permanent one, it is possible such an expenditure will be contemplated, but I cannot say it is contemplated now.
9. Do the officers of the Department point to the necessity of any such expenditure as that mentioned being required on the road? Not at present. I have merely given the cost of a road as compared with the cost of a railway.
10. Take the road from Temora to Cootamundra, which has been used for many years, has that amount of money been expended upon it? I should think not.
11. And it is a somewhat similar country? Yes. I did not wish to urge the argument, that if we do not construct the railway we shall have to construct an expensive road. Of course, that will depend very much upon future development.
12. Can you obtain from the officers of the Roads Department a report showing the actual urgent expenditure required at the present time on the road to make it trafficable? Yes. I think I have a report now. The Minister has granted a sum of £500 at the present moment.
13. Are we to infer from the report submitted to us that the construction of this line will cause a special development of the wheat industry in that particular part of the country? I should think it would stimulate the production of wheat there, but the main argument at present in favour of the line is the opening up of the gold-field. That, in conjunction with the probable extra supply of wheat, has determined the Minister in submitting the line for investigation.
14. Then we are to take it that the urgency of the construction of the line is to provide facilities to Wyalong, in consequence of the opening up of the field, and not for the purpose of wheat production? I have not the smallest doubt that this line would, in course of time, been have recommended purely from an agricultural point of view.
15. Of course, that is one of the prospective advantages, but that is not one of the reasons for the construction of the line? It is partly.
16. Do you know whether it is proposed to increase the price of land adjacent to the railway, as has been done in other cases where railways have been constructed? That is a matter for the Lands Department; but I may mention that immediately on the line being brought before the House, by the direction of the Secretary for Public Works, I addressed this note to Mr. Houston:—

My Dear Houston,

Department of Public Works, 30 March, 1894.

Mr. Lyne wishes me to ask you to move Mr. Copeland to reserve at once a mile on each side of our proposed line between Temora and Wyalong. The matter is very urgent indeed, in view of the resolution arrived at by the Assembly last night to refer the proposed work to the Public Works Committee for investigation.

Will you oblige Mr. Lyne by bringing this under Mr. Copeland's attention immediately?

Yours, &c.,

J. BARLING.

W. Houston, Esq., Under Secretary for Lands.

This is the reply:—

Sir,

Department of Lands, Sydney, 3 April, 1894.

With reference to your letter of the 30th ultimo, urging that a mile on each side of the proposed line of railway, Temora to Wyalong, be reserved, I am directed by the Secretary for Lands to inform you that a reserve already exists within one mile on each side of the line from Temora to Barmedman, and the line from Barmedman to Wyalong is almost wholly within leasehold areas, reservation of which is at present unnecessary. The Crown land in the immediate vicinity of Wyalong has been reserved from conditional purchase for gold-mining purposes.

I have, &c.,

WM. HOUSTON,

Under Secretary

(Per R.H.D.)

The Under Secretary for Public Works.

17. Has any request been made to the Lands Department to reserve land within 20 miles of the line? No.
18. With regard to the suggestion or request of the Under Secretary for Lands to reserve land within a mile, is not that the usual request preferred on the initiation of any line? Yes; it is done, I think, as an extra precaution.
19. And is not the object of that special reservation on each side of the line in order that the Government may realise a greater price for it? Undoubtedly; but with the Betterment Bill before the House I do not think the importance of the reservation is as great as it was before, because we shall be able to tax any alienated lands, provided the Bill is carried.
20. Speaking of those reservations—they exist in regard to most of the lines which have been constructed? I think so.
21. Are you aware that this, instead of promoting settlement, has had a tendency to prevent it;—has that been brought under the notice of your Department? I think it has; but, as I said before, I think the introduction of the betterment principle will take away from the argument against our reserving lands, because if the Bill were passed it would, I think, be quite safe to sell the lands.

22. You state that the object of reserving the land is to obtain a higher price for it in consequence of the railway facilities afforded, and the object of the betterment principle is to throw 75 per cent. of the cost of construction on the people who take the land;—if they do not take it under present circumstances without the betterment principle being in existence, is it likely that they will take it for settlement when they have to pay 75 per cent. of the cost of construction? Seventy-five per cent. is the maximum. I do not know what percentage will be fixed.
23. Is it intended to establish special rates along this line;—is that a matter which rests entirely with the Commissioners, or has the Department considered it? We have nothing to do with special rates; we do not take them into consideration at all.
24. Then you rely on the Department being recouped for any losses which may be entailed in connection with the construction of the line by the adoption of the betterment principle along with the special rate? I may mention a fact which occurred in connection with the Glen Innes to Inverell line, that the resolution was passed by Parliament with the provision that the betterment principle should apply, and that special local rates should be levied until the line paid working expenses.
25. Apart from the recent discovery of gold at Wyalong, did the Department regard the proposed line as an immediately important work? I should not like to say it would not have been taken up now if there had been no gold discovered. The surveys we have made from Barmedman to Hillston show that we have thought the construction of the line to be of sufficient importance to justify a survey being made.
26. Have you any idea of the present settlement in and around Hillston? No. I have the population apart from the extraordinary population which has recently arisen. At Temora the population is 915, at Barmedman, 176. I should say that it is less at Hillston, but the total population of the whole county of Bland is 4,571. That, of course, was before the gold rush took place.
27. Can you tell us whether the Temora line is paying? I have asked that question, but I have not received an answer yet.
28. What was the cost of the Temora line per mile when completed? About £4,000; but the country to Wyalong will be very much easier. Again, I do not think it is proposed to fence the line between Temora and Wyalong, whereas the Cootamundra to Temora line is fenced.
29. *Mr. Davies.*] I understand you to say that the whole of the lands through which the line will pass will be Crown or leased lands? Yes.
30. So that there can be no claim for compensation? There will be just a little at Temora.
31. Would the leaseholders be entitled to some compensation for severance? I do not think so. In this case it is all reserved land. There will be no compensation of any kind. There will be no charge or cost incurred for the resumption of land.
32. What is the total estimated cost of the line? £110,000 for 40 miles of line from Temora to Wyalong.
33. The Crown lands will be much increased in value by the construction of the line? There is no doubt about that.
34. Is it intended that the trains over the line shall run at the ordinary speed or at a reduced speed? We shall have 60 lb. rails on the line. We do not propose to fence it. Certainly if the trains run at night they would have to do so at a reduced speed.
35. Can plenty of sleepers be obtained? Yes.
36. Will the line be of the same gauge as the existing line to Temora? Yes.

J. Barling,
Esq.
9 April, 1894.

Henry Deane, Esq., M.I.C.E., Engineer-in-Chief, Railway Construction Branch, Department of Public Works, sworn, and examined:—

37. *Chairman.*] Do you propose to make a detailed statement as to the line before the Committee proceed to examine you? I have already made a report, which I think the Under Secretary for Public Works has embodied in his statement. I might, perhaps, read a description of the line. I have more information now than I had when the line was submitted. The length is reduced a little. From Temora to Wyalong it will be 38 miles 46 chains. The estimated cost of constructing this as a light line of railway is £104,480, or £2,707 per mile, exclusive of cost of land and compensation. This line begins at the termination of the Cootamundra to Temora line, at 291 miles 64 chains, and runs chiefly along the side of the main road to within about 4 miles of Barmedman. It passes on the west side of the township, and thence strikes almost direct, mainly along the public road, for the township of Wyalong, where it ends on its southern boundary at 330 miles 30 chains from Sydney. The country is nearly flat throughout, and there are no expensive works. The steepest grade is 1 in 100.
38. What are the authorities going to do for a road when you have monopolised it for a railway? The road is 3 chains wide, so that there ought to be room for both.
39. *Mr. Hoskins.*] Have you had careful surveys made of the proposed line between Cootamundra and Barmedman? Yes; the survey goes nearly along the road the whole of the survey.
40. Are there any streams of water or creeks to cross? Nothing of any importance.
41. Then ordinary sized culverts will carry off the water? Yes; small timber openings, and what are called open waterways and box drains will be sufficient.
42. Is there plenty of timber in the neighbourhood suitable for sleepers—ironbark or blue-gum? Yes.
43. How far will the timber be from the proposed line? A good many of the sleepers which were used on the Cootamundra to Temora line came from the neighbourhood of Barmedman, and I think the ironbark which exists about there will be sufficient to afford sleepers for the proposed line. I propose to use a cheaper kind of sleeper than was used on the Temora line. The Temora line had rectangular sleepers. I propose to use a class of sleeper, such as has been supplied at Narrabri lately under a contract there, mostly round on the top. The sap wood has not been stripped off. They are at least 9 inches wide, and some of them are wider. There is a large quantity of timber, and they make capital sleepers, and are much cheaper than the ordinary kind.
44. Do you believe that if those sleepers were used they would be no more liable to shift than the ordinary square sleepers? They are quite as good in that respect.
45. What depth of ballast do you propose to put on the line? It will work out to about 5 inches—the same as that I propose for the Morco line—1,200 cubic yards per mile.
46. And you intend to have 5 inches of ballast under the sleepers? Yes; and it runs a little way up the side of the sleeper.

H. Deane,
Esq., M.I.C.E.
9 April, 1894.

- H. Deane, Esq., M.I.C.E.
9 April, 1894.
47. Have your officers made any explorations with a view of ascertaining whether there is good material for ballast in the neighbourhood? No, I do not think that has been done; but ballast could be obtained from the Temora line, and I infer that there will be ballast in this neighbourhood as well.
48. And even if it is not very plentiful, you could bring some of it from the neighbourhood of the Temora line? Yes.
49. What kind of station buildings do you propose to have? I put down a certain amount for station buildings, but it will have to be left to the Railway Commissioners to decide exactly what class shall be constructed. I based my estimate on those on the Narrabri to Moree line, and there timber is used. The cheapest possible description of buildings will be put up.
50. Then you propose, subject to the approval of the Railway Commissioners, to have weather-board stations and goods sheds? Yes.
51. Do you know whether there are quantities of suitable timber to be obtained at a reasonable price in the vicinity of the proposed line? I think there is some pine.
52. And the pine obtained in that locality and on the Lachlan is very efficacious in restricting the ravages of white ants? Yes.
53. Then the surveys which have been made between Temora and Barmedman are sufficiently accurate, I suppose, to enable the Department to call for tenders for the construction of that portion of the work in how long a time? There is no reason why tenders should not be called in a very short time. It would not be possible to stake out the line in the usual manner. I think, if Parliament required that the tenders should be called very shortly, I should have to make certain provisions in the specification to give the contractor a certain amount of latitude, limiting him as to the height of bank and so on—that is to say, to make him put a minimum of bank; but I could not, within a very short time, give him levels all the way along the road and pegs in the usual manner.
54. Can you give an idea as to the time in which you can have tenders called, if Parliament sanctions the work, for the construction of a line from Temora to Barmedman? If it were looked upon as an urgent matter, and the work had to be done in that way, I think I could call for tenders within a month—certainly as soon as a line could be passed by Parliament—perhaps a little sooner, if necessary.
55. You think then that if Parliament sanctioned the construction of the line or a portion of it, you might be able to call for tenders for the construction of the line between Temora and Barmedman within a month? Within a month from to-day, if I had instructions to do so.
56. What description of rail do you propose to use? Sixty-lb. steel rail, flat bottomed.
57. Do you propose to use chairs? No; the rails will rest on the sleepers.
58. Then the idea is that there will have to be a moderate or slow rate of speed, say 15 or 16 miles an hour as a maximum? Yes; it would be to all intents and purposes a very good line, but it would not be a high speed line.
59. Would it be safe to run at the rate of 20 miles an hour? I think so.
60. The surveys of the proposed line from Barmedman to Wyalong are not in such an advanced state as those from Temora to Barmedman? I received a section of the line this morning, and I hope in a few days to be able to furnish it to the Committee.
61. Supposing the Committee recommended Parliament, and Parliament approved of their recommendation, to construct a railway from Barmedman to Wyalong, how long do you think it would take you to have the line in a sufficiently advanced state to call for tenders for it? I should like another month for that.
62. Could the ordinary rolling stock run over the proposed line safely? Yes; I should say I would very much prefer to have a proper section and proper pegs put in in the usual manner, because it would in the end be a saving in constructing. But if it were pushed, it could be done as I state.
63. How long do you think it would take you to stake out the road, in order that you might let the contract in the usual way between Temora and Barmedman? By putting on a number of surveyors, I think it could be done in two or three months more.
64. *Chairman.*] What is the grade of the line? One in 100.
65. Is there not a steeper grade than that going into Barmedman? No; it can be cut out.
66. *Mr. Trickett.*] How does the country the line has to traverse compare with the country from Cootamundra to Temora? It is much-smoother, easier, and less expensive for the construction of the line. For instance, the first part to Barmedman is a surface line throughout until you get close to Barmedman. There is not a cutting in it.
67. Will not that, being very level, necessitate considerable expense for draining? I think not. Where there are little watercourses we can run the water across the line by putting down box drains, or open watercourses at frequent intervals.
68. And those are inexpensive? Yes.
69. You have not the section from Barmedman to Wyalong? No.
70. Is that much more undulating country? It is very much the same. There is only one rise where there will be anything of a cutting.
71. When the line from Cootamundra to Temora was authorised the Committee imposed a condition that it should not exceed a certain sum per mile—I think it was £3,300? Yes.
72. Was that exceeded? Yes.
73. To what extent? It has cost between £3,800 and £3,900.
74. Why was it so much more expensive? It was impossible to make it for less. My estimate, if I remember rightly, was £3,650, and I expected to be able to do it for that. But there have been some increases of side cutting which have been necessary to keep the formation up. This is in soft country where the embankments have compressed the ground underneath. I was rather concerned about one portion because the quantities were running up so high, and I sent an officer down specially to examine, measure, and report. That is one reason, but there are others. The accounts have not yet been made up, and therefore I have not investigated the matter thoroughly.
75. Do you think £2,700 will be the ultimate cost per mile of the proposed line? Yes; it can be kept down to that. In fact, with the Temora line I would have limited the earthworks and let the banks go down. I do not think there would have been any serious consequences. In the case of the proposed line the work would be let at so much a chain or so much a mile, and the contractor would see that not more than the quantities estimated for are put on.
76. It is not proposed to fence the line? No.

77. Is the nature of the soil similar to that between Narrabri and Moree? No; there is more red soil.
78. But I mean in regard to the ballast required;—would the ballast sink in? There would be the same fear, because certain portions of the Narrabri to Moree line are over black soil.
79. Do you think 5 inches of ballast would be sufficient? Yes. I should like to express the same opinion about this kind of construction for the proposed line as I did about the Moree line. I should prefer to make it stronger, but to meet the demand for cheap railways I think it can fairly and safely be done in this way.
80. Have you seen the line which was constructed from Broken Hill to Tarrawingee? Yes.
81. Is that a ballasted line? Yes; I think it is sand ballast chiefly, or fine shingle or coarse sand from Stephen's Creek and other watercourses.
82. That is a surface railway, is it not? It is not so much a surface railway as this would be. There are banks and cuttings in places. A portion of the country is very level, but there are banks and cuttings upon the line.
83. The estimated cost of the Narrabri to Moree line was, I think, £2,400 a mile? Two thousand four hundred and seventy pounds was the estimated cost of the last portion.
84. Does it not strike you that the proposed line should be a less expensive one than the line from Narrabri to Moree, considering the difficulties in the shape of floods and washaways on the Moree line? I will explain where the difference comes in. One cause of difference is the difference in length, so that the terminal arrangements are divided over a greater length than in the case of the Moree line. Some of the items are less.
85. Are parts of the Narrabri and Moree line much more expensive than other parts? I divided that line into two sections. In the first section the average per mile came to £5,056, and the other portion was £2,470—something like the proposed line. The permanent way materials for the proposed line I have put down at a little more, and the reason for that is that special arrangements were made with the Commissioners about freight, and so on, in regard to the Narrabri-Moree line; and, pending similar arrangements being made in the present instance, I have taken the freight on the permanent way materials at the recognised value of 2d. per ton per mile. My arrangements with the Commissioners have been chiefly that freight is to be charged at 2d. per ton per mile unless there is return freight. If there is return freight only 1d. is to be charged; but in this instance, if the work is to be pushed on, I think it would not be fair to expect the Railway Commissioners to use the 1d. rate, because there would be no return freight.
86. And that makes a considerable difference? That makes a good deal of difference. On the other hand, the prices of materials in England have gone down, and it is possible that I may be able to lower the estimate accordingly.
87. You think it possible, then, that you may construct the line for less than £2,700 per mile? I might possibly be able to lower the cost of the permanent way materials. The next item where I have an increase of about £100 a mile is in the laying and ballasting of the sleepers. I put the laying down at a little more—1s. 6d. instead of 1s. 3d., and I have put the sleepers rather higher—3s. instead of 2s. 6d. Taking it altogether I should not consider the Temora district as good a district for getting sleepers as the Narrabri district. The timber is not so good nor so straight as it is in the forests near Narrabri, and I think it would be fair to put a little more on the price; but even sleepers at 3s. would be very cheap. Several small items divided by the mileage of the Wyalong line bring a higher result than in the case of the Moree line. For instance, it would be necessary to make provision for water supply. I have not made up my mind yet where water is to be obtained, but in the case of Moree I have put down £3,000, and I put down £3,000 in the case of Wyalong, there having to be in each case two water stations on the road. Three thousand pounds divided by 60 is only about two-thirds of what it is if divided by 40. That makes a difference of £27 per mile.
88. And those are the chief items of difference? Yes.
89. Considering that this work, if constructed at all, may be regarded as a very urgent one, what time would you say should be allowed for construction from Temora to Wyalong? If we had the rails and a pushing contractor I think we could do it in six months.
90. That would be something very uncommon in railway construction? Yes. The Temora line was done in thirteen months; that is the quickest piece of work up to the present, and this is about the same length.
91. *Mr. Neild.*] Do you think it absolutely essential to use ballast on the line, seeing that there is a large mileage in America where no ballast is used? Yes; I prefer ballast.
92. Have you given any attention to the system which is in operation on some parts of the Continent known as the Balk System, with longitudinal sleepers and iron ties? Yes; the longitudinal sleepers are not anything so good as the cross sleepers; you do not get the same amount of bearing surface.
93. But there would be a considerable diminution in expense? I very much doubt it, because with longitudinal sleepers you have to trim the timber all the way along, and then you have to fix your ties. Where you have transverse sleepers you run them through a machine and you have the grooves made for the rails to fit in; and having such good hardwood timber it would be out of the question to use soft wood. If you attempted to use hard wood for longitudinal sleepers they would curl about frightfully. You would soon have a track which would be quite useless.
94. You do not propose to fence the line? No; I have only included a small sum for fencing.
95. Do you not think there would be considerable inconvenience to vehicular traffic on the road by reason of the trains running along the road without a fence? I propose to put the line close alongside the boundary of the road, so that the rest of the road, being over 2 chains wide, would practically be quite clear for the other traffic.
96. Then you do not think the line would materially interfere with the road? No.
97. Are you not likely to have accidents with teams scared by the trains passing so close without any intervening fence? I think not.
98. I suppose the line would cross and recross the road in places, necessitating the construction of a good deal of roadway to make up for the portions occupied by the tracks? No; the road is pretty straight nearly all the way. There are few curves, and they can easily be managed.
99. Then you think the construction of the railway would not necessitate any large expenditure upon the present roadway? I do not think it would. The road is a very straight one.
100. Do you know the country from Wyalong to Barmedman? Yes; but I have not been over it.
101. Has the line from Cargellico to the Lachlan the best approach? The line *via* Cargellico would be the best approach to the Lachlan.
- 102-3. Better than the southern line shown on the map in pencil? Yes. The dotted red line on the plan practically avoids all the difficult country.

H. Deane,
Esq., M.I.C.E.
9 April, 1894.

- H. Deane,
Esq., M.I.C.E.
9 April, 1894.
104. In your opinion, then, if there is an extension to Wyalong, you think it will follow the dotted line on the plan to the Lachlan? Yes.
105. *Mr. Humphery.*] In what respect will the proposed extension differ from the line from Cootamundra to Temora? The country is very much easier for the railway construction. The country between Cootamundra and Temora for the most part is undulating.
106. I am speaking of the difference in the weight of rails and sleepers? I should use the same weight of rails and the same number of sleepers to the mile, but I should use sleepers of an inferior quality—of ironbark, of course, but not so carefully shaped, and less ballast.
107. When you say inferior quality, do you mean that the timber itself will be inferior? No; I shall spend less money upon dressing it.
108. Will the durability of the sleepers be lessened? No; it will probably be exactly the same.
109. In what respect will they be inferior? Being less shapely they cost less money.
110. Will the stability of the line be affected by substituting the sleepers for those you propose to use for those generally used? No.
111. It will be an equally good line? I cannot say it will be an equally good line because the rails do not have the same amount of bearing surface, but it is quite good enough for the traffic.
112. Will it cost more to maintain and keep in repair? I do not think so—not on account of sleepers; and I do not think it need cost much more to repair on other accounts if the speed is kept down. A line that is deficiently ballasted, of course, would be liable to greater charges for repairs than one that has plenty of ballast and good formation. Cheapness of construction as a rule means higher maintenance charges. That is very well understood.
113. Having understood that, I wish to know from you in what respect the line would be more costly to maintain than the line from Cootamundra to Temora. I imagine that if the traffic were exactly the same over the Cootamundra to Temora line as over the Temora to Wyalong line, the maintenance would be higher on the Temora to Wyalong line, because it would require more attention.
114. What do you think is the rate of speed which should be traversed over the proposed extension, and the weight of the engines which should be used? From 15 to 20 miles an hour would be sufficient. I think the engines should be limited to those which have an axle load of between 10 and 12 tons.
115. Do you know what engines are being used between Cootamundra and Temora? No.
116. Therefore you are unable to say whether they could be safely used over the proposed extension? No.*
117. *Mr. Collins.*] Seeing that the line from Temora to Wyalong will cost more to keep in repair than the line from Cootamundra to Temora, do you think the Railway Commissioners will be agreeable to take it over on those conditions? The Railway Commissioners have, for the last two or three years, advocated cheap lines.
118. Notwithstanding that they cost more to keep in repair? I suppose they have looked at it from every point of view.
119. *Mr. Davies.*] I think you say your previous surveys have not gone beyond Barmedman? Yes; Mr. Gillett has been working between Barmedman and Wyalong.
120. Before the gold-field was discovered you had made surveys in a different direction, had you not? No; Mr. Gillett commenced to work under instructions to work towards Lake Cargellico?
121. He was not sent out to run a line to Wyalong, but to run a line to Lake Cargellico. Some time ago the Minister authorised an examination of the line from Barmedman to Hillston. I sent Mr. Kennedy, and he recommended the line *via* Lake Cargellico. As a result of his report, I recommended to the Minister that the line should be run from Barmedman to Lake Cargellico, and thence to Hillston. The Minister approved, and I sent Mr. Gillett to Barmedman to start from that end, and Mr. Marshall to Hillston to start from that end to meet him.
122. What was the character of the surveys made from Barmedman to Hillston, not by way of Wyalong, but the previous survey? The ordinary trial survey.
123. Did they pass through the same character of country, or was it better country than that which it is proposed to tap by going *via* Wyalong? It is reported not to be so good, and the construction will be more costly. As you see from the plan, you have to pass about three ranges.
124. What is the cost of 60-lb. rails per ton? Hitherto, it has come to about £6 per ton, delivered in Sydney.
125. Has not the Department recently been able to secure a large line of steel rails at a very low rate? A very favourable quotation was received.
126. At what price? With all charges, it will come up to £4 10s., delivered in Sydney. I might say that it is not quite clear whether the rails offered are from Cleveland ore. I presume they are from hematite ore; but if the tender is accepted, it will have to be on the condition that the rails are made from hematite ore, with the usual acknowledged specification.
127. Will this be the cheapest line of railway, with a 60-lb. rail, you have been able to secure at any time? Yes.
128. At what did you calculate the price per ton of the rails laid between Narrabri and Moree? The new rails were reckoned at £6 per ton. The others were re-rolled rails. Some of them we had taken over from the Commissioners' account at £5 10s.
129. What will be the difference in the rails on the proposed line, taking them at £4 per ton, as against £6 per ton on the Moree line? The cost of the rails, reckoning the most recent quotation in Sydney, would be £20,171—that is, without freight. The freight, at 2d. per ton per mile, would be £255 17s. 1d. per mile. The cost of the 60-lb. rails, taking it at £6 2s. 6d. per ton, which was one of the most recent calculations, comes to £674 per mile, and taking it at the newer calculation, it comes to £522 per mile, so that there is a saving of £150 per mile.
130. You propose to lay your sleepers on 5 inches of ballast? Yes.
131. What ballast do you propose to put between the beds of your sleepers? It will come half-way up the sleepers.
132. Is it to be broken ballast, or drift from the river beds? It will probably be broken ballast. There may be some quartz obtainable from the ridges. We had some on the Temora line.

TUESDAY,

* NOTE (on revision):—I believe instructions have been given only to use, on the Temora line, engines having a maximum axle load of 12 tons.

TUESDAY, 10 APRIL, 1894.

Present:—

JACOB GARRARD, Esq. (CHAIRMAN).

The Hon. WILLIAM HENRY SUTTOR.	WILLIAM CHANDOS WALL, Esq.
The Hon. JAMES HOSKINS.	WILLIAM McCOURT, Esq.
The Hon. FREDERICK THOMAS HUMPHREY.	JOHN CASH NEILD, Esq.
The Hon. JOHN DAVIES, C.M.G.	EDWARD WILLIAM O'SULLIVAN, Esq.
The Hon. WILLIAM JOSEPH TRICKETT.	CHARLES COLLINS, Esq.
THOMAS THOMSON EWING, Esq.	HENRY DAWSON, Esq.

The Committee further considered the proposed Railway from Temora to Wyalong.

Joseph Barling, Esq., Under Secretary, Department of Public Works, sworn, and further examined:—

133. *Chairman.*] You are aware that the Public Works Act provides that in the case of a proposed railway or tramway the Department shall submit to the Public Works Committee a map or plan of the proposed line, together with a book of reference, and a report from the Railway Commissioners, giving an estimate of its probable cost, together with the cost of maintenance, and so on;—that report was not put in yesterday? I am not in a position to say when it will be ready; but I hope to have it next week. J. Barling,
Esq.
10 April, 1894.
134. Is not the Chief Commissioner at present absent in Tasmania? Yes; but I do not think he will be there very long.
135. Then the report will have to wait over until he comes back? Yes. The Commissioners, I believe, have not had time to make their report yet, and I understand, though I am not certain on the point, that they wish to visit the district through which the proposed line will pass. That, however, will not take very long. The peculiar circumstances of this case demanded that we should do all we could to get it before the Committee because Parliament will soon come to a close, and unless we advance the work at every stage as far as possible, it cannot be dealt with. We are doing our very best, and I hope to be able to furnish the report next week.
136. Knowing the feeling of the Legislature in regard to it, the Committee have taken up this work out of its turn, and no delay will occur through our action? Yes; but I think we have done all we could towards pushing it on.

Charles James Saunders, Esq., Chief Draftsman, Department of Lands, sworn, and examined:—

137. *Chairman.*] The Committee understand that you have prepared a compilation of county maps in the Temora and Wyalong district, upon which the freehold land is shown coloured red, the conditionally purchased and conditionally leased lands as blue, the reserves as green, and the Crown land unalienated and not dealt with in any way as white? Yes. C. J.
Saunders,
Esq.
10 April, 1894.
138. The map takes in an area extending 20 miles on each side of the proposed line, beginning 5 miles north of Temora, and extending about 20 miles north of Wyalong? That is so.
139. The area shown upon it is—Freehold land, 112,750 acres; conditionally purchased and conditionally leased land, 442,120 acres; reserves, 260,750 acres; unalienated Crown land, 451,100 acres; a total of 1,266,720 acres;—is that so? Yes; that is the case.
140. Is this return, so far as you are concerned, up to date? I think it can be regarded as fairly up to date.
141. How long is it since you last received information from the local Land Office? We are generally within a few weeks of the local offices.
142. You know nothing of the country yourself? Nothing personally.
143. You have never been there? No.
144. Would you like to give the Committee an opinion as to what you think would be the increase in value of Crown land in the district if the proposed line were constructed? I do not think I could venture on that.
145. Do you know if a request has been made to your Department by the Works Department to reserve the land along the proposed line? A request was sent to us.
146. Asking you to reserve how much? To make the usual reserve of 1 mile on each side of the line.
147. There was no request from the Works Department to reserve from sale the whole of the land shown on the coloured part of your map pending the completion of this inquiry? I have not seen a request of that sort.
148. Do you know whether the Lands Department have taken any steps on its own motion to make such a reservation? I am not aware of such a reservation having been made. A couple of large reserves have been made in the neighbourhood of Wyalong.
149. Are they shown on the plan? Yes.
150. You are not aware whether the Secretary for Works or the Secretary for Lands have taken steps to comply with what appeared to be the general request of the Assembly, namely, to reserve the whole of the land in the district pending the decision of this Committee? I am not aware that they have, but of course steps might have been taken without my knowledge. Most of the Crown lands in this locality lie within the leasehold areas. The existing leaseholds terminate in 1895, and in the majority of cases applications have been made for an extension of lease. Those applications have not yet been disposed of.
151. Has the Department decided on its policy with respect to the leases in the Central Division? No; I think the matter is awaiting further legislation.
152. You do not know anything as to the direction of that legislation? Nothing at all.
153. *Mr. Neild.*] Is it customary for your Department to raise the price of land through which a railway has been taken? I believe that it is customary.
154. By creating reserved areas? By proclaiming special areas.
155. Unless special areas are proclaimed the price of the land is fixed by statute? Yes.
156. *Mr. Wall.*] Can you give us, approximately, the area reserved at Wyalong for gold-mining purposes? Looking at the map, I should say that about 50,000 acres have been reserved.

- C. J. Saunders, Esq.
10 April, 1894.
157. Are those reservations made subject to alienation under the 48th section of the Act, or is the land entirely reserved from conditional purchase? The land is reserved from conditional purchase and conditional lease.
158. You are talking of the land in the vicinity of Wyalong? Yes; land in the immediate vicinity of Wyalong.
159. That land will not be open for selection or settlement until the reserves have been revoked? That is so.
160. *Mr. Trickett.*] I suppose you know what quantity of land has been alienated within the last three years between Cootamundra and Temora? I cannot say that I have taken particular notice of that locality.
161. One of the recommendations in favour of the line from Cootamundra to Temora was that settlement and cultivation would follow its construction;—can you say whether that has happened? I feel certain, without having looked into the matter, that nearly all the land in the vicinity of the line has been sold.
162. Since the construction of the railway? I should not like to say that.
163. Have you any knowledge as to the nature of the settlement? I could not tell you anything in regard to it.
164. What officer would be able, from local knowledge, to give us information on the point? Most of that land is dealt with by the District Surveyor at Forbes, but the land between Cootamundra and Temora is dealt with by the District Surveyor at Wagga.
165. Will you kindly get us, as soon as possible, a return showing what area of Government land has been alienated between Cootamundra and Temora since the construction of the railway, the average price paid for it, and the increase in settlement there? Within 20 miles on each side of the line?
166. Yes? I will.
167. *Mr. Wall.*] Can you tell us what area was reserved along the Temora line when it was being constructed? I think we reserved the land within 1 mile of the line.
168. Has that land, or any portion of it, been alienated since the construction of the line; if so, what price was paid for it? I will find that out for you.
169. *Mr. Ewing.*] This land is in the Central Division, you say, and most of the unalienated Crown land forms part of the leasehold areas there; but are not the rights of the pastoral holders to this land now under dispute? What rights—the right to an extension of lease?
170. Or something further? I do not know what further rights they may have.
171. The pastoralists may, under the existing law, be entitled to hold that land for some time? That is the matter which is hung up at the present moment.
172. So that in 1895 this land may not come into the occupation of the Crown? It may not. The leaseholders may get an extension of their leases.
173. You do not know how the land will stand? No one can say now how it will stand then.
174. *Mr. Humphery.*] Can you tell me if the gold-field reserve at Temora, or any portion of it, has been thrown open to selection? I could not say without looking into the matter.
175. Do you know if there are several reserves between Temora and Cootamundra? Yes.
176. Were there some at the time the Committee recommended the construction of the Temora line, four years ago? Yes; there must have been some large reserves then.
177. Can you say whether any of them have been thrown open for selection? I think some of them have been.
178. Will you supply us with information showing what reserves have been thrown open for selection, and the area selected since April, 1890, within, say, 20 miles of the line between Temora and Cootamundra? Yes.

William Henry John Slee, Esq., Chief Inspector of Mines, Department of Mines, sworn, and examined:—

- W. H. J. Slee, Esq.
10 April, 1894.
179. *Mr. Wall.*] You recently visited Wyalong? Yes.
180. And furnished a report in regard to the gold-field there? Yes.
181. Have you any doubt as to the permanency of that gold-field? None whatever.
182. I think you stated in that report that the auriferous belt extends over a tract of country 5 miles by 2? That is the belt at present being worked.
183. There have been some crushings on the field? Yes.
184. From how many different lines have those crushings been taken? They have been taken from thirteen different claims, and several different lines of reef.
185. What is the size of the reefs? They are very small.
186. Have they been decided to any depth? They have not. The deepest sunk upon is about 100 feet.
187. They have continued to that depth? They have continued to that depth.
188. Have they cut out in any case where they have been sunk on? No.
189. The Lands Department have reserved, I believe, about 50,000 acres in the vicinity of Wyalong;—was that reserve made on the recommendation of the Mines Department? It was not made on my recommendation. I am not aware whether it was made on the recommendation of the Mines Department.
190. Are you aware that 50,000 acres of land there have been locked up from settlement? I am not aware of it.
191. You think it is necessary for the development of the mining industry there that such a large area of land should be locked up from settlement? I think it could be locked up to a certain extent, because there are miles and miles of auriferous country to which a rush might take place at any moment.
192. But has not the Department, under the 48th section of the Act, power to deal with the whole of that land so that it may be available for both mining and agriculture? It has power to give permits to search for gold, but not power to give a title.
193. If the land is proved to be auriferous, the Department has power to resume it upon paying compensation? Yes; compensation according to the Land Board's decision.
194. Has any alluvial discoveries been made at Wyalong? I believe not, up to date.
195. Several prospecting shafts have been sunk? Yes.
196. At what depth have they reached the rock? About 35 feet is the deepest I have known, although they have sunk through the rock, thinking at the time that it was not bed-rock.
197. What is the nature of the rock? Decomposed granite.

198. Is not decomposed granite considered rather below the stratigraphical position in which permanent reefs are discovered? Not necessarily; but it is very seldom that reefs in granite formation carry down to any depth.

199. Unless the granite hardens? There is a great probability of the reef pinching out, or becoming refractory.

200. Do you regard this as part of the belt of country which extends to Hillston? It extends to Hillston, Billy's Lookout, Wollongough, Melrose Plains, and right out to Burra Burra. I have been through it for miles.

201. Is it of the same nature as the country round Yalgogrin? It is not the same in geological formation at Yalgogrin. The ground there is composed of quartzites, also slates and granite.

202. We were told yesterday that the country you have described extends in the direction of Mount Hope? Yes.

203. Would it go so far as Cobar? No; but it goes to Lake Cowal, Billy's Lookout, Yalgogrin, and Melrose Plains. A rush might take place to that country at any moment.

204. Mr. Wilkinson furnished a report some time ago with regard to the alluvial deposits in that part of the country? Yes; at Billy's Lookout.

205. He did not anticipate that any considerable deposits would be found there, because of the limited denudation? But at the same time he stated that further to the south, where Wyalong is now, deposits might be discovered.

206. What is the nature of the rock they struck at a depth of 100 feet? Decomposed granite. There is also diorite at Wyalong; but no reefs have been found in it.

207. Did you not report on some field on the southern line recently? You mean the Grong Grong field? No; I have not been there.

208. You regard Wyalong as a field likely to furnish employment for a large number of miners for some time to come? Yes, for years to come. I believe that better reefs will be discovered, and that more reefs will be worked in a short time.

209. The reefs opened up in the vicinity of Barmedman have been rather erratic in their character? Yes.

210. Are there any that can be termed permanent reefs? No.

211. The same may be said with regard to the reefs at Temora? The heavy flow of water has greatly hindered the reefs at Barmedman from being worked.

212. Considerable amount of reefing is done in the vicinity of Temora? Yes.

213. That is also a granite and diorite country? Yes.

214. Those reefs were very promising to a shallow depth? Yes. Some of the shoots were, perhaps, 6 feet in length, whereas the reef showed 100 yards in length.

215. In the reefs opened up at Wyalong the enclosing stratum is soft;—there will be no difficulty in testing those reefs? None whatever.

216. Have those who are prospecting there evinced a desire to test the reefs to a depth? Most of those reefs are not in the hands of mining men. They are in the hands of selectors and farmers who have not done much mining work.

217. You have dealt with a good many disputes at Wyalong arising out of the administration of your Department? Yes.

218. Is there any truth in the rumour that has been circulated that practically the whole of Wyalong has been taken up by a syndicate from Barmedman, and that in consequence of their names appearing on so many applications the Department asked them to substitute other names? No; I believe not. One party, perhaps, have applied for several permits, and the Department, through my recommendation, has asked them to substitute other names to prevent what might be considered a monopoly. I have not heard of any syndicates there.

219. But would not this privilege of substituting other names have the effect of placing the field in the hands of a few persons? No. As soon as the permits are granted the cancellation of the selections will take place, and each party must make his title good by a miner's right, and must, therefore, employ a large number of persons.

220. But I understand the position to be this:—Several persons have made applications for a number of permits, and they will have the privilege of substituting other names for their own? I believe so.

221. Will that not enable a small number of people to hold a large part of the field? It will give them the right to do so if they provide substitutes to work for them. The people coming there do not come from Barmedman alone, but from all parts of the country.

222. Is the selection on which gold was discovered at present in course of cancellation? Yes.

223. Is the greater part of it covered by permit applications? I believe that about one-third of it has been applied for, and that two-thirds of it will be available when cancellation takes place.

224. Any that remains will be Crown land, subject to application in the usual way? Yes; very little prospecting is carried on until application permits have been granted.

225. Is it the intention of the Department to give persons holding permits the right to apply for leases or to give them ordinary claims or prospecting claims? So far as I know they are to have ordinary claims held under a miner's right; but I cannot say for certain.

226. If claims are held in that form, employment must be given to a large number of people? Yes; I have recommended that the land should be taken up under miners' rights.

227. You have no doubt that the present development warrants you in stating that the field is likely to be a permanent one? Taking the whole of the surroundings I think the field will be permanent.

228. Is there any difficulty in obtaining water for machinery and the necessary treatment of the stuff? I believe that water for crushing purposes can be obtained by sinking no distance from the present reefs on Crown land within a mile of the surveyed township.

229. Is there any truth in the statement that has been circulated in the press that there is only one water catchment at Wyalong? No; there are several water catchments there.

230. You do not think any delay in the development of the field is likely to be caused by the want of water? I do not think so. During the last forty years I have seen fields much worse off for water than this is.

231. When visiting Wyalong which way did you go? From Sydney to Temora and through Barmedman.

232. Did you find the road in a very bad condition? The road between Barmedman and Wyalong is very bad.

- W. H. J. Slec, Esq.
10 April, 1894.
233. Are the bad parts of the road continuous, or is the road bad only where the water has lodged? The country is nearly level and the road has not been drained, so that the water sinks down into the road wherever the drays have been along it.
234. Is there no undulating country? Not much; it is nearly all level country. I do not think there would be a cutting more than 7 or 8 feet deep on the line.
235. In speaking of the permanency of the field, I suppose you rely solely upon the reefs which have been opened up? Not necessarily. I formed my opinion from what I saw in travelling over the country for miles on former occasions. In a report dated August of last year, I referred to the country between Yalgogrin and Barmedman as being more auriferous than Yalgogrin itself.
236. I wished you to confine yourself to the discoveries already made, and to separate them from the prospective development of the field. Do the present discoveries warrant you in saying that a large population can be maintained at Wyalong for some time to come? The present discovery would warrant me in saying that the field can support a population of about 1,500 for some years to come.
237. And you think there is a great probability of further development taking place? Yes.
238. That is in reefing? Yes.
239. You also think it probable that alluvial deposits will be found in the vicinity of Wyalong? I think that both southerly and northerly alluvial deposits will be discovered within a few miles of Wyalong. Wyalong is on the watershed of the Lachlan and the Murrumbidgee, and that, no doubt, is why the ground there is so shallow.
240. *Mr. Trickett.*] Have you any statistical information which you can give us as to the number of miners' rights, residential areas, and mineral leases granted at Wyalong during the last twelve months? I know that over 1,000 miners' rights were taken out at Barmedman in one month, and there must have been 1,500 taken out since the discovery at Wyalong.
241. No mineral leases? No mineral leases.
242. Have any permits been taken out? Permits to dig and search for gold?
243. Yes? Some hundreds.
244. How is it that only about 1,500 miners' rights have been issued, when there is such a large population there? A large number of men bring their miners' rights with them. A right can be issued and holds good for any part of New South Wales.
245. Most of the people there have gone to search for gold? Yes; or for business purposes.
246. Do you know the number of residential areas there? There were none when I left the field.
247. How long ago is that? I left the field on the Wednesday before Easter.
248. Is this a place where residential areas would be applied for in the ordinary course? They would, in time, but at present it is very likely that the warden will object to them.
249. Why? Because they might be put right on to the land where prospecting was being carried out.
250. Then does the population squat down where it chooses? The people there can go where they like; but I have refused to give them the right to reside at what is known as the main camp, so as not to prevent miners from sinking there. Business people, as a rule, go where they can find the miners close at hand.
251. All the people who occupy residential positions at present have no title to their holdings? They are there merely on sufferance, under their business license.
252. The reason why residential areas have not been taken up is that the Department will not allow them? Residential areas have been taken up in the new surveyed town. People are allowed to go there and get a title to their land. That is within a quarter of a mile of the nearest claim, and about $1\frac{1}{2}$ mile from what is known as the main camp.
253. Can you tell the Committee whether there are indications there of other minerals besides gold? One or two of the reefs have copper associated with their free gold. There may be other minerals besides gold in payable quantities there.
254. Were there not prospects of tin being obtained in that part of the country? Yes; about 20 miles miles away.
255. Not sufficiently close to be an argument in support of this proposal? No.
256. Do you think there are good prospects of mineral finds along the proposed line from Barmedman to Wyalong? I think that in time to come we ought to have larger mineral discoveries within 20 miles of the line.
257. What are your ideas about the Temora gold-field;—do you think it is retrograding? I reported upon that field in 1880, and I believe what I then said has come pretty true.
258. What was that? I said that the quartz reef at Temora would never be much good, and that the alluvial would be greatly confined to a certain lead. That was published in the Annual Report for 1880.
259. Those who advocated the construction of a line from Cootamundra to Temora said that the mines at Temora had not had fair play—that they had not been systematically worked, but had been muddled and scamped? I think that the whole of our mining fields have been scratched over. We have not done our work as we should have done it.
260. Can you tell us with regard to the Temora mine, whether that is the reason of their not having gone ahead, or is the reason to be found in the absence of gold? The reason of the Temora field not doing well is that the shoots of gold were too short, and the country very hard to follow up.
261. I suppose that when you went from Temora to Wyalong you made a pretty close observation of the country you traversed? Yes.
262. Did you notice a very fine belt of ironbark within about 10 miles of Temora? There is some very good timber at no distance from Temora.
263. Is there not a small forest of ironbark? Yes.
264. Would not that timber be suitable for railway sleepers? I am not able to say; but I should think so.
265. I want to know if that is not a prominent feature in favour of the construction of the line? There is very good timber between Barmedman and Temora.
266. And a considerable quantity of it? Yes.
267. The proposed line is estimated at a cost of about £104,000, upon which the interest, at 4 per cent., would amount to about £4,000 a year;—suppose the working expenses of the line are put down as another £3,000 or £4,000, do you think the prospects of the field would justify the expenditure? I could hardly say, not being a railway engineer.

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268. I am putting the questions to you, not as a railway engineer, but in your ordinary capacity;—do you think that the prospects of the field are such as to justify a charge on the country of from £7,000 to £8,000 a year? I think so. I think that in a very short time we shall have a very large agricultural and mining population within some miles of Wyalong—that is, including Burra Burra and the whole of the district.
269. A fixed mining population? A fixed mining population. At Burra Burra there are now 500 men making a living where, two years ago, there was a wilderness.
270. Are the reefs at Wyalong more marked than those of Temora, which you speak of as being too short? They are in quite a different geological formation. We have a tract of saucer-shaped country through which the auriferous strata run.
271. That indicates permanency? Yes.
272. *Mr. Suttor.*] What do you think are the present prospects of Wyalong? I think the present prospects are over-rated by a number of people. I consider that 1,500 people will be enough to develop the field for a long time to come. I think it will be able to support 1,500 people for some years without any further discoveries.
273. *Mr. Humphery.*] Is the formation at Wyalong similar to that at Barmedman? Not at Wyalong proper, but in parts of the district the formation is similar to that at Barmedman.
274. Is the tract of country, 5 miles by 2, of which you spoke, similar to the country round Barmedman? No; it is granite country, whereas the Barmedman country is porphyry.
275. Do you know the Fiery Cross and the Hard-to-Find claims at Barmedman? Yes.
276. Are they still being worked? One is working, and the other is going to start again. The present machinery is not powerful enough to cope with the flow of water.
277. How many claims are now being worked at Wyalong? About thirty.
278. Are there any buildings of a permanent character in course of erection there? There are some buildings going up in the surveyed township, and also at the main camp right among the workings.
279. Have you been over the country between Cargellico and Wyalong? Yes.
280. Over the whole of it? Yes.
281. Is it auriferous country? The country round Lake Cargellico is somewhat similar to the Wyalong country.
282. And between Cargellico and Hillston? The country is the same right through.
283. Do you think it probable that gold discoveries will be made between the localities I have mentioned? Yes; I think so.
284. Is the whole of the land between Barmedman and Cargellico suitable for agriculture? A good deal of it has been taken up for agricultural purposes, but I think that gold will be found there.
285. Is it used for grazing at the present time? Most of it is.
286. Round Wyalong? Round Wyalong it is all mallee scrub; but a short distance away from there there is good agricultural land.
287. How far from the town of Wyalong? Within a mile of the surveyed town.
288. In a northerly direction? Yes; towards Wollongough.
289. Is there any good land between Barmedman and Wyalong? There is very good land through there.
290. And between Wyalong and Cargellico? Yes. You can get good agricultural land within 20 miles of this line.
291. For the whole distance? Yes.
292. You are referring to the proposed line to Wyalong, and the extension to Cargellico? It is the same country right through.
293. *Mr. Wall.*] Is not the land locked up in these reserves? I presume that the reserves have only been made for a short time.
294. *Mr. Humphery.*] Has the Temora gold-field reserve been thrown open in agricultural areas since the railway was taken there? Some of it has. There are some large wheat-growing farms within 6 miles of Temora. Of course, a great deal of that land has been thrown open.
295. Has all that has been thrown open been taken up? It has been taken up for agricultural purposes.
296. There are some other reserves around Temora;—do you know if they also have been taken up in agricultural areas? I know that a large number of them, though I cannot say exactly which, have been thrown open, as these reserves always are after a gold-field has been established.
297. They were gold-field reserves, and since the construction of the line they have been thrown open? I believe so; but I cannot say positively.
298. *Mr. O'Sullivan.*] You mentioned at the beginning of your evidence that there is a belt of auriferous country reaching from Barmedman to Melrose Plains? Yes.
299. Whereabouts are those plains—what town are they near? There is no town nearer than Condobolin, which is 60 miles from Wyalong. Melrose Plains, by way of Burra Burra, would be about 35 miles from Condobolin, and from 50 to 60 miles from Wyalong.
300. Burra Burra is where the rush took place last year, and where you say there are 500 men? Yes.
301. Are they making good wages? I would not say that. They are making a living.
302. In your opinion this line by going to Wyalong will materially aid in the development of that auriferous belt? Yes; it will aid in the development of the whole of that auriferous tract of country.
303. Just as the Cootamundra line developed the Temora mines, so the Wyalong line will develop mines further out? Yes. The railway is going into a tract of country requiring development, and which is at present almost waterless.
304. When you spoke of Wyalong being able to support 1,500 people, did you mean 1,500 workers? No; 1,500 people taking everyone—that is, supposing there is no further development.
305. In a population of 1,500, there would only be 500 or 600 miners? There would be 1,000 miners, and 500 people making their living from the miners.
306. But the wives and children would have to be taken into account? Yes.
307. So far as I can gather, there have not been many reefs opened up yet? I have formed my opinion from my forty years of mining experience in Victoria and New South Wales. I was only a boy of 17 when I commenced.
308. You have seen such good indications of reefing country round Wyalong that you think the field will maintain 1,500? Yes; taking into consideration its geological formation and everything else.

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309. It is probable that there will be an extension of the field out and beyond Wyalong? Yes.
310. When asked just now if there was as good agricultural ground around Wyalong, you said, "No, that there was a lot of mallee scrub there"? That is where the present workings are.
311. Is not mallee country always good agricultural country? Not there; because the rocks are on the surface.
312. I suppose that there can be no doubt that the 50,000 acres which have been reserved at Wyalong will be found to be to some extent auriferous? I believe that that country will to a great extent be found to be auriferous.
313. I suppose the officers of the Department have taken care to pick out what they consider auriferous country? Yes; these reservations are always made on the recommendations of officers who are supposed to know the nature of the country.
314. In the early days of Lambing Flat, and of the Young gold-field, the miners suffered from want of water, and mining was retarded by it? Even at Mount Browne the miners suffered a great deal from want of water; but they soon made tanks, and sunk wells, and that is what they will have to do at Wyalong.
315. I suppose they can be left to take care of themselves, so far as the conservation of water is concerned? I do not say that. When Peak Hill was opened, I went there as warden, and we had very little water at first, but the people soon made dams, and now they are never short. At Mount Browne, in 1880, we had no water; but now you can always get plenty of water on the field. The miners must make dams for their crushing and puddling machines.
316. Do the Government aid them by sinking artesian wells? That is a matter I have nothing to do with.
317. You know that there is good agricultural country about Temora? Yes.
318. Is it anything like the country towards Wyalong? Some of the Wyalong country is as good as the Temora country.
319. And further on towards Cargellico, you say it is very good? It is a perfect Garden of Eden in some parts, on towards Wollongough.
320. In the event of the Wyalong field failing, there would be ample agricultural resources to help to make the railway pay, and I presume the large population now at Wyalong would leave some of its members behind as tillers of the soil? I believe that the mining there will be permanent, and the miners will require people to produce the food they consume.
321. Barmedman is a town which has been kept alive by mining? Barmedman was entirely a mining town until selectors took up land there, and made it the centre of a farming district.
322. In the same way the rush of miners to Wyalong may bring about settlement upon the land there? Yes; I could point to a score of towns in Victoria and New South Wales which originated in the same way.
323. Is Wyalong on the route to Cargellico? Yes, directly, and directly on the route to Hillston.
324. Is it on the route usually travelled by stock and wool teams? Yes.
325. If the proposed line is constructed these will go to Wyalong instead of to Temora, thus giving work to the railway? Yes.
326. They come now from Cargellico to Temora? Yes; but if the proposed railway were made they would go to Wyalong.
327. Which is the proper route from Hillston to Barmedman? Through Wyalong and on to Wollongough.
328. Whereabouts is that? A little to the north of Wyalong.
329. But that is not on the road to Hillston? A line going on to Hillston would tap the Wollongough country.
330. You mean the proposed line from Wyalong to Hillston, *via* Cargellico? I mean the proposed line from Wyalong to Hillston, *via* Wollongough.
331. But putting that aside, will the proposed line to Wyalong attract traffic from Wollongough? All the traffic from Wollongough will come to Wyalong.
332. And I presume that the people at Hillston would send their traffic that way; they go now to Coolamon on the Narrandera line? Yes.
333. It would be much shorter to come to Wyalong? Yes.
334. So that it is possible that traffic will come from the Hillston district as well as from the Cargellico district? Yes; I have no doubt that the whole of the traffic from that district will come to Wyalong.
335. Then we may conclude that at the very worst, if the mines should fail, there will be an agricultural development which will help the railway, and, at the back of that, pastoral traffic from the Cargellico and Hillston districts? I think so.
336. Under these circumstances, you have no hesitation in expressing your opinion in favour of the proposed line? I think that a railway to Wyalong would be beneficial to the country.
337. Do you care to say whether you favour the line or not? I am not an engineer, and would not like to express an opinion about the line; but, as Chief Inspector of Mines, I say that it would be beneficial to the country at large.
338. Taking a common-sense view of the matter, you would recommend it for the reasons stated? Yes. I think it would be a great feeder to the Temora line, which will then pay better than it does now.
339. *Mr. Davies.*] What extent of auriferous land has been proved to exist on the Wyalong field? A tract of about 5 miles in length by about 2 miles in breadth has been proved to be auriferous, and, since I have left the field, gold has been discovered 7 or 8 miles further out.
340. What extent of land has been taken up under miners' rights? Men were working 10 or 12 miles further out under miners' rights; but the claims which have been found payable have been on the tract of land to which I have just referred. There are miners working all over the district.
341. What number of miners' rights are in existence in connection with the tract of land to which you have just referred? At the lowest computation from 800 to 1,000.
342. What is the largest holding of any one miner on that particular portion of the field? Each miner can hold 60 feet along the line of reef by 400 feet in breadth.
343. Are the miners on the land you speak of in full work, or are the holders of the land waiting for other people to prove it? There are miners all over the place prospecting. Their pegs come close together.
344. There is no idle ground? There may be. Men may be there one day and gone the next, because the miners can pull up their pegs and re-mark.

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345. Then the land has all been proved? It has not been proved. They are prospecting.
346. Can you tell us what quantity of gold has been raised from the piece of land which you describe as 5 miles by 2? I could not say exactly; but I should think about 600 oz. up to Easter.
347. Are there any large crushing plants on the field? There are two plants being erected.
348. How was the stone which gave the 600 oz. of gold treated? It was taken to Barmedman by bullock teams, and crushed at the Barmedman crushing machine.
349. Can you tell us the names of the principal claims from which that gold was obtained? Yes. There is Neild's Claim No. 1, Cassin's Claim, Conway's, Keith's, Neild's No. 2, Perry's, Fraser's, Gormay's, Smith's, MacMahon's, Lasery's, Jamieson's, and Taylor's.
350. They are all on gold? They are on gold.
351. What is the greatest depth of any of these claims? One hundred feet.
352. Has the reef widened, or has it contracted, at that depth? The reefs are about the same at 100 feet as they are when first cut.
353. What is the nature of the walls? Granite.
354. What quantity of stone is at grass or yarded? When I left there was very little stone at grass—perhaps 200 tons altogether. Very few claims were working.
355. Is the whole population idle? No; but they were obliged to get permits before they could do any work. They were working with as few hands as possible.
356. Do you know who were erecting the crushing plant? I believe one crushing plant is being erected by Messrs. Gough and Turling, another by Mr. Plumb, and a third by a man named Grange, an engineer from Sydney.
357. Are these crushing plants being erected on the 5 mile by 2 area? Yes.
358. You regard Wyalong as likely to be an extensive field? Yes.
359. For what distance has the reef been traced? These reefs run in particular blocks, and may be traced for miles.
360. Have they been traced for miles? Yes.
361. Do you know the greatest depth which the prospectors have obtained at the greatest distance from the centre of the discovery? From 40 to 50 feet is the deepest shaft far away from the first prospectors' claims.
362. Are those people on gold? Yes.
363. How many miles are they from the centre of the 5 miles by 2 miles tract? Four miles.
364. Each way? Yes.
365. Are you satisfied that the reef is of the same character as that which is being worked by those who have already got gold? In one of the selections the formation is rather more favourable as regards permanency than it is close to the first workings at Wyalong.
366. Have you any hope of discovering payable alluvial gold? Yes.
367. Near to the centre of the field, or at some distance away? Out away from the field, 4 or 5 miles north or south of Wyalong. I certainly expect that we shall get payable gold there.
368. What arrangements have the Government made for the sanitation of the central camp? As warden, I took the police there with me, and turned off all the men who were living near the drains going into the tanks; but I believe that they have since gone there again.
369. All the water for the supply of the residents has been polluted? There is a tank there which really belongs to Mr. Blyth, the holder of Wyalong Run. I have recommended the Government to resume that tank.
370. Has the water been polluted by the people residing in the camp? It was when I first came there, but I turned every one off the drainage area. I have heard, however, that they have since gone close to the drainage area again.
371. You did your part to prevent the contamination of the only water supply existing? Yes; the tank was fenced in, and I put up a notice that it was to be used for purely domestic purposes.
372. Was there much sickness when you were on the field? Very little, if any. Of course there is always a certain amount of sickness on new fields, because of the way in which the men there have to live.
373. Have you made any representations in regard to the water since? I have recommended that a certain tank should be resumed for domestic purposes, and another for stock purposes. I have recommended the resumption of three tanks. With regard to the sickness, I have not thought it of sufficient importance to make any representations on the subject. I have had charge of gold-fields where the number of sick people has been very large, but this field has been very healthy.
374. How will a supply of water be got for the use of the machinery? Tanks will have to be made or wells sunk. I believe that water will be obtained by sinking, perhaps 200 feet or more; but that is not likely to be water which will be useful for domestic purposes—it will be slightly brackish.
375. Do you think a good supply of water for a crushing plant would be obtained by sinking 200 feet? I think a supply of water might be obtained in that way; but they could make large tanks or dams on the watershed.
376. The machinery cannot be used until water is obtained? One party bought a tank full of water from Wyalong station.
377. What quantity of water is there there? I believe from 3,000 to 4,000 yards.
378. Is it usual to find good agricultural land in auriferous country, and where you have porphyry? Yes; at Lambing Flat, now Young, for instance, you have good agricultural country.
379. But was not the gold there alluvial? Well, at Grenfell there is more quartz than alluvial gold.
380. Is it possible to find good land where there are simply quartz reefs? Not necessarily, and that is why I think we shall get alluvial gold here.
381. Usually good land is found upon alluvial fields? Yes.
382. And not where there is quartz? At Peak Hill there is quartz; but there is extraordinarily good agricultural land there.
383. In the flats? Yes; away from the hills. Wyalong is on a table-land, one side of which drains to the Lachlan, and the other to the Murrumbidgee, and directly you get off it there is good agricultural land.
384. Like the Parkes and Forbes country? Very similar to it.
385. Holding the views you do in regard to this field, you will be in favour of the construction of a cheap line of railway from Temora to Wyalong as the best kind of road? Yes; I think it will do good to the whole country.

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383. And you believe that eventually the line would pay? I think so.
387. *Mr. Hoskins.*] Is Barmedman as large as Temora? Latterly it has improved very considerably, and is becoming as large, or even larger, than Temora. There is a Lands Office there now.
388. There are plenty of stores and public-houses there? I think there are four or five hotels and seven or eight stores, also private buildings. There is a quartz-crushing machine there.
389. What are their customers—gold-miners, farmers, or squatters? There are large wheat-growing districts outside of Barmedman. Within 4 or 5 miles of the town there are some thousands of acres of land under cultivation.
390. Then we are to understand that the customers of the storekeepers and hotel-keepers are persons cultivating the land in the neighbourhood of the town? Their customers are either miners or farmers.
391. Is there a large farming population in the neighbourhood of Barmedman? Yes; right out to Yalgogrin.
392. *Chairman.*] How long were you at Wyalong? Thirteen nights.
393. Was that the first time you had visited it or the district? It was the first time I had visited Wyalong; but I have been through the district several times.
394. The Barmedman district? The Barmedman and Yalgogrin districts. You have to pass Wyalong to get to them.
395. I suppose you frequently visit the Temora district? Yes; very frequently.
396. When was your earliest acquaintance with Temora? I was the first official to report on the field for the Department.
397. What was the nature of the road communication between Cootamundra and Temora at that time? Very bad.
398. As bad as it is between Temora and Wyalong now? I think so.
399. Did they propose a railway then to take the miners to the field? I do not know.
400. How long ago was it? In 1880.
401. Is the road between Temora and Wyalong worse than is usual where there is a sudden rush of this kind? I think it is one of the worst roads I have seen, because of the gilgai holes. There is no room to go in between them, and you must pass them. Between Peak Hill and Tomingly there is a short distance nearly approaching it; but this road will certainly be a very bad one to make.
402. Gilgai holes are shallow water-holes? Yes, without hard bottom.
403. Is there no means of draining them? No.
404. You have to go round them? You would have to go miles round to escape them.
405. What is their size? Some are, perhaps, as large as this room. There may be 6 or 7 feet of embankment between them.
406. Do they extend right across the 3-chain road? Yes; you must go through them; you cannot go round without going many miles out of the way.
407. Is there fairly good timber and scrub along the road? Yes.
408. Would it not be possible to make a bottom by cutting down the brushwood and putting it on the road? I daresay a road engineer could make a good road.
409. But it is the large number of people who have gone over this road in exceptionally wet weather that has made it so bad? The heavy traffic going over it makes it bad.
410. And has not the weather been exceptionally wet since the Wyalong field was opened? No. While I was at Wyalong the weather was dry, though letters which I received stated that there had been heavy rain at Sydney.
411. Then no unusual quantity of rain fell at Wyalong? The only rain we had fell on the 19th March last, and it made the road almost impassable.
412. How far do these gilgai holes extend—all along the road? No; within a radius of 5 miles.
413. Then there is only 5 miles of road which are very bad for travelling? No; the rest of the road is bad.
414. What is the matter with it? The country is nearly level, and the water lodges in the tracks made by the drays.
415. The road is cut up by the thousands of people who have travelled over it lately? Yes.
416. You tell us that there is only room for 1,500 people there? That is, with the present discoveries; but I believe there will be a large mining and agricultural population in that district.
417. Is it not usual, after the first rush, for people to find that there is not the room which they anticipated, and to make a stampede back? That very often happens.
418. You do not think that the population of 10,000 or 12,000 which is there now will be maintained? No; it is likely to dwindle down, but I believe there will be a population of a few thousands there for many years to come.
419. Knowing what you do of the place, how many people do you think will settle within 9 miles of Wyalong? If there are no further discoveries, I should think about 2,000. If there are further discoveries, we may get a better set of people there than we have at present.
420. A greater number of people? Yes; more of a mining population.
421. You mean there will not be such a sudden rush, but a gradual filling up of the country? If the mines at Wyalong were in the hands of working miners or of mining men, instead of being principally in the hands of selectors and selectors' sons, who are not used to mining, they would support a larger population.
422. Do you ever remember a case where it has been proposed to take a railway to a gold-field to which there was a rush? No; I do not.
423. Are the gilgai holes to which you have referred between Barmedman and Wyalong, or between Barmedman and Temora? Between Barmedman and Wyalong.
424. Are they nearer to Wyalong than they are to Barmedman? They are slightly nearer to Wyalong.
425. I understand that the road between Temora and Barmedman is fairly good? In parts.
426. From Barmedman to Wyalong it is bad, especially where the gilgai holes are? Yes; the road is pretty bad right along.
427. Do you think that if a population of 2,000 had gone over the road it would have been as much cut up as it has been? Perhaps not. Of course, the people there now require more stores, and so on.
428. Presuming that there were a population there of 1,500 or 2,000, there would not be the heavy traffic over the road which there has been? I believe that in time to come we shall have a population of several thousands there, though the present discoveries will not support more than 1,500 people.

429. Suppose the whole of Wyalong were in your hands, and it was necessary to have a fairly good road to Temora, what do you think you could do the work for? I should not like to say; I am not a road engineer.
430. Do you think that £200 a mile, if expended between Wyalong and Barmedman, would get rid of the gilgai holes? No; I think it would take far more. You often get gilgai country in which the holes are far apart, so that you can take a road between them; but here you may have one wheel in the gilgai hole and the other on solid ground.
431. What do you think it would take to deal with the gilgai holes? I could not say; I am not a road engineer, and I do not wish to go beyond my province.
432. Is the brush which you have mentioned close to the gilgais? Yes.
433. Have you ever heard of a new gold-field like this having a railway taken to it? No; I do not know of such a thing being done.
434. While you were at Wyalong did you go about the district much? Every day.
435. How far from Wyalong? I have been, perhaps, about 20 miles away from there.
436. Is the country over which you went good agricultural country? Yes; very good agricultural country.
437. Where do the people from the direction of Forbes come into Wyalong? They come Marsden way.
438. They do not go through the gilgai country? Yes, partly; others come on to the 16-mile Tank, on the Wollongough Road.
439. You expressed the opinion just now that if the line were taken to Wyalong, the people of Hillston, instead of going to Coolamon, would come to Wyalong; but if they did that the Commissioners would lose 70 or 100 miles of freight? I believe they would lose to a certain extent.
440. So that the proposed line would take money from the coffers of the Commissioners? It might, to a certain extent.
441. Have you any maps in your Department showing the geological formation of the country in and about Wyalong? I believe such a map has been issued within the last fortnight.
442. What area does it take in? I do not know—I have not seen it.

W. H. J. Slice, Esq.
10 April, 1894.

WEDNESDAY, 16 MAY, 1894.

Present:—

JACOB GARRARD, Esq. (CHAIRMAN).

The Hon. WILLIAM HENRY SUTTOR.	WILLIAM CHANDOS WALL, Esq.
The Hon. JAMES HOSKINS.	WILLIAM McCOURT, Esq.
The Hon. FREDERICK THOMAS HUMPHERT.	JOHN CASH NEILD, Esq.
The Hon. JOHN DAVIES, C.M.G.	EDWARD WILLIAM O'SULLIVAN, Esq.
The Hon. WILLIAM JOSEPH TRICKETT.	CHARLES COLLINS, Esq.
HENRY DAWSON, Esq.	

The Committee further considered the proposed Railway from Temora to Wyalong.

Hugh McLachlan, Esq., Secretary to the Railway Commissioners, sworn, and examined:—

443. *Mr. Davies.*] The Railway Commissioners have furnished the Committee with a report on the proposed Temora to Wyalong railway. What are the chief grounds actuating them in recommending the postponement of the construction of that line for six months? The uncertainty that it will be a payable one. The reasons for their recommendation are clearly set forth in the report.
444. Did the Commissioners take into account the probable extension of the line to the Lachlan? Not to my knowledge. So far as I am aware, that question was not brought before them.
445. If a railway were taken to Wyalong, and thence to Hillston, would it not open up splendid agricultural country? I do not think the Commissioners went over the Hillston country.
446. They confined their inspection and inquiry to the country between Temora and Wyalong? Yes.
447. Without taking into account that the line would probably develop a large traffic beyond Wyalong? Yes; so far as I am aware.
448. Have the Commissioners formed their opinions from the doubtful condition of the settlement at the Wyalong gold-fields? Yes; and having regard to the population along the surveyed line. You must recollect that the country between Wyalong and Hillston is now used entirely for pastoral purposes, and the traffic from that district comes to the railway now, so that no new traffic would be developed by the extension of the proposed line.
449. Traffic coming from the district between Temora and Wyalong comes to Temora? Yes; to Temora now, but before the Temora line was opened, some of it used to go to other stations such as Old Junec. Still, it all came to the railway.
450. Has the traffic on the Temora line increased? The line has only been opened a short time, and during the last four or five months the passenger traffic has been abnormal owing to the rush to the gold-fields, while a great deal of building material has also been sent up there.
451. But was the traffic increasing prior to the discovery of gold at Wyalong? I do not think one could form a very good opinion upon that point, because the line had been under construction for some time, and a fairly large quantity of wheat was kept back pending the opening of the railway. Mr. Brunton, I know, kept a large quantity of wheat back. Then, too, the first few months after the opening of the line were busy months, when all the wool and the wheat were being sent down. The line has not been open long enough to enable us to compare the earnings of any particular month in one year with the earnings of the same month in another year.
452. The Commissioners doubt the stability of the traffic on that line? Yes, the passenger traffic and the amount of building material sent over the line is somewhat exceptional.
453. I gather that the Commissioners doubt the wisdom of constructing the proposed railway until there is some permanency about the character of the settlement? Yes; that is their report.
454. Has the Temora line paid? It has paid more than the working expenses since it has been opened. In answer to a question asked by Mr. Hoskins, a return was laid on the table of the Legislative Council a few nights ago, showing that the total cost of the line up to date has been £185,000 and the revenue derived from it has been £5,831, while the working expenses only came to £1,934.

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455. Then you do not put down that line as one of the non-paying railways? It would not quite pay interest; but it is more than paying working expenses. The return was made up from the date of the opening of the line to the 31st March last.
456. The Commissioners recommend the suspension of the consideration of the proposed line for six months in order to give time for it to be seen whether the gold-fields will be permanent? Yes, they recommend the consideration of this proposal being held over for six months.
457. *Mr. Hoskins.*] From a paragraph in the Commissioners' report, I take it that they consider that this line should be constructed, if carried out, in the way described by the Commissioners in a paper dated 10th October, 1892? They recommend that if it be constructed, it should be constructed in a similar way to that in which the Narrabri to Moree line is to be constructed.
458. Do you know if Mr. Deane has been instructed, in travelling through America, to observe and report upon the character of the light lines there? No, I do not. I saw a statement on the subject in a newspaper; but I do not know of my own knowledge.
459. Seeing that a line from Temora to Wyalong would travel through similar country to that passed through between Cootamundra and Temora, and in view of the return which has been made by the Temora line, would it not be well to carry out the proposal before us in the cheap manner suggested by the Commissioners? No; because you must recollect that the Temora line does not only its own local traffic, but the traffic from Wyalong as well. A line from Wyalong to Temora would get nothing of the traffic passing over the line from Temora to Cootamundra, though its traffic would help to swell the returns of the Temora line.
460. Would not an extension of the existing line give railway communication to a larger tract of country specially adapted for wheat-growing, and also obtain some of the Lake Cargellico traffic? It might open up a new district; but is there any necessity for doing this, considering the cost. There is any quantity of land available for settlement along the lines already opened up. For instance, the Culcairn to Corowa railway passes through an agricultural district which has been already opened up; but it does not pay working expenses. The country of which you are speaking is well served for pastoral purposes. We get all the wool that comes from that district now.
461. Are you not aware that nearly all the land between Culcairn and Corowa is in the hands of private individuals? Yes; but it is cultivated, and we get the traffic from it. There is a good settlement of German farmers along that line, and a good deal of the land is under wheat.
462. Are we to infer that if a railway were taken through a wild and uncultivated district, and the land through which it passed were afterwards cultivated, that cultivation would not contribute towards its return? Of course, it would pay something; but it might not pay sufficient. The country between Culcairn and Corowa is one that has been already opened up, and on which there is a fair amount of settlement; but last year the earnings on the railway there were only £3,900, while the working expenses amounted to £4,200, so that the receipts do not balance the working expenses, leaving the question of interest out of consideration altogether.
463. Are you sure that a great deal of the land along the line is cultivated? Yes; I have been over the line. We know that a great deal of the wheat there passes through Culcairn.
464. That line cost £4,000 or £5,000 a mile? It cost £215,000, or a little over £4,000 a mile.
465. If the proposed line to Wyalong were made a pioneer line, do you not think that it would not only encourage settlement, but that it would lead to increased cultivation and consequent development of trade? Would not its construction simply be robbing one district to benefit another? Between Blayney and Harden we have an immense area of land which has not yet been settled, although it is provided with a railway; and the same thing may be said of the land on the Southern line, and on the South-western line. We know the results which have been obtained from the Culcairn to Corowa line, which passes through an agricultural district already developed. In the case of the Wyalong district, you are only assuming that it will be settled.
466. From your evidence, I gather that agricultural produce does not pay the railways. Is that because it is carried at so low a rate? If you give railway accommodation to a district which is close to a large population, the land there will be taken up at once, because of its proximity to a market; but here you are 300 miles away from a market, and people naturally prefer land which is more accessible.
467. Is it not a fact that land nearer Sydney has nearly all been alienated? There are millions of acres not yet cultivated.
468. Do you know that a great deal of the land which has been taken away from the original pastoral lessees, not only about Wyalong, but even out towards Cargellico and Hillston, has been selected by people coming from Victoria? I dare say a good deal of it has been taken up, and, if it paid to do so, the people owning it would cultivate it.
469. I suppose you have not read the evidence given before the Sectional Committee who visited Wyalong? No.
470. That evidence shows that people would cultivate much larger areas of land if they had railway accommodation, because wheat-growing would pay better than wool? At the same time, however, there are immense areas of uncultivated land alongside the existing lines.
471. I take it that the Commissioners would not object to the construction of the proposed railway if it could be constructed for £2,000 a mile? They say clearly that they recommend the postponement of the whole question.
472. Do they not say in the second paragraph of their report that if the railway could be made as a pioneer line, at a cost of £85,000, it should be carried out? No.
473. If the line could be made for that amount, would they still oppose its construction? Yes.
474. *Mr. McCourt.*] Unless there were a settled population at Wyalong, the Commissioners would oppose the construction of the proposed line? Yes.
475. Is there much margin of profit on the carriage of wheat? I really could not say.
476. Is not wheat carried at a very low price? It is carried at the lowest rate that we carry anything at.
477. Therefore there is not a great deal of profit made out of it? No.
478. I notice that the Commissioners' estimate of traffic expenses is much less than in any previous estimate put before us? I understand that they have simply estimated the actual cost of working the line.
479. This estimate is considerably less than the estimate for the Moree line? I do not recollect what the figures were in connection with the Moree line, but this line is much shorter.

480. At any rate, the Commissioners arrived at this estimate in the usual way? Yes. It is an estimate of the actual expenses. No cost of supervision or anything like that has been added.

481. Ought not the cost of supervision to be estimated? Well, the same general expenditure as is incurred now would cover the working of this line.

482. I suppose the cost would be divided between the proposed line and the Temora line? No; it would be debited against the existing line generally. We should not require a new traffic manager, or any officer of that sort for the proposed line.

483. *Mr. Trickett.*] I suppose in the course of the inquiry made by yourself and the Commissioners—? I have not made any inquiry myself. My information is obtained from the Commissioners' report. Mr. Harper went through the district and obtained a good deal of valuable information.

484. I suppose it has been the experience of the Commissioners and yourself that the population of a new gold-field always dwindles down very materially after a certain time? Yes. That may be said now of Coolgardie. A large number get the fever, and a tremendous rush to a place ensues, and then most people are sorry that they have gone, and come back again.

485. That is the universal experience in connection with gold-fields, as far as one may judge? Yes. Of course an alluvial field becomes worked out in time, and with reefing fields people come away after a time.

486. That is one of the reasons why the Commissioners wish to wait a bit before going on with this proposed work? Yes.

487. The Commissioners estimate that if a permanent population of 1,800 or 2,000 people settles at Wyalong, the revenue of the line will be about £2,800, and the consequent annual loss in working expenses and interest will be about £4,000 a year? Yes.

488. That estimate is based on the assumption that the line will only cost £85,000? Yes. With regard to the carriage of grain, I would point out that it is charged for at a diminishing rate. The longer the distance, the less the rate. For the journey from Temora to Cootanundra, a distance of 38 miles, all we get is 6d. a ton.

489. *Chairman.*] But that traffic feeds your main line? The rate is the extension of the main line, diminishing with the distance.

490. *Mr. Hoskins.*] You are referring to full loads—6-ton trucks? Yes.

491. *Mr. Wall.*] What is the length of the proposed line? About 40 miles, practically the same length as the Temora line.

492. The Commissioners estimate the earnings on the proposed line at £2,800, while the earnings up to date on the Temora line have been £5,831;—why should they not estimate the earnings on the proposed line at the same rate as the earnings upon the Temora line? Well, on the Temora line, we get not only the local traffic, but also the through traffic from Wyalong. Then, too, the traffic on the Temora line has been abnormal since the rush to the gold-field, and cannot be taken as a fair criterion.

493. If the country between Temora and Wyalong is similar in character and population to that between Wyalong and Lako Cargellico, do you think there is any justification for assuming that the revenue of the line will be only £2,800? The Commissioners considered the matter before making their report.

494. In other estimates which have been put before the Committee, the passenger traffic has been estimated as bearing a certain proportion to the population? The passenger traffic is very difficult to estimate. Of course, the nearer the district is to a big centre of population, the more people there travel.

495. Is this estimate submitted in accordance with the general rule heretofore observed, or is it merely a general estimate of the probable revenue? It is a general estimate.

496. I suppose the Commissioners were aware that the question of sending the railway to Hillston had been under the consideration of the Works Department? Not that I know of. The further extension of the line had not been referred to them, and they do not, as a rule, report on or consider matters not referred to them. They were asked to report on a proposed line from Temora to Wyalong.

497. Were they aware that the line was submitted to this Committee as a section of a contemplated extension to Hillston? No; I think not.

498. Has any officer of the Commissioners' Department been at any time asked to report on that extension? Not to my knowledge. Surveyors from the Works Department have probably been over the country; but no officer of the Commissioners' Department has been sent there.

499. The Commissioners have not considered the question of extending the line to Hillston? No.

500. Will the officer who has been inquiring as to the probable revenue of the line, be able to give us any information as to the quantity of traffic likely to come from Hillston? I do not know that he will be able to do that.

501. I suppose the Commissioners regard the advantages derived from railway construction as represented purely by the cash balance remaining at the end of the year? To a large extent that would be the way in which they would look at the matter.

502. Is it not a fact that part of the country through which the proposed railway would go is specially adapted for the cultivation of wheat? Personally, I have no knowledge of it.

503. You have spoken of the immense areas of uncultivated land alongside our railway lines. Can you say whether these areas have been reserved for special prices, or whether they are available at ordinary upset prices? I could not tell you that.

504. You could not say whether the increased price put upon these lands has tended to lock them up? No.

505. Has there been a great increase in the passenger traffic on the Temora line since the rush to Wyalong commenced? There has been a big increase.

506. The trains on that line only run three times a week? Yes.

507. Are you aware that on the days when trains are not running, four coaches, fully loaded, ply between Cootanundra and Temora? No. I know that a coach runs with the mails on the off days; but I did not know that there were four running. I am inclined to doubt the accuracy of the statement.

508. If the Committee saw them they ought to know? Have you any idea of the number of passengers that would be carried by the four coaches daily?

509. Do you think that if, at the end of six months, the Wyalong gold-field proves capable of maintaining double the population estimated for by the Commissioners, they would recommend the construction of the proposed line? I could not say, though of course they would then be prepared to reconsider their report.

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510. *Mr. Neild.*] Have the Commissioners taken any steps to ascertain the prospects of the field? At the present time there is a doubt as to its permanency. I do not think that they went further than to ascertain that there was such a doubt.
511. Do you know how many claims there are on payable gold? No.
512. The Commissioners were not concerned with matters of that sort when drafting their report? Certainly; the Commissioners were on the field themselves.
513. How long ago? I think they were there last Monday week.
514. Prior to the drafting of their report? Certainly; the report was written on Friday last, after their return.
515. Do teams compete with the Temora railway? Not to my knowledge.
516. You have not been officially informed of such competition? I do not recollect hearing of it. I know that on the off days, a coach runs to carry the mails.
517. I am referring more particularly to the goods traffic. You do not know of such competition? No.
518. Do you anticipate that the competition which exists in certain other localities is likely to be serious? I do not think that it is assuming such proportions, or likely to affect our revenue.
519. In the letter of the Commissioners in regard to narrow gauge railways, they refer to the greater running cost of a slow line;—would what they say there apply to the proposed railway to Wyalong? To a limited extent it would.
520. The proposed line is intended for slow traffic? Yes. The Commissioners propose to run over it at the maximum rate of 15 miles an hour.
521. And a slow rate of speed necessarily involves increased expenditure? It practically doubles the running wages which have to be paid, in that the men would be longer on the road.
522. Does it make any difference in regard to fuel? To some extent, because the engine would be twice as long on the road as if you ran at the rate of 30 miles an hour.
523. Would that exceed the greater consumption which would take place with a forced draught? I think so.
524. Towards the end of their letter the Commissioners speak of a pioneer railway as a line to carry traffic with reasonable speed at a lower rate of charge than it is now carried by road;—would that apply to the proposed line? I have just given you an instance of how it would apply. We take wheat over the Temora line at 6d. a ton, and I do not think teams could compete with us at that rate. As a matter of fact, the team competition is not very large.
525. *Mr. Dawson.*] Do you know whether persons coming from Cootamundra, Tumut, Murrumburrah, and those places in private conveyances would use the railway, or would they go straight on? Local people would probably not use the railway; but I think Mr. Harper could give you more information on that point.
526. Have the Commissioners allowed for the carriage of ore between Wyalong and Barmedman? The Commissioners say that they would not attempt to make an estimate of the probable revenue of the line. I understand, too, that persons are putting up crushing plant at Wyalong, so that there would not be much ore sent by the railway.
527. Have the Commissioners taken into consideration the fact that there is plenty of ironbark close to the proposed line, and that sleepers could be got from there for the purpose of supplying other lines more cheaply than they could be got from other places. You have to take them from Bargo Brush now? There is a certain amount of ironbark about Cootamundra, and we have used a few red-gum sleepers on that part of the line. You get a great deal of red-gum along the rivers. In Victoria they use pretty well all red-gum.
528. *Mr. Collins.*] The Commissioners are losing between £8,000 and £9,000 a year upon the Culcairn to Corowa line? Yes, including interest.
529. Do you think that that line is ever likely to pay? I could not say—the revenue has not shown any signs of improving.
530. Is the country there similar to that between Temora and Wyalong? I could not say. It is good country.
531. The cost of that line was over £4,000 a mile? Yes.
532. And this line will cost? Say £2,000 a mile.
533. Could a cheaper line have been constructed between Culcairn and Corowa? Yes, on the system proposed for this line.
534. Do you think such a line would have paid? No, because the present line does not pay working expenses.
535. *Mr. Humphery.*] The Temora line has been open seven months, I believe? About seven months.
536. What do you estimate the annual interest on £185,000 to be? At 4 per cent., £7,400.
537. Then what rate of interest has that line been earning between September and March last? Less than 4 per cent., and, of course, the traffic has been abnormal.
538. Do you know of any other branch line which at present yields 4 per cent.? Not a line newly opened, such as this. The Narrabri line pays a little more than 4 per cent.
539. Do you know any line which has paid 4 per cent. from the time of opening? I do not recollect any.
540. Therefore, you cannot say that at the present time there has been any loss on the Temora line? Not at the present time.
541. In considering their report, had the Commissioners the plan of the proposed extension now before the Committee? No; though, of course, they had all information about the proposed line.
542. Do you not see that on the plan before us, an extension of the line to the Lachlan is marked out? To some extent that plan seems to me to be misleading, because in order to properly consider this matter, you should know the character of the country to the north, so as to be able to decide whether the extension should not be made from Forbes.
543. In reporting upon the proposed line, do you not think that it was absolutely necessary to take into consideration the probability of getting traffic from the Lachlan eventually, if the line were constructed? That traffic comes to the railway at present.
544. Are you prepared to express an opinion on behalf of the Commissioners as to whether the railway should be extended to the Lachlan from Forbes? That is a matter which I have not considered.
545. Do you not think it is essential, in considering the proposal before the Committee, to also take into consideration the proposed extension to the Lachlan? That is a matter which I think the Committee should consider.

546. Is it not also a matter for the Commissioners to consider? No; I think they have laid it down all through, that they do not enter into the policy of constructing any line other than that referred to them. They have never considered either rival or alternative routes.

547. Should they not have given consideration to this matter, not as a question of alternative routes, but as affecting the earnings of the railway? They would have borne it in mind in framing their report; and they have recommended that the matter should be postponed.

548. Are the Commissioners familiar with the traffic coming to the railway from the Lachlan? They know the stations from which it comes.

549. Do they know the volume of that traffic? Yes; we know what amount of traffic comes to the railway at the present time.

550. I suppose you have not taken into consideration whether any of the Lachlan traffic, which is now supposed to go to Victoria, would be obtained by extending the railway to the Lachlan? As a matter of fact, the traffic from the country between Wyalong and the Lachlan practically goes to our line now—none of it goes to Melbourne.

551. What about the traffic to Carrathool and Whitton? Those stations are a long way from the proposed line.

552. Are they so very far from Hillston? They are a good distance away, and on the Murrumbidgee, which differs not only in name but also in natural characteristics from the Lachlan.

553. Some of the witnesses who were examined by the Sectional Committee said that the traffic reaching Carrathool and Whitton found its way to Victoria;—is that correct? So far as I am informed a great part of that traffic comes along our way; but I believe Mr. Harper could give you more complete information.

554. *Mr. O'Sullivan.*] I gather from your evidence that the Commissioners have looked upon this line simply as a line to Wyalong? Yes; they were asked to report upon such a line, and they did so.

555. Did they take into consideration the probability of a large settlement taking place at Wyalong, in consequence of the throwing open of the leases in the Central Division? They would consider that in a general way.

556. There is no mention made of it in their report? They would have it in their mind in making the report.

557. You are aware that that land is admirably suited for agriculture, and especially for wheat, and is likely to be taken up as soon as the leases are thrown open. That being so, is there not a possibility of a great amount of traffic coming from the district, even apart from the gold-field? Yes; but in the opinion of the Commissioners, that development was too problematical to justify the present construction of the railway.

558. When the construction of the Temora line was recommended, the Temora gold-field had practically ceased to exist. The line was recommended as one likely to develop an agricultural district? Yes; but there was a certain amount of mining going on there and at Barmedman.

559. If the construction of the Temora line was justifiable, on the ground that it would serve an agricultural district, would not the construction of the proposed line be justifiable for the same reason? The Commissioners have fully considered the matter, and they do not recommend the construction of the line.

560. If the line were extended to the Lachlan, would it not take a great deal of the traffic that now goes to Melbourne *viâ* Carrathool and Whitton? It would gain no new traffic.

561. I understand that a great deal of the traffic in that district goes down the Murrumbidgee to Echuca and scarcely uses our railways at all; but if a line were made to the Lachlan, or even to Wyalong, would not a great deal of that traffic come to Sydney, and thus give a return to our railways? So far as I am advised, there is not a great amount of traffic from between Hillston and Wyalong going to Victoria.

562. *Chairman.*] In the seven months, during which the Temora line has been opened, it has paid working expenses, and almost interest charges as well? Yes.

563. But you consider the traffic upon it abnormal, owing to the fact that a large quantity of produce was kept back in anticipation of the opening of the line, and because of the rush to the Wyalong gold-fields? Yes; I ought to mention that the months immediately following the opening of the railway—October, November, and December—are the fat months of the year. May, June, and July, are lean months.

564. So that the traffic during the remaining five months of the year would be very light compared with what has already taken place? Yes; it would be rather misleading to take the returns up to date as a criterion of the probable traffic of the line, because of the favourable circumstances which have attended its opening.

565. Has that fact weighed with the Commissioners in recommending the postponement of the proposed work? To some extent it has.

566. When the Commissioners were asked to report upon the proposed line, were they furnished by the Construction Branch with an estimate of its probable cost? I do not recollect.

567. As a matter of fact, on what were they to base their estimate of the probable net revenue of the line, if they did not know what it was to cost? I think the cost was stated by Mr. Deane to be about £110,000.

568. Is it not the invariable custom for the Construction Branch to furnish the Commissioners with an estimate of cost? Yes; we generally get their estimate, and the Commissioners usually state in their report that the Engineer-in-Chief fixed the cost at so much.

569. Why then have the Commissioners ignored the estimate of the Construction Branch in this case, and worked on an estimate of their own? They have not ignored the estimate of the Construction Branch; but they say that they would recommend a pioneer line, and give an estimate of what they think the pioneer line would cost. The same thing was done in connection with the Moree line.

570. That statement is not borne out by facts. In reporting upon the Moree line the Commissioners took the estimate of the Engineer for Railway Construction, and has it not been their invariable practice to base their report upon that officer's estimate? As a rule, of course, the Commissioners' reports are based upon the estimates of the Constructing Branch. The Moree estimate given was much amended on the original sum.

571. Is not this the first time that the estimate of the Construction Branch has been put on one side? I think this is the first time in which the Commissioners have given their estimate of cost in this way.

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572. Can you give us any reason why the estimate of the Construction Branch should be ignored? I do not know that it has been ignored.
573. Can you find any reference to the estimate of the Construction Branch in the Commissioners' report? Mr. Deane seems to have made an estimate for an ordinary line, and the Commissioners give it as their opinion that the work could be done much more cheaply.
574. As a matter of fact, the Commissioners were informed that the Engineer-in-Chief estimated that the proposed line would cost £110,000? I am not sure. Mr. Deane mentioned to me that the line would cost £104,000.
575. The Commissioners in their report have ignored Mr. Deane's estimate, and have made an estimate of their own, putting the probable cost of the line at £85,000? Yes; they think the line could be made for that.
576. The proposal put before us was for the construction of a line to cost £104,430, and in basing their report upon an estimated cost of £85,000, the Commissioners have not reported upon the proposal put before the Committee? Of course, that is a matter for the discretion of the Committee to determine. I do not know if Mr. Deane considered that this line should be similar to the line from Narrabri to Moree, and made his estimate for a light line, instead of for a pioneer line.
577. That has nothing to do with the fact that the Commissioners had Mr. Deane's estimate before them? The Moree line was originally estimated to cost £300,000, I think.
578. That was not the estimate put before this Committee, and it was upon the estimate put before the Committee by the Engineer for Railway Construction that the Commissioners based their report. I wish to know why, in this case, they have ignored the estimate put before us, and have based their report upon an estimate of their own? The Commissioners have not ignored the engineer's estimate; but they think that the work should be done for £85,000. I might say that Mr. Barling, in giving evidence upon the Moree line, stated that the original estimate of cost for the line was £500,000.
579. Is it a fact that during the last twelve months three railway officers have visited America with a view of reporting on the construction of cheap lines, and the general running of railways there? Three railway officers have visited America within the last few months for the purpose of reporting on railway matters.
580. Have they reported to the Commissioners? Yes.
581. Have those reports been published? No, they are private reports. These officers did not go to inquire only into the construction of light railways.
582. Was Mr. Shellshear one of them? Yes.
583. Is it a fact that he devoted his attention principally to railway construction? He is one of the engineers for existing lines, and dealt with the character of the lines in America, and, of course, to some extent with their method of cheapening lines.
584. And Mr. Parry with signalling and traffic matters? Yes.
585. And Mr. Howe with mechanical matters? Yes.
586. Is Mr. Shellshear in Sydney? I think not.
587. Where are his headquarters? At Goulburn.
588. Was there anything in the reports of these officers which it would be undesirable to make public? Not that I am aware; but in managing a big Department such as theirs, the Commissioners do not publish everything in the press.
589. At all events, these reports have not been made public? No.
590. *Mr. McCourt.*] You stated that the working expenses on the Temora line for seven months amounted to £1,900. For the remaining five months they would not be so heavy? I do not think there would be any difference.
591. So that in a year the working expenses would come to about £3,500? I suppose so.
592. When the proposal to construct that line was before the Committee, the Commissioners estimated that the working expenses would come to £7,497 per annum, or double the actual amount? In one way and another the cost of maintenance and other traffic expenses have been very much reduced since the first reports were made. The actual cost and maintenance on branch lines is now about £50 a mile. When the Commissioners took office their maintenance was estimated at £125 per mile, and that would make a big difference in 40 miles.
593. So that the Commissioners have reduced the cost of working the lines by about one-half? They have made considerable reductions, and if they were making an estimate to-day they would reduce it considerably.
594. It would follow from that, that the estimates of working expenses previously put before the Committee have been too high? Many of them could, I think, be reduced.
595. Largely reduced? On a branch line they could be largely reduced.
596. *Mr. Humphery.*] If the railway were extended to Wyalong, would there be any increase in wages? Naturally.
597. In what respect? You would have to have more maintenance men.
598. But as far as the management of trains was concerned? Yes; because the distance would be increased by about 40 miles, or 80 miles there and back.
599. How long would it take to do the journey? Three or four hours each way, and then a driver has to get his engine ready. I think we should have to put on a double set of men to work the line from Cootamundra to Wyalong.
600. You estimate the working expenses of the line at £3,500, about the same as the actual cost of working the Temora line? Yes.
601. Do you not think that that estimate is excessive? I think not. The Commissioners made it after consideration.
602. Now that the trains run only three times a week on the Temora line, are the men paid full wages? The maintenance men lose three-quarters of a day a fortnight.
603. I am referring to the men on the trains? As far as possible, when they are not working on the Temora line, their services are used in other ways.
604. *Mr. Neild.*] What do the engine-drivers do on the off days? Work is found for them in one way or another; but I do not know exactly how they are employed.
605. *Chairman.*] You have based your estimate of working expenses upon a cost of £85,000; but if the line

line were to cost £104,000, and were of a more substantial character than that you suggest, would not the working expenses be reduced? I think not.

606. Is there not more wear and tear on a cheaply-constructed line than there is upon a more substantial line? There might be a little less wear and tear, but that would be compensated for by the slow speed at which trains would travel over the cheaper line. Over one line you would travel at the rate of 15 miles an hour, while on the other line you could travel at 25 or 30 miles an hour, if necessary.

607. *Mr. Davies.*] The receipts on the Temora line show that that line is paying working expenses and more than $3\frac{1}{2}$ per cent. interest on the capital cost;—what interest is paid on the money borrowed for that line? Loans are not raised for any particular line.

608. But you do not pay more than $3\frac{1}{2}$ per cent. interest on any loan? Yes, we do. We reckon the average interest at about 4 per cent.

609. *Mr. Neild.*] I understand that your estimate is based upon a service three times a week;—if the trains run six days a week, would the working expenses be double? No.

610. How much would they be increased? I could not say off-hand; but they would not be doubled.

611. *Mr. Wall.*] Could not the staff now engaged on the Temora line be used to work the Wyalong line? I think not.

612. Do the trains run from Cootamundra to Temora and return to Temora on the same day? Yes.

John Harper, Esq., Goods Superintendent, Department of Railways, sworn, and examined:—

613. *Chairman.*] You have visited the country round and beyond Wyalong, I understand? Yes.

614. *Mr. Hoskins.*] I suppose you have, on many occasions, travelled between Cootamundra and Temora? Yes.

615. Is that country pretty well settled? Only comparatively well settled—there is not much population there.

616. What is the character of the settlement;—is the land settled by farmers, by squatters, or by small graziers? There are two or three squatters, and the rest of the land is agricultural country, in the hands of selectors.

617. Is much wheat sent over the railway from Temora to Cootamundra? About 40,000 bags during the season—that is, to Cootamundra and to other points along the main line.

618. Have you been in that locality lately? Yes.

619. Have you been beyond Wyalong? Not recently.

620. Have you ever been beyond Wyalong? Yes; I have been up in the Hillston and Cargellico District.

621. Is the country between Temora and Wyalong, and beyond Wyalong, similar to that between Temora and Cootamundra? I think the country between Temora and Cootamundra is better than that between Temora and Wyalong.

622. For grazing, or for agriculture? For agriculture and for grazing too.

623. Is the country beyond Wyalong, out towards Cargellico and Hillston, as good as that between Cootamundra and Temora? Yes; it improves as you go out towards the Lachlan. It is good country out there.

624. Where does that good country commence? I should think within 10 or 15 miles of Cargellico, say, 20 or 30 miles the other side of Wyalong. The country there is more favourable, I should imagine, for settlement.

625. Has any settlement been made in that district by selectors who have taken up large areas of land, and combine pastoral with agricultural pursuits? Yes; to a limited extent.

626. In what locality? Between Temora and Wyalong, there has been settlement of that kind. About forty people have taken up land there, and some of them have put in wheat; but the results last year were not very successful. About 1,300 acres of land were put under wheat, and the yield was about 10,000 bushels.

627. Was the season against them? They say that the season was against them.

628. Is the country beyond Wyalong settled? There is more settlement out in the neighbourhood of Cargellico.

629. How far from Wyalong? I suppose about 35 miles.

630. What are those settlers—are they vigneron, agriculturalists, graziers; or do they combine agriculture with grazing? They combine agriculture and pastoral pursuits on small holdings.

631. Do they seem to be fairly prosperous? I could not say. It is nearly two years since I was out in that neighbourhood, and then I did not go there with the view of making any inquiry into the nature of the settlement.

632. Have you heard the people in and about Wyalong express the opinion that when the Central Division leases expire, a large amount of settlement will take place in that part of the country? I have heard that said, wherever I have been in New South Wales.

633. Have you heard it said in that part of the country? I cannot say. I can scarcely recollect conversations of no moment to me which occurred two years ago.

634. Do the people beyond Wyalong suffer in consequence of the dryness of the climate and the absence of surface-water? Of recent years they have not suffered much from the dryness of the climate, and the pastoralists have made a lot of artificial water. What their reasons are for complaining about their lot, I do not know.

635. How do the people away from Lake Cargellico manage;—do they make tanks and dams? Yes.

636. Is it good holding ground for water? That I could not say.

637. Do you think from the information you have gathered from your recent journey, that if the railway were extended to Wyalong, a large additional area of land would be put under cultivation? I am very doubtful about it, under existing conditions, such as the price of wheat, and the discouraging circumstances of the last year or two.

638. You did not hear any of the settlers say that if they had the benefit of railway communication, they would cultivate wheat, because, at present prices, it would pay better than wool? I daresay I have heard them say that; but people will say anything to prove that they ought to get a railway.

639. What is your own opinion? I am rather inclined to be doubtful about it.

H.
McLachlan,
Esq.
16 May, 1894.

J. Harper,
Esq.
16 May, 1894.

- J. Harper, Esq.
16 May, 1894.
640. Doubtful about what—the propriety of making a railway? Of the extent to which agriculture will be gone in for.
641. You will not express any opinion as to the propriety of making a railway? I prefer not to do so.
642. You do not consider that a large additional area of land would be placed under cultivation, if the railway were extended to Wyalong? I do not see any reason for supposing that there will be more cultivation there than there is along existing lines closer to Sydney. For instance, between Cootamundra and Temora the area which has been put under crop owing to the construction of the railway to Temora is comparatively limited. There are still large areas of land there available for agriculture.
643. Is not the cultivation of land between Cootamundra and Temora increasing, having regard to the fact that the line has only been constructed a few months? It does not take long to put that land under cultivation, and the line has been under construction two years.
644. The country beyond Wyalong is not expensive country to clear? Not the country out towards the lake and the river. That country is not so expensive to clear as is the country between Temora and Wyalong.
645. If the line were extended to Wyalong, would it attract wool which now goes to Carrathool and Whitton, and thence down the Murrumbidgee to Echuca and so to Melbourne? I do not think so.
646. Why? Because nothing will bring that wool this way. Certain clips of wool in that district would have to go to Melbourne under any circumstances, unless their exportation were prohibited.
647. Why is that? Because the financial interests of the stations are in Melbourne.
648. Suppose we gave those stations increased facilities, in the way of cheap and rapid transit, do you think the wool would come to Sydney? We do that now. We offer low rates and rapid transit from Carrathool, Hay, and the stations on the Murrumbidgee; but, notwithstanding that, they cross the railway line, and avail themselves of the low transit provided by the steamers.
649. Do you not think that that is because the steamer freights are cheaper than the railway freights? That has something to do with it; but there are other reasons.
650. As a rule, the conveyance of railway produce does not give much profit to the railway? No. As a matter of fact it involves us in a slight loss.
651. Am I to infer from your evidence that you do not think that if the line were taken to Wyalong, or even farther west, the quantity of wool and wheat carried on the New South Wales railways would be increased? I do not think any new traffic would result. Of course, I am leaving the population now at Wyalong out of consideration, because it is problematical whether it will increase or decrease.
652. *Mr. McCourt.*] Could you make an estimate of the traffic in the Wyalong district which would go over the proposed line? Yes; I estimated that at £2,764. The following is a copy of my report, to which I have appended a list of the stations which would probably send their wool by the proposed line. [*Vide Appendix.*]

THURSDAY, 17 MAY, 1894.

Present:—

JACOB GARRARD, Esq. (CHAIRMAN).

The Hon. WILLIAM HENRY SUTOR.

The Hon. JAMES HOSKINS.

The Hon. FREDERICK THOMAS HUMPHERY.

The Hon. JOHN DAVIES, C.M.G.

The Hon. WILLIAM JOSEPH TRICKETT.

WILLIAM CHANDOS WALL, Esq.

WILLIAM MCCOURT, Esq.

JOHN CASH NEILD, Esq.

EDWARD WILLIAM O'SULLIVAN, Esq.

CHARLES COLLINS, Esq.

HENRY DAWSON, Esq.

The Committee further considered the proposed Railway from Temora to Wyalong.

John Harper, Esq., Goods Superintendent, Department of Railways, sworn, and further examined:—

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653. *Mr. Trickett.*] In your memorandum, dated 23rd April, 1894, you say that the line we are considering is proposed to form part of a scheme of railway construction to Hillston, on the Lachlan, *via* Lake Cargellico. Yesterday, however, Mr. McLachlan stated that that extension did not form the subject of any part of the Commissioners' report? Certainly. I only mentioned the fact because I thought it was one to which I ought to draw the attention of the Commissioners. My estimate was based solely upon the probable traffic of a line to Wyalong.
654. Whose proposal is it to extend the line to Hillston? I gathered that that was the intention, from the report of the surveyor engaged on surveying the route.
655. A surveyor from the Works Department? Yes.
656. Has your memorandum been before the Commissioners? Yes.
657. Can you tell us what is their view with regard to this very important proposal to extend the line to Hillston? Of course, I do not know; but I do not think they have gone into the question. I have not done so on their behalf.
658. Do you not think that that extension is one of the most important features in connection with the matter under consideration? That I cannot say. As far as my knowledge goes, the Commissioners have merely dealt with the proposed line to Wyalong.
659. Did you go to Hillston in the course of your inquiries? No.
660. Have you been in the district at all? I have been there twice. On the last occasion I was there about two years ago.
661. Did you not find that the traffic was being fairly well carried on by the teams along the road? Yes.
662. And that the road, in ordinary weather, was in fairly good condition? Yes. The first time I was up there, they had nearly 4 inches of rain, but when last I was there, the weather was dry.
663. With the exception of where it passes through the gilgai country, and could be repaired by the use of sapplings and metal, I suppose the road is as good as most country roads? Yes; it is a good back country road.
664. While in Wyalong, did you ascertain the views of the people with regard to the proposed railway? The people I spoke to in Wyalong did not appear to trouble themselves very much about the railway. They were more concerned with their mines.
665. The feeling in regard to it was certainly not keen? No.

666.

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666. At the present time, I suppose, the road traffic gives employment to a very large number of teamsters, farriers, hay and corn merchants, and others, who, if the railway were constructed, would probably lose their business? Yes; there are a large number of teams employed on the road.
667. Do you know what they are paying for carrying between Wyalong and Temora? From 30s. to £2 a ton. £2 a ton is about the most they are paying.
668. Is that for carriage both ways? That is from Temora. Nothing is being carried back as far as Temora; but they carry ore to Barmedman, at from 10s. to 15s. a ton.
669. Did you find that the people at Wyalong were suffering hardships through not being able to get provisions up? No; I found everything remarkably cheap there. I only paid 1s. 6d. a feed for each of my horses.
670. You estimate the total possible goods and coaching traffic on the proposed line at £2,764 in round figures? Yes.
671. Is not that a pretty liberal estimate? Yes; because while I have only dealt with the railway to Wyalong, I have included the traffic from stations right out on the Lachlan, though it is doubtful if that traffic will come to the line.
672. *Mr. Neild.*] Do you anticipate that teamsters will compete much with the proposed line? I can hardly say; the teamsters are prepared to do such extraordinary things now-a-days. There might be some competition in high-class traffic. Our maximum rate would probably be about 4d. a mile; but there have been cases in which teamsters lately have been carrying for 2d. a mile.
673. The fact that teamsters are able to compete with the railway is largely due to the good seasons and abundance of grass which we have had lately? Yes.
674. In bad seasons, when teamsters had to carry their own feed, I suppose competition would be absolutely impossible? Yes; all but impossible.
675. Is there, in a good season like the present, a fair supply of grass along the road from Temora to Wyalong? No; the teamsters have to carry feed for the last 10 or 12 miles at the Wyalong end. There is scarcely enough grass there to keep a bullock alive.
676. When you speak of high-class traffic, I suppose you mean wool? No; 3d. a ton would be the local rate of wool.
677. You do not shut your eyes to the possibility of teams competing with this line? Well, I have ignored such competition, because in making out these estimates I believe in crediting the line with all the traffic to which it is entitled. Under ordinary circumstances we assume that it would have that traffic.
678. Then in good seasons you estimate that it might reasonably be discounted to the extent of the teamsters' competition? Yes; but the traffic would have to go to Young or Coolamon, or some other point upon the railway, so that we should not lose it altogether.
679. At present on none of your lines do you run at so low a rate as 15 miles an hour? No; 18 miles an hour is our lowest speed, including stoppages.
680. On what line is that? That is the average speed of a mixed train on the Cooma line.
681. In making your estimate, have you based it upon the existing current rates? We have local rates in operation on the Temora line, and I have credited the proposed line with an extension of those rates.
682. How much higher are the local rates than the ordinary rates? On wool they would be a 1d. a mile higher than the other ordinary through rates.
683. Have you taken into consideration the fact stated by the Secretary to the Railway Commissioners yesterday, that a slow train service is more expensive than a rapid service, inasmuch as the time occupied in running the trains over the line is almost doubled? I have not considered that.
684. But assuming that that statement was correct, the ratio of earnings to expenses would be reduced? Decidedly.
685. Is the Temora line worked at a slow rate of speed? No, at an average rate. The trains travel nearly 20 miles an hour.
686. With a slow rate of speed on the proposed line, while the earnings would be the same, the traffic expenses would be higher? Yes; the net earnings would be less.
687. Do you know if it is proposed to use the lighter class of engines upon the proposed line? No, I do not. I have not gone into that matter.
688. You do not expect that the traffic will necessitate the use of heavy engines? You can always move a limited load with a light engine, no matter what the weight of the trucks may be. For a light engine you would reduce your train weight, not your truck weight.
689. Is the loading likely to be sufficiently heavy to necessitate the use of heavy trains? I scarcely think so, though you might have exceptional cases during the wool season.
690. You say that about 10 miles from Wyalong there is little grass? Yes; because there you get into mallee and thick scrub—there is no herbage at all there.
691. Have you travelled beyond Wyalong? No. I have been to Hillston, and through Cargellico; but I do not know the country between Wyalong and Cargellico.
692. How did you get to Hillston? From Carrathool and from Hay. I have been there twice.
693. From the information you obtained there, did you come to the conclusion that the present population of Wyalong is likely to be permanent? I heard so many different opinions that I am in doubt as to what the character of the population would be. Some people thought the field was everything that was good, while others held contrary opinions.
694. The feeling of uncertainty about the permanency of the population would lead to a feeling of uncertainty in your mind about the prospects of the line? Yes.
695. From your knowledge of roads in this country, which I assume to be very extensive, do you think that the condition of the highway between Temora and Wyalong is likely to cause serious inconvenience to the traffic? I do not think so; and they are improving it every day. They now make a detour through Christie's Paddock, on Wyalong Run, to avoid the worst of the gilgais. There is a splendid track there, and I travelled over it in a buggy at the rate of 8 miles an hour.
696. How is the road between Barmedman and Temora? It is cut up a good deal; but it would be possible to improve it.
697. That road runs through pine scrub? Yes; but if you go off the track into the bush it is not a bad running road.
698. When I drove over it, ten or twelve years ago, it was difficult to traverse, because of the numerous

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- little pine stumps sticking up like so many cobbler's pegs. Is that its condition now? No; I drove from Barmedman to Temora with the Commissioners at night. The road is practically clear now, the ruts being the worst thing about it.
699. In making your estimate, you have given the proposed line the benefit of the doubt in all cases? Yes.
700. *Mr. Wall.*] If the Commissioners state, through their secretary, that they have no knowledge of the intended extension of the line to Hillston, they cannot have read your report? What I take them to mean is that they have no knowledge of the extension, so far as being prepared to give evidence in connection with it.
701. You state that the rates chargeable on this line, if constructed, would be the same as those now charged on the Temora line? Yes; local rates, which are higher than the through rates. We charge through rates from Sydney to Cootamundra, and from there to Temora we charge a local rate.
702. The rates on the proposed line would be the same as you are now charging on the Temora line? Yes.
703. Have you any knowledge of the settlement between Wyalong and Lake Cargellico? No; I have not been over that country.
704. In investigating this matter, did you make any inquiries as to the settlement existing within a certain radius of Wyalong that will be served by the proposed line? No; for the simple reason that there was no one at Wyalong who had time to give me the information, or whose interest it was to do so; but I did what I considered would be more satisfactory: I reckoned upon all the traffic within 50 miles one way, 60 miles another, and 40 miles another.
705. If the settlement between Wyalong and Lake Cargellico is as great as that between Barmedman and Temora, it is reasonable to suppose that there will be as much traffic from that part of the country? Yes; assuming that that country were served by the proposed line.
706. If there was an equal area of land under cereals in the vicinity of Wyalong, that produce would be brought along the proposed line? Yes.
707. Assuming that the population of Wyalong will be as great or greater than that at Temora, is it reasonable to infer that the goods and passenger traffic on the proposed line, apart from the produce carried, will be at least equal to the traffic on the Temora line? Decidedly.
708. Can you give the Committee any information as to the normal volume of traffic on the Temora line previous to the Wyalong rush? Yes.
709. Will you give us the monthly cash returns? Yes; though before doing so I should like to point out that they are rather misleading, because during the first few months that the line was opened all the wool and wheat traffic of the season came over it. The total traffic for September was £622; for October, £1,132; for November, £1,161; and for December, £708.
710. The rush commenced about the beginning of January? Yes.
711. And from January on, what were the earnings? In January, £533; in February, £632; and in March, £1,039. That is the last return that I have.
712. Do those figures represent the total earnings inwards and outwards? Yes.
713. Taking the average of the three months since January, there has been a falling off in the returns attributable to the failure of the wheat and wool traffic? Yes; but there were other causes. We had a truck rate to Temora of £32 10s., and the result was that we were drawing the Young traffic there, consequently we had to put Young on the same footing as Temora.
714. Did you visit Hillston to inquire into the volume of traffic going *via* Carrathool? To try and draw that traffic this way, if I could.
715. Was there much traffic going in that direction at the time? There was some wheat going from Gunbar to Carrathool and Whitton.
716. Was there any wool? Yes.
717. Was the survey of the proposed extension to Hillston made prior to your report? I made no report. I simply went there canvassing, to try and get the stations there to send their wool to Sydney.
718. Your visit had nothing to do with the construction of any line? No.
719. Do you know whether the proposed line from Temora to Hillston was surveyed before your visit to that part of the country or afterwards? I do not know. I did not hear of the surveyors being out when I was there.
720. You are not in a position to say whether the proposed extension has been under the consideration of the Commissioners? No; it has never been under my consideration.
721. You stated yesterday that the average production of wheat in the Wyalong district was about 9 bushels to the acre? Yes; that was according to the returns.
722. Are you aware that the decrease in wheat is to be attributed to the failure of the crop at Temora, not to the failure of the Barmedman crop? The return which I obtained from the local police officer showed that 9,000 bushels of wheat had been obtained from 1,300 acres.
723. Are you aware that Barmedman is included in the land district which extends to Temora? I cannot speak as to that; but I have a list of places where wheat is grown.
724. Are you aware that a large quantity of the wheat grown in the vicinity of Barmedman was cut for hay? Yes.
725. The evidence of the farmers examined by the Sectional Committee at Barmedman went to show that the average yield was 15 bushels to the acre? I can only quote the official returns.
726. You did not make any inquiry among the farming community as to what the yield was, you simply took the returns furnished to you by the police at Barmedman? That is so.
727. If the population at Wyalong were as great or greater than the population of Temora, would it not give a return to the railway equal to that furnished by Temora? Decidedly. I may mention that the returns of the inward tonnage there is based upon two months of analysed Temora traffic, as distinguished from traffic coming to that place from Young and other districts.
728. Does the train from Cootamundra to Temora return from Temora to Cootamundra the same day? Yes; coming back at night to meet the mail. The engine is stabled at Cootamundra.
729. Does the train remain at Cootamundra the next day? No; It runs to Gundagai on the alternate days.
730. *Mr. Humphery.*] What was the cost of carriage from Temora to Cootamundra prior to the opening of

of the railway? Rates were very high everywhere, then; but they have gone down since the breaking up of the Carriers' Union. I should imagine that at that time they amounted to between £2 and £3 a ton.

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731. What was the cost of carrying wheat from Temora to Cootamundra? I can scarcely remember; but I should think about 5d. or 6d. a bushel. That is about the usual rate for the distance.

732. Are we to understand that the Commissioners carry wheat from Temora to Cootamundra for ½d. a bushel per mile? Yes. The rate would be 6d. from Barmedman, and 9d. from Wyalong. That is the through rate. It does not matter where the wheat comes to, it is charged for at that rate. For instance, if it were milled at Cootamundra, and then came on to Sydney, it would be charged the extended through rate.

733. Do you not think that in view of the great benefits given to the district by the railway, the rates might have been fixed somewhat higher? No; the policy of the Commissioners has always been to encourage agriculture, because they think that if indirectly they get an advantage from the increased production, they are rendering a benefit to the country.

734. Do you think it is possible for any branch railway to pay if you carry wheat for one-twenty-fourth part of the amount which teamsters charge for carrying it? I think so, if there is sufficient population in the district.

735. What are you charging for wool? I have given the line credit for 3d. a ton per mile.

736. But what do you charge between Temora and Cootamundra? Three-pence a ton per mile is the local rate.

737. That is about 10s. a ton for the 40 miles? Yes.

738. What was the rate before the line was opened? I could not say; but I should imagine that it was about 1s. a ton a mile.

739. So that it is now carried for a fourth of what was charged before the opening of the railway? Yes.

740. What is the present rate charged by teamsters? You can hardly tell. I have known them to take loading for 2d. a ton per mile.

741. But what is the ordinary rate? The ordinary rate up to 50 miles is about 1s. a ton. Beyond that it is about 19d. a ton.

742. So that producers of wool in the Temora district have benefited to the extent of 9d. in the 1s., and producers of wheat to the extent of 5½d. in 6d., by the opening of the railway? Yes, that is the position.

743. You are familiar with the whole of the district between Forbes and Hillston? Yes; I know it all pretty well.

744. Are you familiar with all the stations beyond the Lachlan? Yes; I have been on many of the stations between the Lachlan and the Darling.

745. From your knowledge of the present traffic on the New South Wales railways, can you say if the extension of the railway from Temora to Cargellico, and on to Hillston, would serve a district not at present served by the Hay railway? I do not think it would. I think that relatively all these districts are pretty well served. It is good travelling country at the time they want to travel,—that is, during the summer months.

746. Are you of opinion that much of the traffic on and beyond the Lachlan would come to an extension of the proposed railway to Hillston? I do not think so.

747. Why? Because, as I pointed out yesterday, most of the stations there are owned and controlled by Victorian financial agents, so that the wool naturally goes down the Murrumbidgee.

748. Which of the railway stations receive most of the traffic from the stations on and beyond the Lachlan? Carrathool, Whitton, and Hay deal with most of that traffic.

749. And traffic going to those stations mostly continues on to Victoria? Yes.

750. Going down the Murrumbidgee to Echuca? Yes.

751. What is the reason for that? I think most of those properties were taken up by Victorian financial institutions, which exercise a very strong control over them still, and they feel indisposed to send their wool to Sydney under any circumstances. I have a very interesting map here which shows our position on the Lachlan.

752. From what part of the Lachlan district does the traffic find its way over to Victoria instead of coming to Sydney? Nearly all the traffic in the district having Marfield, Yallock, Yathong, and Coon Downs for its northern boundary, and Huntawong, Cowl Cowl, and Gunbar for its eastern boundary, finds its way to Carrathool and Hay. All the frontage stations send their produce to the Hay line.

753. Are you of opinion that if the Temora line were extended to Hillston *via* Lake Cargellico, the wool from the district you have just mentioned would make use of that extension instead of going into Victoria? No; I think that the bulk of it would still go down the river.

754. You do not see any prospect of such an extension becoming profitable by reason of any fresh traffic which it would gain for the New South Wales lines? No; I might mention as bearing on this point that this year we offer a special rate of £3 5s. a ton, which is little more than half the ordinary rate, for the wool coming from a station within 60 miles of Cobar, in order to induce them to use our railways; but we could not do so generally.

755. From what you know of the Lachlan district, do you think that eventually the line should be taken from Forbes as far as Cargellico and Hillston? I think that would be a better strategical line, because it would intercept the traffic better, and would run parallel with the Cobar and Hay lines. If such a line were made, it would intercept a great deal of the wool going to the river, and would have a chance of getting that traffic.

756. Are you of opinion that the earnings of such a line would be much greater, or at any rate greater than the earnings of a line from Temora to Hillston and the Lachlan? That is a very difficult question to answer without having gone into the matter.

757. I am asking you from your knowledge of the various stations out there, and the probable traffic that would come to the New South Wales railway system? Personally, I should prefer a line down the Lachlan.

758. From Forbes? Yes.

759. Are you of opinion that for the profits of a line to Wyalong we should have to depend wholly upon the traffic of the district between Wyalong and Cootamundra? No; and you will notice that in my estimate I have allowed for the produce of stations so far away as Uabba, which is 60 miles from Wyalong;

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- Wyalong; though I think it extremely improbable that that wool will go to Wyalong. I think it will continue to go to Whitton; but still I have credited the Wyalong line with it. Similarly I have credited that line with the Ungarric produce, though that station is 40 or 50 miles from Wyalong.
760. You have credited Wyalong with produce which will probably still continue to go to Carrathool or Whitton? Yes. To make it a little bit clearer to the Committee, I may mention that I have based my estimate at 82s. 3d. a ton for greasy wool as far as Wyalong, while the rate to Coolamon is 70s. a ton, to Cowra 60s. 3d., and to Carrathool 64s. 9d., a difference of nearly £1 a ton in favour of Carrathool, which is a big consideration with the teamsters in that dry country.
761. What is the difference in mileage? Carrathool is 420 miles and Wyalong 331; but, of course, the competitive rates are in operation at Carrathool. Our rate to Carrathool for ordinary merchandise is £30 for a 6-ton truck; but I have credited Wyalong with earning £36 8s. for a similar load, so that practically a carrier would gain £1 on his wool and £1 on his merchandise by sending his produce the longer distance. The unfortunate part is that we compete with our local rates on the south-west line.
762. *Chairman.*] But the competitive rates must be maintained in order to keep what you have got, without taking anything else into consideration? Yes.
763. If the trade on the proposed line increased to such an extent as to justify you in imposing ordinary rates, what effect would the Carrathool competition have then? Practically the Wyalong rate is almost a competitive rate in itself, as compared with the rates to other places. The Temora rate is a competitive one, because it comes into competition with the Narrandera rate. There are competitive rates in operation as far as Narrandera, and also to Junee; and so, practically, we will have to have competitive rates to Temora.
764. Can you tell the Committee where the produce of the county of Dowling goes to—does it find its way *via* Hillston to Carrathool, or does it go to Forbes or to Temora? Most of it goes to Whitton or to Carrathool, though some of it goes to Forbes and to Cowra.
765. Then, you take that country as the competing ground of the three routes? Yes.
766. *Mr. Humphery.*] Has the Temora line interfered at all with the earnings of the Young branch? Yes; it affected them very considerably, owing to the operation of the competitive rates. The rate to Young until recently was £36 for a 6-ton load, the distance being 250 miles, whilst to Temora it was £32 10s., the distance being 292 miles.
767. During the winter you will not get much wheat or wool on the Temora line? No; that traffic has practically ceased for the year.
768. Then we may anticipate the average earnings for the next three or four months to be much lower than the earnings of the summer months? The earnings will be scarcely anything just now.
769. *Mr. O'Sullivan.*] I gather from the important evidence which you have just given us that, until we can adopt some means of diverting the wool from the Victorian railways, we must merely treat this proposal as a line to Wyalong? Yes.
770. We need not look for new traffic beyond a few miles from Wyalong? There will be no new traffic.
771. You estimate that about 10,000 bales of wool will be sent to the line from the stations named in the list you handed in yesterday? Yes.
772. That would give a good local traffic? Yes; I have given the line full credit for wool.
773. I suppose your estimate is a very liberal one? Yes.
774. I gather from what you have said that you are somewhat doubtful about the permanent character of the Wyalong population? Of course, everyone is bound to have their doubts about a gold-field until the place is fully tried.
- 774½. Have there not been some very encouraging telegrams from there recently? Yes; but I have had the pleasure of reading Mr. Pittman's report, and I should like the prospects to be stronger than they are.
775. I presume it is upon what you have seen and read and learnt from others that advice has been tendered to the Commissioners to suggest the postponement of this work for six months? You have my report before you, and I suppose they based their recommendation upon it. Beyond that, I do not know anything of their action in the matter.
776. *Mr. Davies.*] In the event of the Temora line being extended to Hillston, would it take any of the traffic down the river to Victoria? No; it could not do so.
777. I presume you paid visits to the thirty stations named in your list? No; but I was able to obtain their clips from our knowledge of what they sent last year.
778. Not from personal inquiry? No. We know what was booked last year.
779. Can you tell the Committee what is the gross number of sheep on those runs? About 900,000.
780. And you estimate that those sheep produce something like 600 tons of wool? Yes, about 10,000 bales.
781. Is that a fair average return? My figures are taken from the sworn returns of the stations, as well as from our books.
782. Do you not think that £165 is a very small estimate of the value of the wool traffic from Wyalong to Temora? That is for the wool traffic from Barmedman, and, in addition, I have allowed £536 for 6,700 bales of wool and sheepskins coming from Wyalong. In connection with the Moree line, I only allowed 2d. a ton per mile; but here I have allowed 3d.
783. You estimate 1,000 tons of wheat at 6d. a ton;—does that cover the 38 or 40 miles between Temora and Wyalong? No; it covers the through mileage. Practically, the basis of all wheat rates is the distance to Sydney. If the wheat is milled and converted into flour at Cootamundra, or elsewhere along the line, it is still allowed to come on at the through rate, instead of paying two local rates. The local rate is made up of 49 miles added to the distance from Sydney to Temora.
784. Then, if a farmer sent 100 tons, you would charge him £2 10s.? That is what the through rate would be. If the wheat only went from Wyalong to Temora we should charge a higher rate.
785. What would it cost to bring wheat from Wyalong to Sydney? Fourteen shillings and sixpence a ton.
786. And from Cootamundra to Sydney? Thirteen shillings and sixpence a ton.
787. That is a difference of a 1s., which I suppose would be made up of a 6d. a ton to Temora and another 6d. to Wyalong? Yes.
788. Do you regard the carriage of wheat as profitable? No; it does not pay in itself.
789. How do you make a profit then? That is a very intricate matter to explain. Of course, in framing rates,

- rates, we must have regard to a good many things. First, we must study what charge an article will bear, because if the rates were too high it could not be produced. J. Harper,
Esq.
790. Have the rates for the carriage of produce ever been lower than they are now? No; they are lower now than ever they were before. 17 May, 1894.
791. Another commodity which I suppose does not pay the Department for carrying is coal? There is a very narrow margin of profit in connection with coal.
792. Is the rate on coal lower than the rate on wheat? It is higher than the rate on wheat; but of course it is hauled for shorter distances.
793. Wool gives a fair return, does it not? Yes; it is one of our biggest sources of revenue.
794. Does it pay better than most other articles of produce? It pays better than any other article of produce.
795. You also take into account 250 trucks of live stock? If that estimate had been based on the actual traffic from Temora it would have been a good deal lower; but I took into consideration the fact that the Temora line has not been open very long, and people may not have got into the habit of sending their stock along it; but in any case the estimate is very high. During the seven months that the Temora line has been opened we have only taken 58 trucks of live-stock along it.
796. Do you think that there will not be a very large number of sheep coming to Sydney? No; because there is not much fattening country out there. The country is not held for fattening purposes.
797. You allow £425 for passenger traffic—do you not think that that is a very small estimate? It is based, as I explained yesterday, upon the number of passengers carried on the Temora line under normal conditions.
798. Do you think the estimate a liberal one? Yes, a very liberal one.
799. Is the country between Temora and Wyalong country through which a railway could be cheaply constructed? Yes.
800. That being so, and the roads there being very defective, would it not be advisable to construct a cheap line of railway? That opens up a very large question. A cheap railway costs more for maintenance than a better line.
801. Could not an abundance of ballast be obtained in the district? Yes; but that is rather an engineering question.
802. But you know whether it is an expensive country for railway construction? It should not be expensive country.
803. You think that the construction of the railway might stand over for a time? That is my opinion.
804. The Commissioners' report was based upon your recommendation? It would be, so far as the earnings of the line were concerned; but the Commissioners went over the country themselves.
805. If the construction of the railway is postponed for six months, do you think it will greatly inconvenience the people between Wyalong and Barmedman? I do not see how it could with the existing low rates of carriage.
806. Even at the special rates you propose would you be able to carry freight between Temora and Wyalong for less than half what is paid to teamsters now? Yes. Our highest charge would be 4d. per ton per mile.
807. The same might be said with regard to the ore going to Barmedman? That would be charged for at the rate of 1d. per ton per mile.
808. Then, would not the railway be a means of developing traffic? I do not think so. It would not cause a single additional bale of wool to be produced, and I do not think they would continue to send ore to Barmedman. They would be more likely to take up the Barmedman battery and send it to Wyalong.
809. But then there are supplies to be taken to the gold-field? A railway there would not make any difference to the consumption. When I was in the district we could get things more cheaply at Wyalong than at Temora.
810. But would they not get them still more cheaply if there were a railway? I do not think the traders would reduce their prices so much.
811. *Mr. Hoskins.*] Are you familiar with the country between Forbes, Hillston, and Cargellico? Yes; I have been up both sides of the river.
812. Are there not one or two towns in that district? Yes; Condobolin and Euabalong.
813. A railway from Forbes to the Lachlan would not only serve the district traffic, but would also the trade of those two towns? Yes; it would be closer to those towns than the proposed line.
814. Is not the country between Forbes and Hillston better than that between Wyalong and Hillston? It is generally regarded as better country along the river frontages.
815. Do you not think that a line from Forbes to Hillston would offer more facilities for trade than the proposed line, and would intercept traffic now going to Carrathool and Whitton? Yes; I think that where a line intercepts traffic it is not likely that people will cross over it to go elsewhere.
816. *Chairman.*] You said that the traffic during the months immediately following the opening of the Temora line was abnormal, because of the quantity of wheat and wool that had been held back. How do you reconcile that with the fact that the returns for September were only £632, while in October they reached £1,132, and in November £1,161? October and November were the two wool months. In September no wool was moving. The wheat traffic makes very little difference to the returns.
817. How many bags of wheat were sent from Temora to Cootamundra last season? About 45,000 bags were sent from Temora altogether last season.
818. Was your estimate of the traffic coming from the country between Wyalong and Lake Cargellico based upon the traffic now coming to Temora from that district? Do you refer to the wool traffic?
819. To the traffic generally? As far as the wool traffic is concerned, some of it goes to Carrathool and Coolamon, and some of it goes to Temora. Each clip was taken out and corrected to the last returns.
820. *Mr. Humphery.*] What would be the freight paid on the 45,000 bags of wheat going over the Temora line, assuming that all went to Sydney? Roughly, about £3,400.
821. How much would you credit the Temora line with? The sectional returns are not prepared by me; but they would credit that line with $\frac{2}{3}$ of the total freight.
822. Which would be approximately how much? £450. Some of that wheat, however, may not have gone to Sydney, so that the proportional earnings might be higher.

MONDAY, 21 MAY, 1894.

Present:—

JACOB GARRARD, Esq. (CHAIRMAN).

The Hon. WILLIAM HENRY SUTTON.

The Hon. JAMES HOSKINS.

The Hon. FREDERICK THOMAS HUMPHERY.

The Hon. JOHN DAVIES, C.M.G.

The Hon. WILLIAM JOSEPH TRICKETT.

WILLIAM McCOURT, Esq.

JOHN CASH NEILD, Esq.

EDWARD WILLIAM O'SULLIVAN, Esq.

CHARLES COLLINS, Esq.

HENRY DAWSON, Esq.

The Committee further considered the proposed Railway from Temora to Wyalong.

Edward Fisher Pittman, Esq., A.R.S.M., Government Geologist, Department of Mines, sworn, and examined:—

- E. F. Pittman
Esq.,
A.R.S.M.
21 May, 1894.
823. *Chairman.*] You have recently visited the Wyalong gold-fields, and the country adjacent thereto? Yes.
824. You have furnished a report, a copy of which you hand in? Yes. (*Vide Appendix.*)
825. How long were you in the district? Nearly three weeks.
826. Is the conclusion you have arrived at that it is difficult to say whether Wyalong will be a permanent field or not? I have reason to believe from the surface evidence that it will be a permanent field.
827. Are there as many indications of it being a permanent field as there was of Temora itself? I think more so. Temora was mainly an alluvial field; but in this case the best evidence of its permanency is in reefs. No alluvial has been discovered yet.
828. Would you liken or compare it with any other field which has been in existence for some years? I have never seen a field in which the conditions of the occurrences of gold were exactly the same.
829. Does not that make it difficult to prognosticate whether it is likely to be of a permanent character? Not necessarily.
830. Take Peak Hill for instance. Was it not expected that there would be a permanent field there when it was first discovered? The area which was discovered at Peak Hill was a very limited one—nothing like the extent of Wyalong.
831. *Mr. Neild.*] Are you of opinion that there is any serious risk or large probability of the country hardening at a depth, and the veins now being worked pinched out? I think the country will harden; but I do not think it necessarily follows that the veins will be pinched out.
832. Is the same formation being reached at a depth as that which exists on the surface? It is exactly the same formation.
833. And what is that? Decomposed granitic rock.
834. Is that showing signs of hardening as the sinking proceeds? No.
835. What leads you to expect greater hardness at a depth? Because the rocks have been decomposed by the action of the atmosphere, chiefly, and also by the percolation of water from the surface;—in other words, the decomposition has extended downwards from the surface, and I have every reason to believe that at an unknown depth you will reach the limits of the decomposition.
836. And you anticipate that the gold-bearing veins will be found to exist in that harder granitic rock? Yes.
837. The veins at present are rather narrow in their limits? No; they are narrow in places, but not narrow as a rule.
838. What width do they run? From a few inches up to 5 feet. One of their peculiarities is that they keep on widening and narrowing. Wherever they narrow you may expect them to widen again, and *vice versa*.
839. Is the rock likely to harden to such an extent as to render the cost of working unduly great and unprofitable? There is no doubt we must expect that that will be so in some cases, but not necessarily in all.
840. That is not a feature which you would regard as being in any way fatal to the success of the field in the future? I think it will influence largely the future of the field; but I cannot say which reefs it will pay to work when they get into the hard granite, and which it will not pay to work. I think a great many will not pay—certainly not so many as will pay under the present conditions.
841. That, of course, and the future profitableness of working, will necessarily affect the population? Undoubtedly.
842. Do you anticipate the opening-up of any alluvial ground in the district? Yes; I think we ought to expect alluvial ground will be found, although it will be very difficult to discover; the reasons I have mentioned in my report. The reason is, that the geological configuration of the country is obscured from its being a level plain covered by Pleistocene deposits. One does not know, therefore, where to look for an old valley, because one cannot see the sides of it in the shape of hills.
843. Then, altogether, you regard this as being a permanent field? I have every reason to believe it will be. I cannot see any reason why it should not be. I should like to explain a little more fully why I do not anticipate the reefs to pinch out. I have heard a good many people remark that they will probably pinch out; but I cannot see their line of reasoning at all. That decomposed granite which is now found on the surface was once undoubtedly hard granite. It was during the time it was hard granite that those fissures were formed in which the reefs now exist. In other words, the reefs are newer than the granite, but were formed before its decomposition commenced. Therefore, there is no reason why they should not exist down in the zone underneath the decomposed rock.
844. You say then that the gold having its origin from below was forced up from those fissures? No; I think the gold came in more from what we call lateral secretion, that is, that it was brought in by infiltrations through the walls.
845. Where a fissure existed in the original rock the gold would be likely to be found? Yes.
846. And there would be no reason to anticipate that these fissures were to be found only within a few hundred feet from the surface? Quite so.
847. They would be likely to continue downwards for a considerable depth? Yes.
848. Can you form any opinion as to whether any water difficulty may occur in connection with the mines? I should expect them to find water when they got down to the hard granite rock, because I believe the decomposition has been effected by the sinking down of water. 849.

849. Is there anything in that part of the country which would lead you to fear that the water difficulty might be excessive? I should not expect it to be excessive.
850. I suppose it is an open question? It is.
851. What is the greatest depth which has yet been worked? At the time of my visit 107 feet.
852. In going down do the reefs or veins improve or fall off in gold bearing qualities? I cannot say that there was any improvement or falling off, they seemed to be fairly consistent.
853. Is there much mining going on in the vicinity of Temora? Very little.
854. Are there any prospects of a permanency about Barmedman such as would give employment to a population which would require railway communication? I hardly think that, although at the time of my visit there were some negotiations going on for again floating the Barmedman mines.
855. The character of the country from Temora to Barmedman is practically repeated until you get near to Wyalong where a change takes place and a different class of country is arrived at? Yes.
856. And in the vicinity of Wyalong the country is not so good for agricultural purposes? I am not a competent judge; but I should have imagined that about Wyalong it was a very good agricultural land.
857. Did you pursue your investigations far beyond Wyalong? About 7 or 8 miles.
858. What was the character of the country? The same wherever I went, excepting that geologically it was slightly different. I got on a slate formation about 4 miles to the east of Wyalong.
859. Would you expect that to be gold-bearing? Yes.
860. Are there any workings in that class of country? Yes; one of the best reefs I saw was in a slate working about $1\frac{1}{4}$ mile from the surveyed township. There was granite on both sides of it.
861. That would be a likely place for expecting mineral deposits? Yes.
862. Does that slate country exist to any extent in the neighbourhood? Four miles east of the surveyed township you get the western boundary of the slate formation.
863. Has any gold been discovered there? I think so.
864. *Mr. Suttor.*] Can you give us any further information with reference to Wyalong? I do not think I can say any more than is contained in my report.
865. *Mr. Dawson.*] You say that the country between Barmedman and Wyalong is very similar to that between Cootamundra and Temora for agricultural purposes? I said that as far as I could judge Wyalong appeared to be a good agricultural country.
866. Do you think if the scrub were cleared off that the land about Wyalong is better agricultural country than that between Temora and Cootamundra? I should have thought so; but I do not pretend to give an expert opinion.
867. Do you know how many payable claims there were at Wyalong when you were there? I did not count them, but I believe as far as they knew there were between 40 and 50.
868. Has the field steadily progressed since then? I think so.
869. Do you think that the construction of a railway to Wyalong would give a greater impetus to mining there? Yes.
870. *Mr. Humphery.*] What area would give us a fair idea of the extent of the discoveries made up to the present time? I have given it in my report as about 7 miles by 7.
871. Would you consider that an extensive gold-field? That would depend on the amount of payable gold which had been discovered in it.
872. But having regard to the number of reefs discovered up to the present time? Considering the time they have been discovering the reefs I should say it was very good indeed.
873. In your report you mentioned that it is probable that when a depth of 200 feet is reached solid granite will be found. Before arriving at that depth do you think there would be employment for a large number of people for a number of years? Yes; I should certainly think there would.
874. It will take a considerable time to reach the solid granite? Yes.
875. Are you of opinion there will be a large settled population at Wyalong? As far as evidences go, one would be justified in expecting it.
876. You know the results of the various crushings which have taken place at Barmedman from stone carted there? Yes.
877. Are the results satisfactory or otherwise? Eminently satisfactory.
878. When you left Barmedman had provision been made for any machinery? Yes; I was given to understand that three machines would be shortly erected, in fact when I left I saw some of the machinery going to Wyalong.
879. You have no doubt that batteries will shortly be on the ground? Yes.
880. Do you think that the best stone has been sent to Barmedman? I do not. When I was there I saw some of the best stone which was being retained, so the owners told me, until the arrival of the batteries at Wyalong.
881. One would imagine that the best stone would be sent first? I think the best stone was sent in the first instance, but, subsequently, I think, the idea of the owners was that they would sooner have it crushed where it would be under their observation. They had an idea that the Barmedman battery was not quite up to date.
882. Do you think any quantity of picked stone is being kept back? Several people have told me they thought their stone was too good to send away. At the same time I do not anticipate there will be much higher results obtained than have been obtained in some instances. For instance one man crushed 16 or 17 tons for 4oz. 15dwt. per ton.
883. *Mr. O'Sullivan.*] In your report you say that up to the present time 488 tons of stone have been crushed for a total yield of 869oz. of smelted gold? Yes.
884. Do I understand that that was not picked gold? No; that included all the crushings—all that was sent to the mill, in fact.
885. You also state in your report that the field is about 800 feet above sea level, and there is every reason, therefore, to expect that in tertiary times the drainage from this area found its way to deep valleys and deposited therein the gold which was derived from the denudation of the reefs? Yes.
886. You mean, then, that there is alluvial gold at some depth? I mean to say that one would naturally expect it.
887. It is possible, then, that some rich alluvial may be discovered there, though at some depth? Yes.
888. Something similar to Gulgong? Yes. At the same time I would point out that the discovery of alluvial there is a matter requiring a great amount of patience, because there are no surface indications to guide one in looking for it.

E. F. Pittman,
Esq.,
A.R.S.M.
21 May, 1894.

- E. F. Pittman, Esq., A.R.S.M.
21 May, 1894.
889. You allude in your report to the presence of mispickel? Yes.
890. Does not that indicate sulphurous stone? Yes; sulphur and arsenic.
891. It will cost a good deal to treat that kind of stone? Yes.
892. That, you say, will have to be treated by chlorination? Yes; mispickel is about the worst form of ore to treat, even by chlorination.
893. Do the inclusions you refer to of country rock, known amongst miners as horses, indicate that the reefs there are what is known as shooty? No; the horse is merely an indication that when the fissure was formed a piece of the country rock fell into it.
894. It may be a good gold-bearing reef all the same? Yes.
895. You also state that one of the characteristics of the Wyalong reefs is that they thin out and make again at intervals. What does that indicate? I think I have described that in my report.
896. *Mr. Davies.*] Have you examined the reefs at Temora? Yes.
897. And at Barmedman? No.
898. Then you cannot say whether the same reef or reefs are found at Wyalong? I think it is extremely unlikely.
899. What is the character of the reefs at Temora—are they granite walls? No; the Mother Shipton, which is of any consequence there, is a large reef occurring in diorite.
900. You seem to regard the field at Wyalong as a permanent one? Yes; I can see no reason why it should not be.
901. And you believe it will be a payable field? I think so.
902. Have you any fear of the reefs pinching out at 200 or 300 feet? No.
903. Not to pinch out and make again? They will certainly do that.
904. What depth will they go before they make again? The reef makes immediately it thins out. For instance, in Gorman's reef, at 90 feet from the surface, I found in the shaft a reef about an inch wide. Ten feet on one side it was 4 feet wide, and 10 feet on the other side of that it was 2 feet wide, as far as it had been opened, and was probably as wide again.
905. If the walls are granite it will be expensive working? Yes.
906. Still the returns, so far, indicate a payable field? Yes.
907. Which way do the reefs run? I observed three different courses, but the most common one is north, 20 degrees east.
908. Is that the best one on that field? Yes. There are also rich ones running east and west.
909. What is the greatest thickness between the walls of the reefs you have seen at Wyalong? Five feet.
910. Defined granite walls? Yes.
911. Do the walls seem to make as they sink? No; good walls are not a characteristic of the field—as a rule they are not well defined.
912. The widest reef, you say, is about 5 feet? The widest part of a reef I saw was 5 feet.
913. To what extent was that stripped? I saw it in the shaft—it was 5 feet wide for 3 or 4 feet in depth. They were sinking along it. Following it down to about 60 feet at the bottom of the shaft it was 4 feet wide, about 35 feet down it was 5 feet wide.
914. Was that all carrying gold? Yes; that was Neeld's prospecting claim.
915. Was that the deepest claim? No; Taylor's shaft is 107 feet, but the reef is not quite as wide.
916. How far is that removed from Neeld's? About half a mile.
917. Is that the same reef? I do not think so.
918. In consequence of that I suppose you have come to the conclusion that there are a large number of reefs running parallel? Yes.
919. *Mr. Hoskins.*] Did you observe any permanent water on the ground? No; there is none.
920. Therefore, all the water which will be required for domestic purposes as well as for crushing, will have to be conserved there? Yes.
921. *Mr. McCourt.*] How long will it take to prove the permanency of the field beyond all doubt at the present rate of working? It depends on what you mean by proving. I cannot lay down an absolute rule. Take, for instance, Mount Morgan, which is not so good as it was, but I think every one will allow that it has been a permanent mine.
922. This field then may give out in a day, a week, or a month? I do not anticipate it.
923. You cannot place the matter beyond absolute doubt? No; I cannot go so far as to say it will yield so many hundreds or thousands of ounces. So far as my judgment goes it is likely to be permanent.
924. Would you be in a better position to say whether it will be permanent if you visited it in three or six months' time? Undoubtedly.
925. And even then it would only be a matter of opinion, and that is all it can be? Yes.
926. *Mr. Trickett.*] You say that the gold is probably deposited by the percolation of thermal waters? Yes; by that I mean hot waters. The waters down some depth in the crust of the earth carry silica in solution.
927. Is the deposit upward or downward? It is supposed to be a lateral deposit.
928. How is the stuff which is being obtained from the mines being treated? By crushing and amalgamation.
929. Are they getting the gold out well by that means? Yes, I think so; although there has been no proof as to what they are losing in the concentrates and tailings. I do not think that the battery at Barmedman is sufficiently gold-saving to warrant the continuance of its use without the people knowing what they are doing.
930. Then you do not know whether the best means are being adopted for getting the gold out of the quartz? No.
931. Your report indicates that as the field goes on the stuff will become much harder, and probably will have to be treated by the chlorination process? Yes.
932. Is that an expensive process? It is more expensive than amalgamation. It is the process adopted at Mount Morgan.
933. It is recognised there as being very expensive? Yes. They have got it as low as 19s. 6d. a ton, but as a general rule, it will cost more.
934. Do you think that this is likely to be a poor man's field? At present it is undoubtedly, because the sinking is so extremely soft, and the gold is so very free and plentiful.

935. As developments make it more difficult to work, is it not probable that the population will fall off considerably? Possibly. I do not think it necessarily follows, because if it were in the hands of companies they would probably employ a large amount of labour.

935½. *Chairman.*] How many men were on the field when you were there? I could not say.

936. Were they leaving the field or not? There are always some leaving it. When I went there there were more leaving than coming, but I have seen since that the rush has recommenced.

937. Can you form any idea as to the number of men employed? That would depend on the class of men who went there. The people I saw coming away were those who expected to find gold on the surface.

938. Leaving them out, can you form any idea as to what population could be supported there by the present developed field? No.

939. Although you do not anticipate that the gold will get any less, you think the difficulties, after you get below 200 feet, will be increased? Quite so. They might be.

940. They might be so great as to make it not pay? It might be so. I would like to explain, however, that the 200 feet is an arbitrary figure.

941. Do you not think that a gold-mine, with a railway within 30 miles of it, is fairly well served? Yes.

942. Did you ever know of any place where it was proposed to run a railway to a gold-mine upon its first starting—like Wyalong? I cannot say I have ever known a similar case.

943. Were provisions dear when you were there? Extremely cheap.

944. Was there any difficulty in getting teams to and from Temora and Wyalong? Only in very wet weather.

945. Is it a fact that they have found a better route to avoid the gilgais? Yes; I came back that way myself.

946. And it would not be a great hardship for the people of Wyalong to travel over a road of that kind to Temora? I should think not.

947. *Mr. Neild.*] Is timber necessary in the present sinking? Yes.

948. Can it be got in the vicinity, or would the construction of a railway line facilitate the supply? There is plenty of timber in the vicinity at present, but how long it would last if the field were largely increased, I could not say.

Walter Shellshear, Esq., M.I.C.E., Divisional Engineer, Department of Railways, Goulburn, sworn, and examined:—

949. *Chairman.*] How long have you been connected with the Railway Department? Twelve years and three months.

950. During the last year you have visited America, and reported to the Commissioners on the mode of working cheap lines of railway in that country? Yes; I left in August, and returned at the end of December. I was accompanied by Mr. Parry, of the Traffic, and Mr. Howe, of the Locomotive Department. I was looking into the question of the construction and maintenance of roads, and other matters in connection with railway business. I was seven weeks in the United States.

951. What railways came immediately under your notice? I travelled over 7,000 miles, most of which belongs to short companies. All the American lines are in private hands.

952. Were any of the lines which you passed over what may be called pioneer lines? More than half the lines I passed over were of that character.

953. Was the nature of the country difficult or easy for the construction of railways? I went over every class of country. I was three times over the Rocky Mountains on different lines; then on the level country of the prairies. Then I went to the country on the delta of the Mississippi; also, on the black soil country in the cotton districts, and then I saw the first-class lines in the Eastern States.

954. I suppose the Rocky Mountain line would not be a very cheap one? I might explain that the great point with all their lines is the extraordinary amount of care which is taken with their surveys. When it is decided to construct a line between two points, the greatest possible care is taken to secure the best line the country can afford. The country is thoroughly explored. There is a class of engineers known as locating engineers who undertake that work, and their value is estimated by the ease with which they get over bad country with easy grades and light works.

955. Are these locating engineers employed by the projectors on salary or by contract;—is there any inducement held out to them beyond their salary? I am not prepared to say. I believe in some cases they contract to make the survey, and in other cases they are on a salary.

956. Is the black soil country pretty flat? It is practically level.

957. What does it cost them to construct lines in that country per mile? It is very difficult to get at any accurate cost, on account of the incidental expenses in getting their charters through and floating their stock. All the lines there are very heavily loaded beyond the actual cost of construction.

958. What is the gauge on the lines? The gauge in the States is now almost universally the standard—4 feet 8½ inches. A large mileage of narrow gauge lines was constructed some years ago, but as fast as possible they are widening them to the standard gauge. For instance, the Rio Grande was on the 3-foot gauge, and they have widened it to 4 feet 8½ inches, the object being to allow through communication between all the lines.

959. In the first instance, when developing new country, do they run out a line of narrow gauge, and subsequently when trade allows, widen it to the standard gauge? No; they seem to be completely set against narrow gauges at the present time.

960. In constructing lines for the development of new country, do they make their works of a less stable character at first, with a view to improving them when traffic warrants it? As a matter of fact, their pioneer lines consist of a mound of earth, a few temporary trestles and wooden boxes, to carry them over the water-courses. The rails are closely timbered, the sleepers being close together. The lightest rails they use now are 50-lb. steel rails, but the general opinion of the engineers there is that nothing lighter than 60 lb. is expedient on account of the weight of the stock.

961. How close are the sleepers? Sixteen to a 30-foot length, that is 2,816 per mile.

962. What is the average here? Eleven and 12 to a 30-foot length, or 1,936 and 2,112 to the mile.

963. Do I understand that the roadway is merely a mound of earth without any ballast? Ballast is quite unknown there until you get on the heavy traffic lines.

- W. Shollshenar, Esq., M.I.C.E.
21 May, 1894.
964. What is the usual height to which the earthwork is made up? It varies very much according to the class of country, but you might assume that the rail level is about 18 inches above the ordinary surface. The object of keeping it up is to ensure good drainage, because without ballast it is absolutely necessary that the road should be properly drained.
965. As a matter of fact, then, there are no earthworks brought from a distance, but merely the material taken from the gutters on either side to form the mound? Not strictly speaking, because they are very careful there not to have any heavy grades, on account of the excessively heavy trains running, and it is therefore necessary in some cases to bring earth from a distance.
966. What do they consider a good grade? About 1 in 150 on level country.
967. What is the ruling grade over the Rockies? Some of them are as steep as 1 in 25—that is exceptional.
968. And on the Rio Grande? In some parts 1 in 30.
969. Are any of the companies with heavy grade-lines expending money in cutting them out? As far as the Rockies are concerned, the country has been so carefully explored, that they have got the best line the country can afford, but in the eastern states they spend vast sums in cutting out the grades, because it is ruinous to haul the very heavy traffic they have there over the heavy grades.
970. Does that apply also to curves? With the American rolling-stock curves are a second consideration. Bogeys are entirely in use there, and their engines are beautifully equalised for running over rough roads. I travelled round curves as sharp as $5\frac{1}{2}$ chains on the Rocky Mountains in a 70-foot Pullman car.
971. At what rate of speed do their trains run over the black soil country? I am afraid the speed of the trains there is limited to the rate at which they can drive the wheels, because they run at an excessive speed on the worst possible road. Their bogey rolling-stock and their central-couplers enable you to travel over the road at high speed, which with the English pattern of vehicle it would be unsafe to do.
972. Is there a centre-buffer? There is no side-buffer. There is a central coupling and buffer, which enables them to take the curves with perfect freedom, and at the same time mitigates the oscillation common with a slack-coupled vehicle.
973. Is this a combination of coupling and centre-buffer, or are the two separate from each other? It is a combined device.
974. Do you think it is applicable to our railways? Unfortunately it is not applicable to our stock, in which we have a large sum of money invested.
975. Presuming we were beginning afresh, would you advocate the use of such central-buffers and couplings? I would say they are incomparably better than ours.
976. I suppose it would be almost impossible to work the central buffer in connection with our present stock? Almost impossible.
977. Did you come to any conclusion as to what one of these pioneer lines would cost per mile on the black soil country? Excluding bridge and culvert work and the permanent-way, it would come to £400 or £500—that is in putting up the mound. The permanent-way is worth from £1,000 or £1,100 per mile for a 60-lb. rail.
978. Are you allowing for the extra sleepers? Yes; and I have allowed for the extra strong fish-plate which they use in America very largely. My estimate is exclusive of fencing and waterways.
979. What would the fencing add to the cost? About £100 per mile.
980. What sort of sleepers do they use? The sleepers are the great trouble in America—they are mostly pine and oak, but the life of them does not average more than six or seven years. Something like 15 per cent. of the total number of sleepers is renewed annually on their line.
- 980½. Do they spend as much labour upon them in squaring them as we do, or do they use them in a rough form? Some of them are sawn timber, and some of them are level on the two sides. The oak sleeper is simply a small tree levelled off at the top and bottom.
981. I suppose the mound is banked up to a certain extent on the sides of the sleepers? Yes; to an inch over the centre of the sleepers, and rounded off on each side.
982. Do you know the country in the Narrabri district? No; but I know some of the country in the Richmond River district. It is about the same as the black soil country in America.
983. What about the rainfall on the black soil country in America? It is not so heavy as our coast rainfall, but it is heavier than our up-land rainfall.
984. Is it an element of danger in washing away the mounds? Of course their roads very often do get washed away in heavy storms.
985. Do they travel over these lines at night-time? Yes; their engines are provided with a very large lamp, almost amounting to a search light.
986. What do you consider a safe speed to run over a railway built on the system to which you have been referring? It depends upon what rolling stock you have upon it.
987. With our rolling stock? Twelve or 15 miles. Most of our rolling stock has been designed on the English pattern, and it has not the elasticity or flexibility which the bogey stock has.
988. Does not the flexibility of the American stock give it a shorter life? I cannot say much about that.
989. As a matter of fact, it gets ricketty sooner than ours? The American engine, as a rule, has not the life of an English engine, because it has not the same amount of workmanship in it.
990. Then, if one of our engines ran over a line of that kind, it would not be safe to go at more than 15 miles an hour? No.
991. At what speed could the American pattern of engine travel over it? I travelled up to 50 miles of an hour. The roads were straight and level.
992. Do you know the Temora district? I have been to Temora, but not beyond it.
993. Do you think the country between Cootamundra and Temora easy country to make a line over? I do not see any difficulty.
994. Would you think it possible to make a line between Cootamundra and Temora on the £1,600 a mile basis? No. It is a question of more earthworks than on the plains, and that means expense.
995. Is the black-soil country to which you have been referring free from obstacles in the way of scrub? It is densely timbered and swampy.
996. Do they find it safe in swampy country to make lines of the character described, and to run trains over them at the speed to which you refer? They do it.
997. Have they many accidents? They have a large number, but in proportion to the business done I do not think you can call them excessive. You must remember that they move nearly 400 times the tonnage we do. America having half the railways in the world, you may reasonably expect to see half the accidents in the world take place there.

993. On the 10th October, 1893, the Railway Commissioners recommended that, for pioneer purposes, lines might be constructed at the rate of £1,750 per mile—that is exclusive of bridges, waterways, and station accommodation; this estimate comes out somewhat similar to the one you have referred to of lines over the black-soil country? The difference is that there is a certain amount of ballast allowed for in the Commissioners' estimate. I have not allowed for ballast in mine, but for a few extra sleepers to give the necessary bearing area for the road.

W. Shellhear,
Esq., M.I.C.E.
21 May, 1894.

999. *Mr. Sattor.*] What is the general impression you have formed of these light lines in America;—are they serviceable? They carry very heavy traffic on some of the lines, and they certainly do a large amount of business, and with suitable rolling stock, I think, they are the best thing which can be devised for new countries.

1000. *Mr. Collins.*] Were you upon these lines during wet weather? I was on them during pretty heavy rain.

1001. Do the engines sink upon them? No.

1002. Do not heavy loads make any impression at all? Not to a serious extent. Of course, where the traffic is heavy it becomes necessary to ballast.

1003. Do you think it would be necessary to ballast pioneer lines in this country? Not for one or two trains a day running at the speed proposed if the lines are properly drained.

1004. Do their roads cost much for maintenance? There was difficulty in getting reliable information on account of the great trouble with the timber. Fifteen per cent. of the sleepers have to be renewed every year, and a large amount of the time of the fottlers is taken up in renewing sleepers.

1005. Is there much wool or stock traffic on those lines? It is mostly cotton lumber, and there is also a good deal of fruit, meat, and fish carried in refrigerating cars. There is a limited amount of live stock carried.

1006. Are yards erected in which to put the live stock? Yes; cattle yards, the same as we have.

1007. Have they goods sheds? Yes, where necessary; but as a matter of fact, they run their lines through, and when they have constructed it they add these things as they require them at the terminal point. They are erected of timber.

1008. At what rate do they travel on the pioneer lines? Twenty or twenty-five miles an hour.

1009. What sort of bridges have they? Open tressle and wooden culverts.

1010. *Mr. Humphery.*] Are the lines in agricultural districts fenced? Where the stock is run then they fence the roads, because when they are not fenced they have to pay compensation for cattle killed. They fence when the cost of compensation becomes more than the value of maintaining the fence.

1011. How do they arrange for taking up and setting down traffic? They run what we know as the American car, and they are provided with a flight of steps at the rear, so that people may step down upon the rail level. They have no platforms beyond a few planks to cover the side of the ditch. The trains stop at fixed points according to the time-table.

1012. Are there any waiting sheds? In some places. At others there is nothing but a signboard stating that the trains stop there.

1013. Our timber being superior to that of the United States, would it be necessary to have a smaller number of sleepers than what they use there? If you do without ballast you must have close timbering, otherwise the sleepers will go down and the earth will come up.

1014. Presuming earthworks were made, are you of opinion that our lines might be built for less than £2,000 a mile? It depends on what creeks or waterways have to be crossed, and what earth works there are. There is plenty of country in the plains where you could build lines at £2,000 a mile.

1015. And they would be suitable for agricultural districts? Yes; a line similar to what I saw over there would answer every purpose of agriculture.

1016. Could you use upon those lines the ordinary rolling stock? At the speed of 15 miles an hour ordinary rolling stock could be used.

1017. With what weight of rails? Nothing lighter than 60 lb.

1018. *Mr. O'Sullivan.*] Notwithstanding the heavy cost of replacing the 15 per cent. of the sleepers, the lines you refer to are worked cheaper per annum per mile than ours? No, not as far as maintenance charges are concerned.

1019. I mean working expenses? I would not like to say they are; but most of them are doing a much larger business than on our lines, and of course, you could handle a large business cheaper than a small one.

1020. But they employ a lesser number of men per mile than we do? No, they have rather more men per mile on the maintenance of their roads than we have.

1021. I refer to the working of the line by porters and others attached to stations? Of course upon some of the lines absolutely no one is employed beyond the telegraph operator at wayside stations, but the trains are heavily manned, because they carry their staff with them.

1022. I believe they trust a good deal to luck in the working of the lines? They have a system of rules for working them.

1023. Did you hear of any serious accidents there arising from the rivalry of different drivers employed by different companies in reaching certain points? No; because their rules define where they are to cross, and they are not allowed to go beyond the points which they are directed.

1024. I suppose the lines in the old settled States in the east are constructed as well as ours? Yes; the Pennsylvania road is equal to anything in the world as far as the condition of the road itself, works, stations, and rolling-stock are concerned. The New York Central is almost as good.

1025. *Mr. Davies.*] What is the cost of maintenance per mile on our existing lines? It varies. On the outlying branch lines it is less than £100 per mile per annum.

1026. What would it be per mile in the black soil country of the States? The disturbing element of the cost of the renewal of sleepers comes in. The maintenance runs to about £150 per mile, but you have to consider the enormous number of sleepers they have to renew.

1027. Supposing cheap pioneer lines were constructed here, what would be the probable cost of their maintenance? Not more than £100 per mile per annum until the sleepers commenced to decay.

1028. What is the life of one of our ironbark sleepers? From seventeen to thirty years. I have taken many up perfectly sound after thirty years' service.

1029. You would not anticipate any great additional expenditure in respect of sleepers? No.

1030. Will your visit to America result in a reduction in the cost of maintenance here? There are very many points over there which are suitable in this Colony, and which will result in a decided saving in the maintenance of the lines.

1031.

- W.Shellshear, Esq., M.I.C.E. 1031. In ballast or sleepers? More in matters of detail in connection with working and management.
- 21 May, 1894. 1032. Is there any line in our system which would compare with the one you spoke of near Mississippi? No; there are many lines I travelled over which would compare more with the Junee to Hay and the Jerilderie line.
1033. Where? On the prairies.
1034. You believe branch lines could be constructed here at a cost of only £2,000 per mile? That is exclusive of fencing and waterways.
1035. *Mr. Hoskins.*] Supposing it is desirable to make pioneer or light lines here, would it not answer instead of having squared sleepers to have them half round with notches for the rails to rest upon? Half round sleepers such as you describe would be cut out of small young timber. Our ordinary sleepers are cut out of mature large size timber, and as a matter of necessity they are much sounder and more durable than the sapling timbers. It would be a question whether you could get those timbers sufficiently cheap to make it pay to have one or two renewals of them as compared with the life of one first-class sleeper.
1036. What is the average cost of the square ironbark sleeper? We are paying from 4s. to 5s. 3d. for 9 feet ironbark sleepers.
1037. What would half round sleepers, with a notch to bear the rails, cost? Where you have to bring timber from a considerable distance it would always pay to use the best you can get. Where you run a line through a timber country where there is a suitable class of sapling for half round sleepers it might pay to use them, but considerable allowance would have to be made for additional cost of maintenance on account of the speed at which they rot. The life of half round stuff is nothing like the life of the solid matured ironbark.
1038. Supposing they cost 1s. only, and the others cost 4s., and you renewed them twice, you would be a gainer? You would be a gainer, no doubt, in that case; but it would be a question of transferring the charge from the capital to the maintenance.
1039. The object of having pioneer lines being to have a cheap means of railway locomotion, would not the half-round sleepers answer the purpose for some time? Undoubtedly.
1040. Did you see any of the Baldwin engines, similar to those you have here, in America? I saw some similar, and some a little bigger.
1041. Was any special danger considered to attach to running them over the light lines of railway? They run them over there without quibble.
1042. Is it not a fact that they construct railways there with heavy grades as well as light? I have travelled over railways there with grades of 1 in 25. Speaking from memory, the rails were 65-lb. rails. The sleepers were spaced at 2,816 per mile. In some places the line was ballasted, and in some places it was not.
1043. *Mr. McCourt.*] Do heavy Baldwin engines run on the cheap lines in America? Yes.
1044. What is the weight of the engine and tender? Up to 90 and 95 tons. The tendency in America is to run excessively large engines on all lines. I have seen as many as three or four engines on one train with as much weight as it could stagger under.
1045. *Mr. Hoskins.*] But is not the weight equally distributed so that there is no inordinate weight on one pair of driving wheels? That is the great point about the American construction. The spring-gear is almost perfect, so that it is impossible to get any excessive weight in any one part.
1046. *Mr. Trickett.*] Did you see any of these lines being constructed? No.
1047. Are they constructed very quickly? Yes, as a rule. They have special scoops for taking out the side ditch and forming it, and they put on large gangs for the construction of the road.
1048. Would these scoop appliances be suitable for this country, where there are so many stumps? Yes, just as suitable as for other countries.
1049. Would the tressle bridges be suitable for this country? Yes; in fact our timber being so much better, we should get a better job.
1050. Do you think you could safely recommend these light lines of railway for a trial here? Yes, in many parts of the country. If we do not do something of the sort the railways will simply swallow themselves up with the interest you will have to pay on the capital.
1051. Would Wyalong be a suitable road to try it on? I have not been over the country; but the western plains is a class of country where they could be tried to great advantage.
1052. *Mr. Neild.*] I understand that the banking up of the earth on the American lines covers the sleepers in the centre, and leaves the end exposed? Yes.
1053. Do you think that the necessity for renewing the American sleepers is due in any way to the laying of the sleepers upon earth and covering them with earth? Not necessarily. My remarks with reference to renewals apply equally to the ballasted roads. The life of the timber is very short, even in the ballasted roads.
1054. Supposing the same method of covering the sleeper with earth were adopted in this country, do you think it would affect the life of our sleepers? Not materially.
1055. But timber lying on a good bed of sound ballast would surely last longer than timber laid on soil, or covered with soil? But the object of that particular form of mounding up is for drainage, and the timber, under those conditions, is not like timber more or less sodden in the ground.
1056. Are not our lines constructed very much on the plan of the American lines—are not water tables formed, and a bed raised upon which the ballast is raised? Yes.
1057. Does not that give you practically the same drainage as the American system, plus the superior drainage of your ballast? The difference is that if you put ballast upon a new embankment, when you start to run, that ballast sinks into the embankment, and the embankment forms a dam which holds the water in it. In many cases, if the line has been in use a little time the ballast gets completely destroyed for drainage purposes by the amount of material which gets forced through it.
1058. Are we to understand that the method of forming water-tables and embankments in America is superior to our method of construction? It is superior for that particular class of construction. For instance, in soft country their width of cutting is 24 feet for a single line; the width here is 15 feet.
1059. Supposing you get into self-draining country, how then;—would the American method of road-making compare with ours, apart from ballast? The two methods are practically one and the same, apart from the question of ballast.

1060. You spoke just now of the ballast settling down into the soil;—when one of our lines is thoroughly W.Shellshear, consolidated does that proposition apply? You are dealing with a consolidated concern, and not with a Esq., M.I.C.E. pioneer line. If you have heavy traffic ballast is essential, because with an earth-road the action of the traffic in wet weather will churn it into a state of puddle, but where you run one or two trains a day, the ballast, according to their experience, is unnecessary. 21 May, 1894.

1061. Were you not able to arrive at any conclusion as to the cost per mile of the pioneer lines, apart from the flotation and other expenses? It would depend upon the class of country—from about £2,000 in the easy country to £3,000 or £4,000 per mile, according to the amount of earthworks.

1062. You do not think there would be much constructed on a 4 ft. 8½ in. gauge in America under £2,000 per mile? I do not think there would be any of it constructed under that amount.

1063. I want to ascertain the practicability of using split sleepers from the matured tree without squaring, but treated in the manner indicated by Mr. Hoskins, namely by grooves being cut with a machine upon which to lay the rail? A sleeper of that sort, provided it was of equally as good quality as a finished sleeper, should have almost a correspondingly long life unless the fibre was opened out in the action of splitting.

1064. And it would be less expensive? I do not know, because the extra weight of it would add to the cost for the carriage and handling.

TUESDAY, 22 MAY, 1894.

Present:—

JACOB GARRARD, Esq. (CHAIRMAN).

The Hon. WILLIAM HENRY SUTTOR.

The Hon. JAMES HOSKINS.

The Hon. FREDERICK THOMAS HUMPHERY.

The Hon. JOHN DAVIES, C.M.G.

The Hon. WILLIAM JOSEPH TRICKETT.

WILLIAM CHANDOS WALL, Esq.

WILLIAM MCCOURT, Esq.

JOHN CASH NELLID, Esq.

EDWARD WILLIAM O'SULLIVAN, Esq.

CHARLES COLLINS, Esq.

HENRY DAWSON, Esq.

The Committee further considered the proposed Railway from Temora to Wyalong.

Thomas Rhodes Firth, Esq., M.I.C.E., Acting Engineer-in-Chief, Railway Construction Branch,
Department of Public Works, sworn, and examined:—

1065. *Mr. Suttor.*] You have seen the evidence which Mr. Deane gave before the Committee? Yes. T. R. Firth,
Esq., M.I.C.E.

1066. Have you anything to add to his evidence, or any information to give which you think would strengthen it? I do not know that I have. No information has come in from the surveyors since Mr. Deane was examined which would alter his evidence in any way. 22 May, 1894.

1067. Have the surveyors examined the line since Mr. Deane gave his evidence? They were at work when Mr. Deane was examined, and they are still out there.

1068. How many surveyors are there out there? Four—Mr. Kennedy, Mr. Calvert, Mr. Gillet, and Mr. Cummings.

1069. Have you any information as to the probability of the line paying? That is a question which I have not gone into; I have left it entirely to the Railway Commissioners and the Committee. We simply carry out our instructions.

1070. *Mr. Humphery.*] Have you formed an estimate of the probable cost of the line? I have gone into Mr. Deane's estimate, and I do not see any reason to differ from him.

1071. Have you any personal knowledge of the country? No; I have not been beyond Temora.

1072. What is the lowest estimated cost of a pioneer line through comparatively level country? I think such a line could be made for about £2,500 a mile—that is, if we got the rails carried at low rates. The Commissioners usually charge 2d. per ton per mile, unless they got return freight. If they charge at reduced cost there would be a saving of £150 a mile.

1073. How is your estimate of £2,500 per mile made up? I have estimated for earthworks, including box-drains, bridges, level-crossings, and a very small portion of fencing, £486 per mile; for permanent-way material, freight, laying, ballasting, and sleepers, £1,490 per mile.

1074. *Chairman.*] What would the weight of the rails be? They would be 60-lb. rails, thus making a total of £1,976 as the cost of the line alone. Then, for station buildings, water supply, and supervision, I allow £455 per mile, and adding 5 per cent. for contingencies, the total cost comes to £2,553 per mile.

1075. *Mr. Humphery.*] What have you allowed for freight? Two hundred and fifty-five pounds per mile. I have assumed that we shall get the rails from the last indent, which is at a much lower rate than we have got them before, and indeed, the lowest rate at which they have been delivered in the Colony.

1076. Then, without freight, and excluding the cost of station buildings, &c., your estimate comes to about £1,700 per mile? Yes; about that.

1077. *Mr. O'Sullivan.*] I think you heard the evidence given yesterday by Mr. Shellshear? Yes.

1078. I presume that what they have done in America in level country, your Department could do here? Yes.

1079. That is, making allowance for difference in conditions and circumstances? Yes; there is no reason why we should not.

1080. Have you noticed the low estimate given by the Commissioners for the line as a pioneer line? Yes; and I believe that the reason why the Commissioners' estimate is lower than ours, is that they propose to deliver the rails for from £3 to £3 10s. a ton, while they would charge us £2 8s. a ton for freight alone.

1081. Three pounds or £3 10s. a ton includes the cost of the rails? The cost and everything. We have a little over £3 a ton more to pay for our material than they offer to deliver it at.

1082. But that would not make up all the difference? Then they propose to leave out ballast, which would come to £300 a mile, and would make a difference of about £20,000 in the whole estimate,

1083. Making these allowances, your estimate is practically the same as that of the Commissioners? Yes; about the same.

1084. What the Commissioners would do for their own line they ought to be prepared to do for a Departmental line? Yes. 1085.

- T. R. Firth, Esq., M.I.C.E.
22 May, 1894.
1085. If they did so your Department would construct the line as cheaply as they propose to construct it? Yes; within a few pounds, if they supplied satisfactory material at the price they name.
1086. I presume that such a line would fit in well with the character of the country round Wyalong? I suppose it would. It would carry a light, slow-speed traffic. I believe they intend to supply old second-hand rails.
1087. Where will they get them from? They would be rails which they are now taking up as unfit for heavy traffic. They would get their rails for nothing.
1088. Those rails would be available for your Department if the proposed line were authorised? Yes; the Commissioners have made such an arrangement in connection with the line from Narrabri to Moree, and it becomes a question whether they would have a sufficient number of rails for the two lines, supposing that both were being constructed at once. I am not sure that they would.
1089. Was the line from Nyngan to Cobar constructed as a pioneer line, or as a strong line to form part of the railway to Broken Hill? It was first intended to be a light line. Then, at the request of the Commissioners, the gauge was altered from 1 in 75 to 1 in 100. After the work had been going on for about nine months, I went up there, and I found that, owing to the wet weather, miles of the line had been washed away, and the ground was so soft that you could not walk on it. I made arrangements for the embankments to be raised out of the wet, and the subsoil to be drained by a drain on each side. That work, of course, has increased the cost of the line very considerably, but now we have a good line, and one that will stand in almost any sort of weather.
1090. Can you recollect what the additional cost of the line was above the contract price—something like £40,000 was it not? I think it was quite that.
1091. That line would not be regarded as a pioneer line? Not now.
1092. But even at first? To some extent it was. It was to be a cheap line, but the gradients were kept down, having in view the possibility of its becoming the main line to Broken Hill.
1093. Do you think that if a pioneer line were made to Wyalong, you would have to go over it and strengthen it? That is very likely. In these flat districts, once you make an embankment by depositing ballast, you stop the water which runs over the surface, even though the volume of water is so small that you cannot see it, and this water washes the embankment away. The ground is so flat that you cannot get enough fall to drain the line unless you raise up the embankment. If the embankments are made on the surface of the ground, we must naturally expect them to be washed away after heavy rain.
1094. But they have similar deluges in America? Yes; and I suppose with similar results.
1095. Anyhow they find it safe enough to work these light lines there? We hear nothing of trains being delayed every week or two. Such a line might work here for twelve months without being stopped.
1096. If the line were carried out on the estimate supplied by the Commissioners, it is quite probable that it might be worked for a considerable time without any alteration at all? Yes; it might be.
1097. *Mr. Davies.*] Would such a line carry ordinary traffic at a slow rate of speed? Yes, during fine weather.
1098. The rolling-stock used on the main lines could be used on the line you have been speaking of? Yes; such a line would carry any of the ordinary rolling-stock, provided the Commissioners did not use very heavy engines upon it.
1099. How much ballast did you allow for? Seven-and-a-half inches deep; that is, 5 inches under the sleeper in the middle, and 2½ inches up the sides.
1100. Is that in excess of what Mr. Deane allowed? No; it is just the same.
1101. Is not 3s. 6d. a yard a very high estimate for ballast? I do not think so. I have not been over the line, and I do not know where the ballast would be got from; but the price would be rather a low one, if the ballast had to be carried any distance. We generally pay 4s., 4s. 6d., and 5s. a yard for ballast.
1102. Is not 1s. 6d. a very high price for laying the road? I do not think so. We must bear in mind that that includes the cost of taking material right through from Temora, spiking the road, lifting and straightening it, curving the rails, re-drilling fresh holes in rails, and a lot of contingencies. 1s. 6d. is the cost of laying the rails alone, apart from the ballast.
1103. Is not the cost of sleepers very high? Until the present time, we have never had them delivered at the price named; but we are getting some delivered at Narrabri station now, for 2s. 6d. They, however, have yet to be taken on to the line.
1104. Are you aware that the estimate for half-round sleepers in connection with the Moree line was about 1s. 6d.? I never heard of that estimate; I do not know who made it.
1105. It was made by Mr. Deane? I think there is some mistake about that.
1106. These are dressed sleepers that they are getting for 2s. 6d.? No; half-round sleepers, dressed on the bottom side.
1107. You do not regard the prices as excessive for a cheap line of railway? No; I do not.
1108. Would you advocate the construction of lines, such as Mr. Shellshear described yesterday? I should not.
1109. More especially in our black-soil country? I should prefer to put ballast under the sleepers in any kind of country. I think that in wet weather the sleepers must work into the soft material. Apparently, in America, they put them so close together that they really make a corduroy road. Even then they must work into the soft mud.
1110. You would use ballast in preference to an additional number of sleepers? Yes; the additional number of sleepers referred to by Mr. Shellshear would cost £142 per mile, while the ballast would cost £308.
1111. So that the saving would not be very great? There would be a saving of about £150 a mile in first cost.
1112. But the cost of maintenance would be heavier? Much heavier, and I think stoppages would be much more frequent.
1113. While traction over a properly-formed road would be safer? Yes. I may say that we have altered the shape of our formation from the original drawings, in order to give it more drainage. We have always had a convex surface to the formation; but now we have sloped the sides more, so that the ballast may be even better drained.
1114. Do you think that the present rolling-stock could be run over a line costing £1,700 a mile, at a rate of 15 to 20 miles an hour? Yes, up to 20 miles an hour.
1115. Is the Temora line fenced in on both sides? Yes; but in the estimate for the Wyalong line very little fencing is allowed for. We should probably have to fence, in cases where the line went through private allotments and round the station yards.
- 1116.

1116. Are you aware that it is contemplated that the trains shall only run in daylight? I am not aware that the Commissioners will be bound down to running their trains in daylight; but I suppose that restriction would be advisable by the want of fencing. T. R. Firth,
Esq., M.I.C.E.
1117. Would there be any occasion for fencing, if the trains ran only in daylight? Of course, the want of fencing always increases the danger of running trains. 22 May, 1894.
1118. Would there be much danger if the trains only ran at the rate of 15 miles an hour? Perhaps not much danger; but still there would be some.
1119. More than there is with our street-trams? Of course, there is danger with them; but then we do not have cattle running about the streets here.
1120. You do not know anything about the Wyalong gold-field? No.
1121. You do not know whether it is desirable to construct a line? No.

PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS.
Railway from Temora to Wyalong.

APPENDIX.

A.

[To Evidence of H. Deane, Esq.]

ESTIMATED Cost of a Single Line of Railway 33 miles 46 chains in length, with 72 chains of Sidings—60-lb. rails.

Description.	Estimated cost.	Average per mile.
	£ s. d.	£
Earthworks	11,677 10 0	303
Box drains and timber bridges	5,563 7 6	144
Level crossings	1,000 0 0	26
Permanent way materials	34,578 9 0	896
Ballasting, at 3s. 6d.	£11,831 2 0	
Laying, at 1s. 6d.	5,091 18 0	
Sleepers, at 3s.	11,572 10 0	
	28,545 10 0	740
Station buildings ..	£4,440 0 0	
" works	3,750 0 0	
Sidings, 72 chains	1,580 0 0	
	9,770 0 0	253
Supervision and engineering expenses	4,821 17 8	125
Water supplies	3,000 0 0	77
Fencing	500 0 0	13
	£99,456 14 0	
Contingencies, 5 per cent.	4,972 16 8	129
	£104,429 10 8	
Average cost per mile	£2,707 3 8	.....

If the quotation for rails lately received can be made use of, the estimate can be reduced by about £150 per mile—£5,786 5 0

H.D., 9/4/94.

B.

[To Evidence of C. J. Saunders, Esq.]

RETURNS OF LAND ALIENATED BETWEEN COOTAMUNDRA AND TEMORA AND BETWEEN TEMORA AND WYALONG.

RETURN showing land alienated within 20 miles on each side of the Railway from Cootamundra to Temora since the date on which the construction of the Railway was authorised by Parliament, viz., 25 September, 1890, and the average price obtained.

	Area.	Average price per acre.	Total amount that may ultimately be realised.
		£ s. d.	£
Taken up under ordinary conditional purchase and conditional lease	34,500 acres	1 0 0	34,500
Taken up under conditional purchase within special areas	35,000 "	2 0 0	70,000
Country lands sold at auction	1,941 "	2 15 0	5,322
Town and suburban lands sold at auction	144 "	23 10 0	3,390
Total area alienated	71,585 acres	.....	£113,212

NOTE.—It has been assumed in this return that land conditionally leased will eventually be converted into conditional purchases at £1 per acre; this, however, is a privilege which may or may not be exercised by the conditional leaseholders. Payments for conditional purchases are made by instalments extending over a period of thirty-three years with interest payable on the outstanding balances.

C.J.S., 20 April, 1894.

RETURN showing land taken up between Temora and Wyalong since the passing of the Cootamundra to Temora Railway Act, viz., 25 September, 1890, within 20 miles on each side of the proposed route; and the average price obtained.

	Area.	Average price per acre.	Total amount that may ultimately be realised.
		£ s. d.	£ s. d.
Taken up under ordinary conditional purchase and conditional lease	About 83,839 acres	1 0 0	83,839 0 0
Taken up under conditional purchase within special areas	20,455 "	2 0 0	40,910 0 0
Country lands sold by auction	641 "	1 15 0	1,121 15 0
Town and suburban lands sold by auction	12 "	76 5 0	915 0 0
Total area alienated	104,947 acres	.....	£126,785 15 0

NOTE.—It has been assumed in this return that land conditionally leased will eventually be converted into conditional purchases at £1 per acre; this, however, is a privilege which may or may not be exercised by the conditional leaseholders. Payments for conditional purchases are made by instalments extending over a period of thirty-three years with interest payable on the outstanding balances.

C.J.S., 20 April, 1894.

In

In reply to a question from the Under Secretary for Lands as to whether the construction of the railway line from Cootamundra to Wagga Wagga has had the effect of stimulating settlement on the land in the vicinity of the line, Mr. William Orr, the district surveyor at Wagga Wagga, reports as follows:—"The construction of the Cootamundra-Temora railway had very powerful effect in stimulating settlement in the vicinity. Settlement commenced soon after line was mooted, and out of six hundred and fifty-six conditional purchases made during last four years at least five hundred were made owing to railway. The town, Temora, increased by about eleven hundred persons during same period, and Crown derived full benefit improved prices of land alienated." C.J.S., 20 April, 1894.

"Since April, 1890, the date on which the Public Works Committee recommended the construction of the Cootamundra to Temora railway, an area of about 87,000 acres, previously included in reserves within 20 miles on each side of the railway line, has been made available for selection, of which about 67,000 acres have been selected up to date. About 10,000 acres of this area were thrown open to ordinary selection at £1 per acre, and the residue in special areas at prices averaging about £2 per acre." C.J.S., 24 April, 1894.

C.

RAILWAY COMMISSIONERS' REPORT.

Proposed extension of the Cootamundra-Temora Branch Line to Wyalong.

Sir, Office of the Railway Commissioners of New South Wales, Sydney, 11 May, 1894.

In reply to your letter of the 29th March, I am directed by the Railway Commissioners to inform you, for the information of the Secretary for Public Works, that they have, at the earliest possible moment (having regard to other pressing matters of business), inspected the proposed extension from Temora to Wyalong.

It is estimated that the line should, if constructed as a pioneer line, as described by the Commissioners, in a paper dated the 10th October, 1892, and referred to in their Annual Report for the year ending June, 1894, be made, and all necessary accommodation provided, at a cost of £85,000.

The estimated annual cost would, under these circumstances, be:—

Interest on estimated cost of construction at 4 per cent.	£3,400
Estimated cost of working:—	
Traffic expenses	£800
Permanent-way expenses	2,000
Locomotive expenses	750
	£3,550
	£6,950

As regards the probable revenue, really nothing definite can be stated. In railway construction the proposal, from a traffic point of view, is unique, as the future entirely depends upon the permanency of the gold-field at Wyalong, which it is understood is the basis of the extension. There is country adapted for agricultural purposes around Wyalong, and *en route* thereto, but there is no present necessity for providing it with railway communication, while there are large areas suitable for the purpose contiguous to existing railway lines available.

The present population of Wyalong (about 5,000) cannot be accepted as any indication of the future. Everything there at the present may be said to be in an abnormal condition, as was the case at Peak Hill, where, it is understood, there were, when the field was first discovered, 12,000 people, the present population being 1,500; however, basing the estimate of traffic on the assumption that there will be a permanent settlement at Wyalong, to the extent that now exists at Temora—about 1,500—the value of the annual revenue will not exceed £2,500.

In view of the great uncertainty of the future of Wyalong, the Railway Commissioners recommend that the proposed extension of the Cootamundra-Temora branch line be deferred for six months, or until such time as there can be no reasonable doubt as to the future of the place.

I am to add that the Commissioners have ascertained that both passengers and goods are being carried at reasonable rates between Temora and Wyalong, and therefore no hardship would be consequent upon the postponement suggested.

I have, &c.,

H. McLACHLAN,

Secretary.

To the Under Secretary, Public Works Department.

Submitted.—J.B., 12/5/94. Forward to the Public Works Committee.—W.J.L., 12/5/94.

Extract from Annual Report of the Railway Commissioners for the year ending 30th June, 1891.

We would suggest for consideration in dealing with railway extensions in districts like Jerilderie and Deniliquin, Narrabri and Moree, Byrock and Brewarrina, where the country is practically level and the traffic will be very light, that lines to be designated "Pioneer Railways" be constructed at a cost of about £1,750 per mile, exclusive of bridges and land (which latter we hope can be dealt with as suggested on page 7), the trains to be worked at a speed of about 15 miles per hour, and during daylight only. Later on, when the traffic has developed, and will justify the class of line being raised, a capital vote to be granted as to make the line capable of carrying the traffic under the same conditions as on other parts of the railway.

NARROW-GAUGE RAILWAYS.

Office of the Railway Commissioners of N.S.W.,

To the Honorable the Minister for Railways.

Sydney, 10th October, 1892.

As the Public Works Committee, in dealing with the Eden-Bega Railway proposal, has been taking evidence with regard to the introduction of narrow-gauge lines into the Colony, and as the question is of such vital importance, we deem it our duty to place before the Government clearly our views upon the whole question of narrow-gauge lines.

If the question had to be settled afresh as to what the gauge for railways in Australia should be, the whole gauge question might, perhaps, be open for discussion; but now New South Wales has practically over 2,500 miles of the universal gauge open or under construction, the introduction of a break of gauge within ourselves could only be looked upon as a national calamity. The fact that the various colonies have departed from uniformity of gauge is already causing grave inconvenience.

We may mention that the question of the adoption of narrow-gauge lines in this Colony was thoroughly considered about 1870, and we think that a perusal of the evidence and facts produced at that time should satisfy everyone as to the wisdom of adhering to the decision then arrived at of not departing from the 4-ft. 8½-in. gauge.

There is a grave misapprehension in the minds of many people in regard to the comparative cost of narrow-gauge and standard-gauge lines, and this has been brought about by comparing the cost of narrow-gauge lines *versus* the ordinary gauge without consideration of the difference between the character of the lines constructed. If a narrow-gauge line and an ordinary-gauge line were made through the same district under the same conditions as to weight of rail, amount of ballast, &c., the difference in the cost per mile of the two systems would be much smaller than is generally thought. A Royal Commission, which reported upon Irish Public Works in the year 1888, and which was composed of some of the ablest men in the country, gave the difference between the relative cost of a 3-ft. and 5-ft. 3-in. gauge (the Irish gauge) estimated on a length of about 200 miles of railway, as about £500 per mile. The New South Wales gauge is the standard gauge, 4-ft 8½-in., and the difference in cost would, therefore, not be so considerable. Sir George R. Bruce, the President of the Institution of Civil Engineers in 1890, in a discussion before the Institution in that year, estimated the difference in connection with the metre (3-ft. 3-in.) and standard gauge (5-ft. 6-in.) of India at about £200 per mile, assuming, of course, that the construction was of a light character in each case.

But when we come to consider that the introduction of the narrow gauge would necessitate the creation of a new class of rolling stock, and would add very largely to the cost of transit by transshipping of goods, the saving thus effected would be practically extinguished by these additional costs and disadvantages. In the daily working of a narrow-gauge line

line there is a far heavier cost in wages per ton of traffic, as the men employed on the locomotive engines and the guards would have to be paid the same wages as on the ordinary-gauge road, although the load that could be hauled would be very much less, and at a lower speed, this latter point also causing a greater staff to be employed. The engines would also be of a smaller character, and the smaller wheels, and consequent greater friction, would lead to greater cost in repairs and consumption of fuel. Rolling stock to meet the maximum traffic of each branch would have to be provided, and a great proportion of this would probably be lying idle for the greater part of the year, as rolling stock could not be drafted from other parts of the system to meet the exceptional pressure of the busiest times, as the standard-gauge road would intervene. There would, therefore, be an unnecessarily large amount of rolling stock provided, which would be standing idle for a great part of the year, and this would in itself be a considerable set-off against any reduced cost in the original construction of the line.

With regard to the cost of transshipping, in the division of through rates in England where break of gauge intervened, an allowance of 20 miles was granted to the company that undertook the transferring of the traffic from the vehicles of the one gauge to the other. In England wages are low as compared with those given in this Colony; in fact, our wages are more than double those paid in England. Practically, therefore, we should be adding at least a cost equal to the conveyance of goods an additional 40 miles on all traffic so transhipped. As bearing on transshipping, nearly the whole of the traffic carried on any connecting narrow-gauge line would have to be transhipped, as there is very little purely local traffic on our country lines; nearly the whole of it is live stock, wool, or produce for Sydney or Newcastle, and merchandise sent in the reverse direction.

In a new country it is impossible to foresee the great changes which may come about even in twenty years; therefore it would be most disastrous to introduce sections of narrow-gauge lines. In England, the last of the exceptional gauge on the Great Western Line was swept away in May last, and in North America nearly the whole of the narrow-gauge lines have been abolished and converted to the standard gauge, until at this moment 94 per cent. of the lines in North America are of the same gauge as in this Colony.

That the country is right in insisting on cheaper railways where it is a question of "a railway or no railway," there is no doubt; but it would, in our opinion, be absolutely wrong to introduce a different gauge from the standard gauge. We do not think it is practicable or desirable to construct a subsidiary trunk line, or a line likely to convey any amount of traffic upon it, on cheaper principles than that carried out in connection with the Cobarr line, the cost of that line, including all construction charges, being about £3,300 per mile. There is no doubt, however, that for purely pastoral and level country, where the traffic would be exceedingly light, a line capable of carrying a light locomotive with the ordinary class of rolling stock, at a speed of about 15 miles per hour, in daylight only, could be constructed, exclusive of bridges, waterways, and station accommodation, which latter should be of the most simple nature, for about £1,750 per mile, money being voted later on, when the traffic had increased sufficiently to justify a better class of line, to raise the line to the ordinary standard. This could only be considered a "Pioneer Railway," and would be altogether different from a standard railway line even of light construction, such as that to Cobarr; it would be simply a line to carry traffic with reasonable speed at a lower rate of charge than it is now carried by road. The rates for such lines, on whatever scale fixed, would bring about a material saving to the users of it as compared with the rates now paid for carriage by road, and the scale of charges fixed should be such as to avoid any material loss to the country in connection therewith. Lines of this character would avoid the great disadvantage of break of gauge; they would cost scarcely anything more in the first instance than a narrow-gauge line, and the whole of the ordinary rolling stock, exclusive of engines which could be selected from the lightest types existing in the Service, could pass over them.

In summing up the whole question, we think we cannot do better than to quote the words of the Royal Commission on Irish Public Works in connection with the subject, viz. :-

"We are persuaded that if the outlay which is required on a narrow-gauge line to provide for extra rolling stock, repairing shops, transshipping sheds and cranes, be deducted from the additional first cost of constructing the line on the standard gauge, the excess will disappear or be very largely reduced, and if the annual expenses and permanent drawbacks, to which we have referred, be set against any additional interest on the balance, the result will show that there is no real saving in adopting the narrow-gauge for extensions in Ireland. The inconvenience of two gauges has already been felt, but in our opinion it will become more and more serious, and will greatly detract from the value of the extensions both from a public point of view and considered as the property of those who make them."

E. M. G. EDDY,
Chief Commissioner.
CHARLES OLIVER,
Commissioner.

D.

[To Evidence of John Harper, Esq.]

PROJECTED RAILWAY—TEMORA TO WYALONG.

New South Wales Government Railways, Goods Superintendent's Office, Sydney, 23 April, 1894.

Projected Railway—Temora to Wyalong. Length, 39 miles. Estimated cost, £104,000, including station buildings.

As directed by the Commissioners, I have traversed the course of the proposed line, and made such inquiries as were necessary as to probable traffic and accommodation.

I may incidentally remark that owing to the extremely unsettled opinion which prevails as to the permanency of the gold-field, and the abnormal influx of population which its discovery has introduced to the district, any estimate of traffic is extremely subject to future conditions of settlement, which at present can scarcely be gauged on anything like good grounds.

Although the proposal submitted to the Commissioners simply embraces the extension to Wyalong, and the facts and figures I have elicited are confined to the area of country likely to be served by this extension, it is, I understand, proposed to form part of a scheme of railway construction to Hillston on the Lachlan *via* Lake Cargellico, the distance being :-

	m.	c.
Temora to Wyalong	38	46
Wyalong to Cargellico	67	50
Cargellico to Hillston	54	0
Total	160	0

The more direct route, Temora to Hillston *via* Barmedman, is 150 miles. The only existing township between Temora and Wyalong is Barmedman (22 miles) which has a population of between 300 and 400 engaged in mining and agricultural pursuits in a small way. The country is almost exclusively devoted to pastoral pursuits.

In the Barmedman district 78,000 acres have been taken up by about forty selectors, but the total area which has been cropped only amounts to 1,235 acres, and this with uncertain results. The production last year was about 9,000 bushels of grain. The country is thickly timbered with worthless scrub, belah, box, mallee, with isolated clumps of pine and rather inferior ironbark, and is necessarily expensive to clear; so that although some of the soil is good, the uncertain rainfall and initial expenses of preparing the ground for the plough does not appear to promise very speedy agricultural settlement.

The following list of annual rentals paid by lessees of country through which the line passes will in some degree serve to illustrate its value for pastoral purposes :-

Upper Wyalong	1 $\frac{2}{3}$ d. per acre.
Upper Wyalong No. 2	1 $\frac{2}{3}$ d. "
Upper Wyalong No. 3	1 d. "
Buddigower	2 $\frac{1}{2}$ d. "
Mandamah	1 $\frac{2}{3}$ d. "

There is at present a population of about 5,000 or 6,000 on the gold-field, and it is claimed that it will continue to support a population of about 1,000 or 1,500 for some time to come. Up to the present the yield of gold has been under 1,000 ounces. Estimate

Estimate of Traffic.

As I have stated, the abnormal influx of population, accompanied by stores and building material, causes even an estimate of the traffic taken to Temora to be an uncertain guide. During the seven months ending March the sectional earnings of the Temora branch have amounted to £5,830; but it must be borne in mind that this period not only embraced the whole of the wheat and wool seasons, but also the unusual traffic of the gold-field.

The wool and wheat alone yielded nearly £11,000 of through earnings, and whilst the average number of passengers per month during October, November, December, and January booked to Temora was only 182, it reached 1,695 during March, and the goods tonnage also doubled itself.

For the purposes of my estimate of goods traffic, given under the most favourable circumstances, I propose to consider Wyalong as a town which will carry a population of 1,500 people (Temora is said to contain 1,800), and allot a proportionate goods and passenger traffic to that dealt with at the latter station during the normal condition of its trade, and taking into consideration its outlying natural business as a distributing centre.

The clips of wool as per list attached embrace all that it is likely to carry, and possibly more. I have extended the area likely to come in for between 40 and 50 miles from the proposed station site at Wyalong in a north-westerly direction, towards the Lachlan, in order that the proposed line may have the full advantage of any possible traffic.

Of course our competitive rates on the South-western will always tend to induce these clips in that direction, especially in view of local rates on the Temora branch. I have also allowed 250 trucks of stock, but as this is not a fattening country the estimate is more than liberal. The allowance of about thirteen passengers per day, based on a tri-weekly service is also ample. I have allowed for 2,000 tons of wheat.

The rates on goods are based on an extension of existing Temora rates, and assuming that the existing truck rate of £32 10s. will be increased proportionately.

Goods Traffic.

Inwards to Wyalong—		£	s.	d.
1,100 tons @ 2d. per ton per mile, 39 miles 6s. 6d. per ton.....		357	10	0
600 tons @ 4d per ton per mile, 39 miles 13s.....		390	0	0
Inwards to Barmedman—				
22 miles @ 2d., 3s. 8d. per ton for 288 tons		52	16	0
22 miles @ 4d., 7s. 4d. per ton for 192 tons		70	8	0
Outwards ex Wyalong—				
6,700 bales wool and sheep skins, 1,100 tons, 39 miles at 3d. per mile, 9s. 9d.		536	5	0
1,000 tons wheat @ 9d. per ton		37	10	0
Outwards ex Barmedman—				
3,600 bales wool, 600 tons, 22 miles @ 3d. per mile 5s. 6d. per ton		165	0	0
1,000 tons wheat @ 6d.		25	0	0

Coaching Traffic.

Mails	468	0	0
Passengers—			
1,500 2nd @ 4s. each	300	0	0
500 1st @ 5s. each.....	125	0	0
Parcels, &c.....	100	0	0
Live stock, 250 trucks, 11s.	137	10	0

£2,764 19 0

D 1.

LIST OF STATIONS THE WOOL OF WHICH WOULD PROBABLY BE TRUCKED ON PROPOSED WYALONG RAILWAY.

Name.	Estimated Bales Wool.	Remarks.	Name.	Estimated Bales Wool.	Remarks.
Barmedman	468	Trucked at Barmedman	North Yalgogren	259	Trucked at Wyalong
W. Mandamah	164	" "	Merringreen	153	" "
Upper Wyalong, No. 3 ...	249	" "	Youngara Creek	204	" "
" " No. 2	107	" "	Wollengough	234	" "
Kildary	292	Doubtful.	Ungarrie	884	" "
Buddigower	402	Trucked at Barmedman	Euglo	492	" "
Back Creek and Nobby's Lagoon	386	" "	Four Bob Camp	121	" "
West Bland Plains	463	" "	Bygalore	341	" "
The Bland	911	Doubtful.	Nariah	348	" "
Curraoorarama	239	" "	Malonga	276	" "
Upper Wyalong	294	Trucked at Wyalong.	Dundoo Hills	48	" "
Billabong	575	" "	Wargambega	72	" "
Lake Cowal	1,013	" "	Wooyeo	444	" "
Youngee Plains	135	" "	Uabba	288	" "
Bolygamy	140	" "	Total... ..		

E.

[To Evidence of H. McLachlan, Esq.]

PASSENGER TRAFFIC BETWEEN COOTAMUNDRA AND TEMORA.

Sir,

Government Railways of New South Wales, Secretary's Office, Sydney, 17 May, 1894.

During the course of my examination before the Committee yesterday, questions were asked with regard to the passenger traffic between Cootamundra and Temora on the days the railway was not open; and I submit hereunder copy of a wire from myself to local station-master, together with reply in regard to the same.

As bearing upon the exceptional traffic created by the Wyalong rush, I may point out that in January of the present year the total bookings of passengers from Sydney to Temora was 43, but in March the traffic was 708. This is again dropping down, as from the 1st to the 16th of the present month 141 passengers only have been booked.

I have, &c.,

H. McLACHLAN,

Secretary.

The Secretary, Parliamentary Standing Committee on Public Works, Sydney.

Telegram from Secretary to Station-master, Cootamundra.

REPRESENTED there is considerable coach traffic between Cootamundra and Temora on days train is not running; four regular coaches said to be running. Please wire facts at once.

Telegram from Station-master, Cootamundra, to Secretary.

Re coach traffic between Cootamundra and Temora,—No coach running, only double-seated buggy on days train does not run; no accommodation whatever for passengers as all room taken up by mails. Not the slightest foundation for the representations made.

F.

F.

[*To Evidence of E. F. Pittman, Esq., A.R.S.M.*]

REPORT BY MR. EDWARD F. PITTMAN, A.R.S.M., ON THE WYALONG GOLD-FIELD.

Geological Survey, New South Wales, Department of Mines and Agriculture, Sydney, 10 May, 1894.

Sir, I have made a geological examination of the Wyalong goldfield, and have the honour to hand you the following report:—

Situation.

The Wyalong goldfield is situated on the Wollongough Road, about 40 miles in a north-westerly direction from the terminus of the railway at Temora.

Topographical and Geological Features.

The country where the gold has been discovered consists of level plains covered with dense mallee scrub, and occasional belts of ironbark and box, while at long intervals are seen low ridges covered with cypress pine.

The surface of the plains consists to a depth of 2 feet or 3 feet of red and black clayey soils, of Pleistocene age, with ironstone pebbles and occasional subangular fragments of quartz.

The pine ridges in the vicinity of the Government township of Wyalong are formed of hard rocks, consisting of hornblende granite, diorite and felsite, with slates, sandstones, and quartzites, the three latter probably of Upper Silurian age. The hornblende granite, the diorite, and the felsite appear in the form of intrusive dykes, which have burst through, tilted, and transmuted the slates and sandstones, while the diorites and felsites have also intruded the granites. Some of the sedimentary rocks in the surveyed township are garnetiferous; and, generally speaking, it may be said that the rocks over this area show great evidence of metamorphism. About two miles west of the main camp there is a low ridge upon which there is an outcrop of solid micaceous granite. A large lode of quartz with much tourmaline occurs here, and contiguous to it is a narrow belt of pure mica schist. There is another outcrop of solid micaceous granite about $3\frac{1}{2}$ miles north of the Main Camp, near the north-west corner of conditional purchase portion 4, Gagie's selection. In the granitic rocks, hard, white, irregularly-shaped nodules of magnesite (carbonate of magnesia) are occasionally found.

Immediately underneath the two or three feet of Pleistocene clay, which form the surface of the plains, decomposed granitic rocks occur; and herein is one of the most interesting features of the gold-field, for whereas the rocks forming the pine ridges are all of a very hard nature, the decomposed granitic rocks underlying the plains are so soft that no explosives are necessary for mining operations, and all the work of excavation has hitherto been easily done with the pick and shovel. These decomposed rocks are of various shades of grey, yellow, brown, and red, and while some of them have evidently been micaceous granites, others are probably decomposed felsites and hornblende granites, the brown or red colour being caused by the peroxide of iron resulting from the decomposition of the hornblende. It is also probable that the felsites and hornblende granites are of later age than the micaceous granite.

The decomposition of these granitic rocks over such a large area, and to a very considerable depth, is a matter of much interest. It may probably have been caused by oft-recurring inundations of the plains during Pleistocene times. The flood-waters were probably never more than a foot or two in depth, so that the low ridges where the hard rocks still occur were not covered or affected, and as the surface of the granite on the plains became gradually softened by the action of the water and of the atmosphere, successive flood-waters carried down into it carbonic and other acids in solution until the decomposition reached a considerable depth.

Mode of Occurrence and Character of the Reefs.

The reefs are found underneath the Pleistocene deposit in the surface of the decomposed granitic rocks, where they generally appear as narrow threads, which widen out as they are followed down. Occasionally, however (as in Pettaford's claim, Stanley's Blow and others), they are found to be of considerable width at the surface, and as a rule they are then found to thin out, and eventually "make" or widen again as they descend. In fact, the reefs of this district are of the variety known as lenticular reefs, such as are commonly met with in granitic rocks. The quartz has been deposited in fissures in the granitic rocks by the percolation of waters carrying silica in solution. The lens-like form which the reefs have in section is due to the fact that when crystalline rocks such as granites are fractured, the resulting fissure follows a more or less curved, rather than a straight line, and as the fracture is accompanied by a movement downwards of one of the walls, the resulting fissure will consist, not of a space between two planes, but of a series of more or less regular lens-shaped spaces. The formation of these reefs can best be illustrated by laying a sheet of paper on the table and drawing the point of a sharp knife across it in an undulating line, so as to separate it into two portions with curved edges. If one of the curved edges be then moved along the other, several lenticular spaces will be formed.

One of the characteristics of the Wyalong reefs therefore is that they "thin out" and "make" again at intervals, and this variation in width may be expected as a recurring feature in their horizontal course, as well as in their downward extension.

The general course of the reefs is about north 20 degrees east, and as a rule they have an easterly dip. In and around the Main Camp there appear to be at least eight approximately parallel lines of reef following this course. A few others, however, have a north-easterly course, while a few others again, such as The Pioneer, The Dead Rabbit, Bolte's Reef (on Bolte's selection), Saunder's Reef, &c., strike about east 20 degrees north, and have a northerly dip.

Some of the reefs, notably those in Stanley's and Pettaford's claims, are of solid white quartz, containing a considerable amount of mispickel (arsenical iron pyrites), but as a rule they consist of more or less vesicular quartz, much stained with peroxide of iron, and easily broken down with a hammer and gad.

Many of the principal reefs, such as those in Neeld's prospecting claim (Mallee Bull line), Gorman's shaft and others, are characterised by a considerable amount of black oxide of manganese.

Mispickel is of common occurrence in most of the reefs, and in Neeld's prospecting shaft (Mallee Bull line) small quantities of galena and iron pyrites were also seen. Gold can be seen in a considerable number of the reefs. It is mostly of a fine character, and has the appearance of having been set free by the decomposition of pyrites. In several of the reefs, such as Bolte's, Conway's, &c., ironstone nodules occur. These nodules when broken in two are each seen to consist of a nucleus of mispickel (arsenical pyrites), surrounded by an envelope of limonite or brown iron ore (resulting from the decomposition of the mispickel), in which fine gold can be seen freely. In one instance the kernel of one of these ironstone nodules was found to consist of finely crystallised gypsum.

The greatest width observed on the field was in Neeld's prospecting shaft (Mallee Bull line) where, at a depth 35 feet, the reef has a thickness of 5 feet for a short distance, where a change of dip occurs. In Stanley's Blow the width of the reef at the bottom of the shaft is nearly 4 feet, and a similar width was observed in Gorman's reef at a depth of 90 feet. In the latter case, however, it was found that in a horizontal distance of about 10 feet the reef had pinched to a few inches, while on the other side of this point it was making again rapidly. Speaking generally, the reefs may be said to vary in width from an inch or two to several feet.

Inclusions of country rock, known amongst miners as "horses," are of common occurrence in these reefs, and "faults" or "heaves" are also frequently met with.

There is one instance on the field of a reef occurring in a belt of slate. The reef referred to is situated rather more than a mile in a southerly direction from the surveyed township. The belt of slate is here very narrow (about 20 feet wide), and is bounded by dykes of diorite. In the prospector's claim this reef was 15 inches wide, and showed good gold. In Doyle's claim, adjoining the prospector's, on the north it had a width of only 10 inches, at a depth of 5 feet from the surface, but appeared to be very rich; while in No. 2 north, Critten and Party, auriferous stone had also been struck, the reef appearing as a narrow thread and widening out as it descended.

This belt of slate or a parallel one extends through the surveyed township of Wyalong, and is surrounded by intrusive rocks, which have separated it from the main body of sedimentary rocks, the western boundary of which may be seen 4 or 5 miles to the eastward.

Outlying

Outlying Discoveries.

During my visit a rush occurred at a place called the Nine-mile, in the parish of Hiawatha, county of Gipps, about 9 miles in a north-east direction from the Main Camp at Wyalong. Several reefs were discovered here, but very little work has been done upon them. One of these reefs (Gagie's claim) showed good gold, but was cut off by a fault, and they are now driving with the object of recovering the lost or heaved portion of the reef. This reef was also characterised by the occurrence of the nodules of limonite, containing kernels of mispickel, which have already been described. The reefs at the Nine-mile rush occur close to the junction of the main body of sedimentary rocks (just referred to) with decomposed granitic rocks similar to these at Wyalong. Gagie's reef and several others are in the latter formation, but other reefs have also been found in the slate. A small patch of tertiary drift (probably pliocene) consisting of well-rounded pebbles of metamorphosed rocks, occurs on the side of a small ridge at the Nine-mile rush.

On Lange's selection, portion 11, parish of Wyalong, about 4 miles west of the Main Camp, a vertical reef having a width of 4 feet, has also been discovered in similar decomposed granitic rocks. I was informed by the owners, West and Party, that specimens showing gold had been taken down to Sydney from this reef, but on the occasion of my visit I could not see any. Comparatively little work has been done on this reef pending the granting of a permit to mine.

About 2 miles north-east of the surveyed township of Wyalong a reef (the Little Darling) has been discovered by Barker and Party. This was 6 inches wide just beneath the surface, and showed good prospects. Here again, and for a further distance of at least 2 miles eastward, the country consists of the same decomposed granitic rocks covered by pleistocene clays.

About 2 miles to the south of Wyalong on George Bolte's conditional lease, portion 21, parish of Wyalong, is another reef showing good gold. This reef, which is being worked in the prospecting claim by Bolte and Party, bears east 20 degrees north, and dips north 20 degrees west at an angle of about 44 degrees. It is nearly 3 feet wide in places, and prospects well. The formation in which it occurs is again the same decomposed granitic rocks.

Extent of Auriferous area already prospected.

It will thus be seen that the area in which auriferous reefs have already been proved to exist in the same soft rock extends for at least 7 miles in a north and south direction, by a similar distance east and west. Only the central portion of this area, or about 1 square mile, has been anything like systematically prospected; while the outlying discoveries, such as the Little Darling Reef on the extreme east, the Nine-mile Rush to the north-east, West and Party's reef on Lange's selection to the north-west, and Bolte's reef on portion 21 to the south, appear to point to the probability of many other auriferous reefs existing within the area bounded by them.

Difficulties in the way of Prospecting.

The outlying reefs just described must not be regarded as the ascertained boundaries of the gold-bearing area, but merely as the extreme limits to which prospecting had been carried at the time of my visit. The extremely level nature of the country and the occurrence of a continuous surface covering of pleistocene clays renders it a very difficult matter to define the limits of the auriferous area. In fact it is only by digging costeaning trenches or sinking shafts that the presence of reefs can be discovered, and hence it is that prospecting on this field becomes purely a matter of patient and careful work, there being little or no surface evidence to guide the miner.

Credit is undoubtedly due to the Neeld family for the manner in which they have developed the field. They came there without any experience in mining, and their success must be entirely attributed to their industry and determination. The method followed by them was to break and examine any fragment of quartz which they saw on the surface, and whenever they saw colours of gold in the stone they sank through the 2 feet or 3 feet of clay or soil. In most instances they succeeded in finding the reef immediately below, and in this manner they become the owners of some of the most promising reefs at Wyalong. Their example might be advantageously followed by many men whom I saw on the field.

Conditions of Mining.

It has already been stated that, with one exception, viz., where an auriferous reef occurs in slate country, the Wyalong reefs are found in decomposed granitic rocks, and these are so soft that no explosives are required for mining purposes.

In addition to being very easily excavated this decomposed rock appears to "hold" fairly well, or in other words, does not require a very great amount of support in the shape of timbering.

It is evident, therefore, that at present the reefs are being worked under the most favourable conditions for economical mining.

The question as to the limit in depth to which these decomposed rocks may be expected to extend is one of considerable interest, as it will influence in no small degree the future of the field. In Taylor's shaft, which at the time of my visit had reached the depth of 107 feet, no perceptible difference could be observed in the character of the country rock, nor had the reef shown any alterations worthy of note, beyond the variations in width, which have already been alluded to as characteristic of all the reefs on the field. Moreover, I was informed that in a shaft which had been sunk on a selection 4 or 5 miles distant from Wyalong a depth of 192 feet had been attained without striking water, and without getting below the limits of the decomposed granitic rocks. It may fairly be assumed, therefore, that the same favourable conditions as those under which the reefs are at present worked will obtain to a depth of about 200 feet. But, on the other hand, there can be little doubt that the decomposed rock will eventually give place to hard granite, and when this is reached the cost of excavation will be a very much more expensive matter. In addition to this, when the hard rock is reached, it is probable that water will be met with to some extent, and the gold will be found (partly, at any rate) in a more or less complex ore. Much of the gold showing at present has the appearance of having been set free by the decomposition of pyrites, and, therefore, it is fair to assume that below the water level roasting and chlorination, or some analogous process, will be required for its extraction from the sulphurous ores.

Possibility of Alluvial Deposits being Found.

Mention has already been made of the level nature of the country at Wyalong, and the covering up of its geological features by a uniform deposit of pleistocene clays. Owing to these conditions the discovery of old river valleys or alluvial deposits is rendered even more difficult than the discovery of new reefs. Judging by the shafts already sunk, the bed rock appears to come within a nearly uniform distance of the surface around the Main Camp, and there does not seem to be a very good prospect of alluvial drifts being discovered in the immediate vicinity. The field, however, is about 800 feet above sea level, and there is every reason, therefore, to expect that in tertiary times the drainage from this area found its way into deep valleys and deposited therein the gold which was derived from the denudation of the reefs. The search for these old valleys will probably require time and patience, but in the meanwhile it appears to me that one of the most likely looking outlets, viz., between the 16-mile tank and Doyle's claim (south of the surveyed township) has been scarcely prospected.

Source of the Gold.

There is, I think, little doubt that the hornblende rocks may be regarded as the immediate source of the gold at Wyalong. The hornblende granites, as well as the diorites, are probably of later age than the micaceous granites and sedimentary rocks, which they have burst through in the form of dykes. These eruptive rocks when in a molten condition probably carried a small proportion of gold from great depths, and it was subsequently leached from them and deposited in the reefs by the gradual percolation of thermal waters. The occurrence of such hornblende rocks in proximity to gold-bearing reefs is characteristic of New South Wales gold-fields.

Up to the present date 488 tons of stone from Wyalong have been crushed for a total yield of 869 oz. of smelted gold.

Summary.

In conclusion I may state that while the Wyalong reefs may all be expected to vary considerably in width, I can see no reason why they should not be persistent in depth. On the other hand at a depth of 200 feet or thereabouts the decomposed rocks in which the reefs are now being worked may be expected to give place to solid granite, and it is obvious that the cost of mining will then be materially increased, while the gold will probably be more difficult to extract.

In the meanwhile a considerable number of reefs have been proved to contain gold, which should certainly be payable while the present conditions of mining obtain, and there seems to be every reason to suppose that the auriferous area will be considerably extended.

Preparations were being made for the erection of three batteries at Wyalong when I left the field.

I have, &c.,

EDWARD F. PITTMAN, Assoc. R.S.M.,
Government Geologist.

The Under Secretary for Mines and Agriculture.

PARLIAMENTARY

PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS.

SECTIONAL COMMITTEE.

RAILWAY FROM TEMORA TO WYALONG.

REPORT.

THE Sectional Committee appointed on the 11th April, 1893, to inspect and take evidence and report on the proposed railway from Temora to Wyalong have the honor to report to the Parliamentary Standing Committee on Public Works:—

That the Committee, accompanied by Mr. Surveyor Kennedy of the Railway Construction Branch, left Sydney by train at 9 p.m. on Wednesday, 11th April, and arrived at Temora at 9.30 the following morning. From Temora they immediately continued their journey by special coach to Barmedman which was reached shortly before 3 p.m. The Committee opened their inquiry at the Court-house, Barmedman, at 7.30 on the same day, when the evidence of local witnesses, which was generally favourable to the construction of the proposed railway, was taken. The Committee left Barmedman for Wyalong early on Friday, 13th April, and arrived at the Government township at 1 p.m. During the afternoon they visited what is known locally as the Main Camp, where most of the present population is located, that place being in close proximity to the principal mines. They were afterwards driven through the outlying district and inspected a number of the more important claims. At 7.30 p.m. the Committee held a meeting at Spring's Hotel, Government township, when witnesses from Hillston and Cargellico were examined, adjourning at 9.30 p.m. until 10 a.m. the following day. The Committee accordingly met at Jacob & Co.'s store, Main Camp, at 10 a.m. on Saturday, the 13th April, and examined several working miners and a number of local and district residents. It seemed to be the general opinion of the witnesses that the mines would give employment for a considerable population for some time to come, and that if the land around Wyalong were thrown open for selection and the railway extended to Wyalong a great deal of land would be put under cultivation. The members of the Committee were driven to the New Rush where new discoveries had been made during the previous week, and they met again at 9.30 a.m. on Monday, the 15th April, at Spring's Hotel, and examined Mr. Plumb, who intends erecting crushing machinery upon the field, and Mr. Cassin, a prominent resident of Barmedman, at present engaged in mining operations at Wyalong. Both these witnesses were in favour of the proposed extension. At 2 p.m. the Committee commenced the return journey to Barmedman. They stayed the night at Barmedman, and left there early on Tuesday morning for Temora. A meeting was held at the Court-house, Temora, at 2.30 p.m., and the evidence of local Government officials showed that the settlement of the district was increasing and that it had received considerable help from the opening of the railway from Cootamundra.

Since the proposed line, after leaving Temora, follows the main road very closely almost all the way to Wyalong, the Committee were able to form a good idea of the nature of the country traversed by it, which presents no engineering difficulties. The country through which it passes is very slightly undulating, covered for the most part with box, and a close scrubby undergrowth with occasional belts of belar and pine until near Wyalong where the mallee is reached. There are also in places clumps of ironbark which if suitable for sleepers will be easily accessible. The soil is mostly a rich red loam, and, according to a report by the Agricultural Department upon a

sample submitted to them by Mr. Surveyor Kennedy, of high chemical and mechanical value. Most of the land which is not in the occupation of large pastoralists under lease has been taken up in blocks of from 2,560 to 7,680 acres, the latter being what are called family selections. Smaller holdings are the exception, because owing to the distance from market and the low price now obtained for wheat it has not been found profitable to cultivate much more ground than will produce sufficient for local requirements; the settlers have consequently turned their attention almost entirely to the raising of sheep. The road travelled by the Committee, although broken in places, is fairly good as far as Barmedman, but would not carry continuously heavy traffic in wet weather. The same may be said of the road between Barmedman and Wyalong, with the exception of about 2 miles, where it passes through gilgai country and is dangerous for wheel traffic. Owing to the sticky nature of the soil it is extremely heavy after rain. It is understood that the Roads and Bridges Department have put in hand the formation of corduroy roadway through the bad country, work which is rendered necessary by the ceaseless traffic to and from the gold-field.

Temora, the present terminus of the western Cootamundra branch railway, came into existence with the discovery of gold on Temora station, and is now supported by the settlement which has continued after the exhaustion of the alluvial deposits, and the failure of the few reefs which were regarded as likely to be payable. Since it was decided to extend the railway to Temora, there has apparently been a steady progress in the business of the town and the development of the surrounding district. Local statistics disclose the fact that during the last twelve months the population of the place has grown from 1,500 to 1,700, while the area under wheat has somewhat increased and is still increasing.

The first place of any importance that the proposed railway will serve is Barmedman, a small township 23 miles from Temora. Some years ago, the discovery of gold-bearing quartz there led to the expenditure of considerable sums upon mining operations in its immediate neighbourhood, and the erection of a crushing plant of 25 stampers, which is now used principally in crushing stone sent to it from Wyalong. The town, however, has until recently been supported chiefly by the surrounding stations and selections.

Wyalong, which will be the temporary terminus of the proposed extension, can hardly yet be called a town, although buildings are being speedily erected in all directions. It has at present a population of about 5,000. With regard to its prospects as a gold-field, the evidence of experienced miners confirms the opinion freely expressed by local residents and endorsed by the Chief Inspector of Mines, that even should no further discoveries be made, remunerative employment will be found for upwards of 1,500 people for a considerable time to come, though sufficient work has not yet been done to enable anyone to speak confidently as to the permanency or otherwise of the reefs. So far eight parallel reefs have been discovered, distributed over an area of about a mile in width by 5 miles in length. Further discoveries have also been made at a place called the New Rush, 7 miles to the north of Wyalong, though as the reefs there have not been opened up to any extent the character of the find remains doubtful. Rumoured discoveries have also been made in other directions. In the mines in which the reef has been followed to any depth the stone has been found to be of varying thickness, though in no case does the reef exceed 2 feet in width, the average being from 8 to 12 inches, and the crushings have produced from 2 oz. to more than 4 oz. a ton. About 200 tons have been carted to and crushed at Barmedman up to date, and have yielded 670 oz. of gold. It is expected that a similar quantity of stone which is now at Barmedman awaiting treatment will give even better results. The soil in and around Wyalong is similar to that which has already been described, and it is estimated that it could be cleared and put under cultivation at a cost of from 30s. to 40s. per acre. Much of it, if available, would be readily taken up, and it is thought that many of the miners would form homesteads, and thus even should Wyalong not prove to be a permanent gold-field, an industrious and desirable class of selectors are likely to become permanently settled near the recently surveyed township. It may be incidentally mentioned that the prices of provisions in the district are very moderate, so that the cost of living is less than in the metropolis.

Although

Although the discovery of gold, and the sudden rush of large numbers of people to Wyalong have brought about a great development of trade in the district, it would be premature under existing circumstances to construct a railway simply to serve Wyalong.

The Committee are of opinion that the proposed grade of 1 in 100 could be obtained with scarcely any cutting, that sleepers could be procured near the line at a minimum cost, and that the railway is one which could be very cheaply constructed. Having regard to these considerations and to the agricultural and pastoral capabilities of the country which the proposed railway will serve, the Committee feel justified in recommending its construction, if viewed as a section of a main line to the Lachlan at Hillston, *via* Cargellico; but they consider that the question of ultimate extension to the Lachlan should first be decided. Unless it be the settled policy of the country to extend the Cootamundra-Temora branch to the Lachlan, the Committee feel that their recent inquiry would not justify them in recommending the immediate adoption of the proposal now under consideration.

In connection with their suggestion that the proposed line should only be constructed as part of the main railway to the Lachlan, the Committee would point out that much of the traffic from the stations beyond the Lachlan now going to Whitton and Carrathool passes into Victoria, and does not appreciably swell the returns of the New South Wales railways.

In conclusion it may be added that witnesses whose holdings would be affected by the railway, readily assented to the equity of applying the betterment principle to the properties thereby benefited.

F. T. HUMPHERY,
Chairman.

Sydney, 24 April, 1894.

PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS.

MINUTES OF EVIDENCE.

PROPOSED RAILWAY FROM TEMORA TO WYALONG.

[TAKEN BEFORE THE SECTIONAL COMMITTEE.]

THURSDAY, 12 APRIL, 1894.

[The Sectional Committee met at the Court-house, Barmedman, at 7.30 p.m.]

Present:—

The Hon. FREDERICK THOMAS HUMPHERY (CHAIRMAN).

HENRY DAWSON, Esq.

WILLIAM CHANDOS WALL, Esq.

The Sectional Committee proceeded to consider the proposed Railway from Temora to Wyalong.

Henry Becroft Copeland, Esq., Crown Lands Agent and Clerk of Petty Sessions, sworn, and examined:—

1. *Chairman.*] What is your position in the public service? I am Crown Lands Agent and Clerk of Petty Sessions at Barmedman.
2. How long have you occupied that position? Since the 22nd of September, when the Lands Office was first opened here.
3. And previously to that? I was Land Agent at Taree for three years.
4. Then before last September you knew nothing of this district? No.
5. Can you tell us how much land is in occupation between Temora and Barmedman, and, say, within a radius of 10 miles of Temora? There is very little land open for selection between here and Temora. My district commences 6 miles this side of Temora.
6. Well, what settlement is there between Temora and Barmedman? With the exception of a few small blocks, the whole of the land within 5 or 6 miles of the proposed railway on each side is occupied.
7. Has it been taken up in large holdings? As a rule the holdings are large; there are some which have been taken up as special areas of 320 acres, but as a rule they are 2,560 acres.
8. Is there much settlement beyond Barmedman in the direction of Wyalong? No selection has taken place along the proposed line from Barmedman to Wyalong, except in one or two instances where people have taken up land within about three miles of the line.
9. Have you been over the selections between here and Temora? No.
10. Can you speak as to the settlement which has taken place here? No, only as it is shown on the map.
11. You do not know from your own observation whether the land is being used for agricultural or for pastoral purposes? I could not say, though the Police Stock and Crop Report for the Barmedman Division would give a fair idea as to how the land is being used in this portion of the district.
12. Will you be good enough to give us the figures that have been collected? The area of freehold and conditionally purchased land is 49,291 acres. That is, in the police district.
13. *Mr. Wall.*] Is the police district comprised in your land district? Yes.
14. *Chairman.*] Between what points? I cannot speak for certainty as to the area covered by the police district.
15. You cannot say how many miles it goes west and north of Barmedman? Not with certainty.
16. Will you tell us the boundaries of your district? It starts six miles from Temora, and extends south to the parish of Mimosa; then north by west through Buddigower, Drumston, Mildil, Bolygamy, Hiawatha, Wyalong, Mugga, Back Creek, and Binabulla; and is bounded on the east by the Bland Creek down as far as the parish of Moonbucka, and so south.
17. *Mr. Wall.*] How far east of Temora is Bland Creek? About thirty-two miles from the southern boundary of my district. The number of acres under wheat in the district is 1,235, producing 9,072 bushels. The total area held under conditional lease and pastoral lease is 201,315 acres.
18. *Chairman.*] Can you separate the pastoral leases from the conditional leases? There are five pastoral leases, containing 133,500 acres.
19. The rest of the land is conditionally leased? Yes.
20. What stock is raised on the conditionally leased land? I cannot say; but the totals are, 534 horses, 1,262 head of cattle, and 145,391 sheep.
21. You cannot say how many sheep are owned by the pastoral lessees? Yes, 92,565.
22. Can you give us similar information with regard to cattle and horses? Yes; there are 140 horses and 650 head of cattle on the pastoral leaseholds.
23. The balance would be on the selections? Yes.
24. How much land has been taken up in your district since you have been here? Eight conditional purchases, having an area of 1,658½ acres, and seven conditional leases, having an area of 3,796 acres, or altogether 5,454½ acres. The total amount of revenue collected between the 22nd of September, 1893, and the 31st March, 1894, amounts to £9,458 15s. 9d. According to the census returns, the number of sheep in the district is 194,466.

H. B.
Copeland,
Esq.

12 April, 1894.

- H. B. Copeland, Esq.
12 April, 1894.
25. Have you been over the country between Barmedman and Wyalong and Wyalong and Lake Cargellico? I have been from Barmedmen to Wyalong; but I only know the country along the road.
26. *Mr. Wall.*] The proposed railway passes right through your district? Yes.
27. What is the distance from your north-east boundary to the proposed line? About 30 miles.
28. And from your south-west boundary? About the same distance.
29. Can you furnish the Committee with any information as to the approximate quantity of land available in your district within 20 miles of the proposed line? Of course, all the leaseholds will be available next year.
30. Is the whole of the land marked white on the plan leasehold land? Yes.
31. Do you know whether preparations have been made in the district, since the construction of the railway to Temora, to bring land under cultivation? Only from hearsay.
32. What is the nature of the information which you have received? Several selectors have prepared land to grow wheat next year, and others are extending their area.
33. Have any large contracts for clearing been let in the district, to your knowledge? Not to my knowledge.
34. This is not essentially a wheat-growing district at present? No.
35. The area under cultivation does not represent the maximum contained in any one conditional purchase? No.
36. Can you tell the Committee how much of the resumed portion of the runs it represents? No; I cannot.
37. The area is not indicated on the map? No; of course the conditional purchases and conditional leases have been taken out of the resumed area.
38. You are not in a position to say what amount of land in your district, within 20 miles of the proposed line, is available for conditional purchase--that is, irrespective of the pastoral leaseholds? Comparatively speaking, very little. Since I have been here I have had several inquiries for land situated within the leasehold area.
39. Have you any information about a gold-mining reserve of 50,000 acres in the vicinity of Wyalong? Yes.
40. Before the land was reserved was it available for selection, or has it been taken out of the leasehold area? Within the parish of Wyalong the land was open for selection.
41. Then this reservation locks it up? Yes.
42. I suppose you are aware that the Lands Department propose to reserve a mile on each side of the proposed line from Temora to Wyalong? The land has been reserved between Temora and Barmedman.
43. But between Barmedman and Wyalong? There will be no need to make a reservation, because the railway will run through the leasehold area.
44. Does the amount of revenue which you have just given us represent the total annual payments, or are there any arrears due in respect of conditional purchases? Some of the payments are due and overdue; but, as a rule, the land has been paid for up to date.
45. *Mr. Dawson.*] In what position was the land at Wyalong before the reservation? The parish of Wyalong was open for selection.
46. That is 50,000 acres? Yes.
47. Has this been a favourable season for wheat here? I should think so; but I could not speak from my own knowledge, because I know nothing about it.
48. The season has been fairly wet. Do you know whether the crops were spoiled? I have not heard of such a thing.
49. Do you not think that an average of $7\frac{1}{2}$ bushels to the acre is very small? I could not say.
50. If this has been a fair season, and the average crop has been less than $7\frac{1}{2}$ bushels to the acre, it would not pay to sow wheat here? The rain only came after Christmas, when the wheat crop was finished.
51. The small yield to the acre may be the reason why there are only 1,235 acres under cultivation here? Well, that is all the land under cultivation. I should like to add, in regard to a previous answer, that the stock returns I quoted do not comprise Mimosa, West Mandemah, Kildare, Buddigower, Ariah, Bygo, Yalgogrin, Bolygamy, and ten or twelve other stations.

Mr. Joseph Charles Wentworth, storekeeper, Barmedman, sworn, and examined:—

- Mr. J. C. Wentworth.
12 April, 1894.
52. *Chairman.*] How long have you been in Barmedman? I have been about fifteen or sixteen years in the district, and it is going on for three years since I settled in the town.
53. And before you came here? I was living on Barmedman station.
54. *Mr. Wall.*] What has been regarded as the principal industry here? Pastoral pursuits, until within the last eight or nine years.
55. Are there many small holdings in the district? Yes; a good few.
56. Can you give us the number approximately? No; I cannot.
57. I suppose all the selected land is comprised in small pastoral holdings? They are hardly pastoral holdings.
58. Has much of the land in the district been alienated in the interest of persons holding large pastoral leases? I do not think so.
59. You think all the settlement has been *bonâ fide*? Yes; a great number of the selectors have been *bonâ fide*.
60. What is the average crop which the land here is capable of producing? With a fair season, I should think about 15 bushels to the acre, on the average. I do not think that that is an over-estimate.
61. How long have you known land in the district to be under cultivation? I know one paddock within 3 miles of this place which has been under cultivation for over twenty years.
62. What has been its average production? I could not tell you. As a rule the crop has been used for hay, though last year it was stripped.
63. What did it give last year? Of two paddocks at this particular place, the lowest yield was something like 15 bushels to the acre.
64. Can you give the Committee any idea of the average cost of clearing land for cultivation here? I let a contract for another person not long ago for 15s. an acre. It was certainly old ringbarked country; but the men had to clear it fit for the plough, grubbing out the stumps so that the plough could go 6 or 7 inches deep.

Mr. J. C.
Wentworth.

12 April, 1894.

65. How long must the timber have been rung before you can let a clearing contract at prices ranging up to £1 an acre? Three or four years, I should say.
66. What is the cost of ringbarking? On an average I should think 1s. an acre. That does not include cutting away the scrub and undergrowth.
67. For how much could you bring the land about here under cultivation, and what time would it take? Supposing you commenced to-day and finished four years hence, I should say that, taking the whole of the district within a radius of 10 miles, the work ought to be done for £2 an acre. That is taking in the mallee and everything. It might cost a little more.
68. Do you think the construction of the railway will bring much land under cultivation? I do. I have heard a great number of selectors say that if they had the means of getting their wheat to market they would put in a great deal more than they have put in hitherto. This year there has been a great deal more clearing.
69. What has been the effect of the construction of the Temora line;—have any large contracts for clearing been let in the vicinity of Temora or on the Sydney side of it? I do not know much about Temora; but I know that a large quantity of land in this district has been cleared within the last few months which would not have been cleared had not the railway been brought to Temora.
70. But according to the land agent here there are only about 1,200 acres under cultivation in the whole district? I heard what Mr. Copeland said; but I know that one man within 2 miles of the town has a 200-acre paddock, and another man has 100 acres, under cultivation. There is only a road between them.
71. What number of sheep will the land carry to the acre, taking an average? On the Barmedman run they have something like 30,000 sheep, besides cattle and horses, and I think they are only using about 40,000 acres. Then on Wyalong No. 3, I do not think they can have more than 20,000 acres, and they carry 20,000 sheep. I believe that this year they leased some land.
72. Do you regard this as fairly good pastoral country? There is no doubt about its being good, sound country.
73. If that is so, is it not more likely that the land will be held for pastoral purposes than that it will be brought under cultivation? No, I think it would be more profitable to bring it under cultivation. It is only the distance from railway communication that has prevented cultivation. For instance, up to last year at Barmedman station they only grew a bit of hay for themselves; but last year they had something like 70 acres under wheat, and that they stripped, and sent the wheat to be made into flour. This year they have cleared another 70 acres; but that would not have been done had the railway not been brought within 23 or 24 miles.
74. Are any other crops besides wheat grown in the district? Yes; oats have been grown, though wheat is the best crop here.
75. Is there much business connection between this place and Lake Cargellico? No.
76. There is a considerable pastoral population located between this place and Lake Cargellico? Yes.
77. And the construction of the proposed line would command the whole of the traffic? No doubt. There are a great many selectors to the north of Wyalong who would be prepared to go in largely for cultivation if they could be brought near a railway.
78. Having been for some time engaged in pastoral pursuits here, can you say what quantity of land in the resumed area was available for selection when the division of the runs took place? A large amount.
79. Has much of that land been selected since? Very nearly all of it, I think, immediately round here. Take Barmedman run, for instance.
80. Can you give the Committee any information as to the number of people that have been employed here in connection with the mines? There have not been a great number of late years; but a few years ago, when the Barmedman United Gold-mining Company was in full swing, a large number of men were employed here.
81. How long was that company in full swing? For three or four years, perhaps more.
82. I suppose you are aware that the company spent £16,000? I do not know what they spent here; but I believe it was a fair sum.
83. You cannot give the Committee any information as to how much they got out of the mines, or whether they were maintained by contributed capital brought here? No; but I know that a large amount of gold has been won here.
84. At the present time the mines are not working? They are working about 1½ miles out on the proposed line from Temora to Barmedman—I refer to the Princess Edith Company.
85. The mining population here is not sufficient to justify the construction of a railway? Not at the present time.
86. The railway must depend for traffic upon the development of other local resources? Barmedman, as regards mining, is not at its worst. Every man that could possibly get away has gone to Wyalong. The people working on the Hill when Wyalong broke out threw down their tools and went right away. One small crushing just before that time won 4 oz. to the ton.
87. I see, on referring to the evidence given in connection with the inquiry into the extension of the line to Temora, that the number of men then employed here was very limited? It would be, about then. During the last four or five years the number of men employed here has considerably diminished.
88. Why is that;—is it because of the inability of the mine-holder to cope with the water in the mines? Partly that, and partly because of the want of means.
89. You have some knowledge of the character of the reefs that have been worked here? Very little. I am no miner. The general report is that they have left good stone under the water.
90. *Chairman.*] Can you speak generally as to the progress of the district, confining yourself to the period subsequent to the recommendation of the Temora line in 1890? The district has improved since that.
91. In what respect? In an all-round manner. There is more population here, and we have had four or five very good seasons, which have helped us along.
92. Has more business been done in Barmedman? Yes.
93. Was that so before the Wyalong rush commenced? Yes.
94. Has the population increased? It must have done so, from the number of selectors who have come here during the time.
95. Do you know if the number of stock has increased? It must have done so.

- Mr. J. C. Wentworth.
12 April, 1894.
96. Do you know, as a matter of fact, that it has? Yes.
97. Are you familiar with the holdings of the various selectors in the district? With some of them.
98. Can you say what area of new land has been placed under cultivation since the railway was opened last year? Yes; I know of one paddock containing nearly 100 acres which was placed under cultivation.
99. I mean, speaking generally; I do not want you to specify any particular selection? I should say that immediately round about here, there were 400 or 500 acres of new land cultivated last year, if not more—that is, within 8 or 9 miles of Barmedman.
100. Have the settlers any difficulty in conserving water? None whatever, if they make tanks. I do not think there is better country in the Colony for holding water, if you make the tanks deep enough.
101. Do you know of any permanent water in the district? Yes.
102. Where? Three miles to the south-east you get springs. Certainly they are very small ones; but they are permanent. There is one spring at Trungley, 7 or 8 miles from here, which I do not think has ever been dry. I have known it for sixteen or seventeen years, and it has never been dry in that time.
103. When did the Fiery Cross Mining Company cease operations? I could not tell you.
104. Before you came here? Before I settled in the township.
105. Is the Hard-to-Find Mining Company still carrying on work? That is what we call the Princess Edith Company.
106. How many men are employed there? I do not know; but there must be over twenty men there, including those out in the bush getting firewood.
107. Mr. Wall.] Mostly, when people have selected in this district they have had to conserve water, have they not? Yes; unless they took up land on which tanks had been put by the run-holder, and for which they would have to pay compensation, which would come to the same thing.

Mr. Patrick McRoberts, pastoral lessee, Barmedman, sworn, and examined:—

- Mr. P. McRoberts.
12 April, 1894.
108. Chairman.] How long have you been in the district? Eight or nine months.
109. And previous to that? I was residing in Sydney.
110. Mr. Dawson.] Can you give us any idea as to how the proposed line, if constructed, is to earn enough to pay interest on its cost? I believe it will open up land suitable for cultivation, but I think it will mainly depend upon the Wyalong gold-field and the intermediate traffic. I think they will get gold right along here. That is my opinion from the inquiries I have made.
111. Have you any personal knowledge of gold mining? I have had a good deal to do with it, but I have not seen very much of it in this district. When last I was at Wyalong I looked more into the mining going on there than I have done since I have been in the district. I was there about five days.
112. I suppose all the wool in the district goes to Temora? Yes.
113. Do you not think that a station 25 miles from a railway is fairly well served by it? A station in such a position would have nothing to grumble at, and I have known people to send in wheat from a much greater distance and not grumble. Personally, I am served well enough; but I think the railway would be a good thing for the country. It would open up a lot of land.
114. You have heard that the average wheat production of the district is not quite $7\frac{1}{2}$ bushels to the acre? Yes; but last year the season was bad.
115. Mr. Wentworth said that on the average it would take about £2 per acre to clear this land fit for the plough? It all depends upon the timber upon it. If it has been rung for six or eight years, and the fire will run through it, you can get the work done for about 15s. an acre; but where the timber is green I should be sorry to take anything like that.
116. Could the clearing be done for £2 an acre? I do not think it could be done for £2 an acre.
117. Of course you know something about the price of wheat? Yes. This year it was very low. I think that was because of the over-production.
118. Then, even if you get a railway, how are you going to make a wheat crop pay? I could not answer that question.
119. I suppose you know something of the country between Temora and Cootamundra? Yes; I have seen a little of it.
120. I suppose that is equally good, if not better, land than the country between Temora and Wyalong? In my opinion, yes, for agricultural purposes.
121. Can you tell us why that land has not been put under cultivation for wheat? I think I can, though I am only giving you my experience. My opinion is that it is because they cannot get a price for wheat. It seems to me that every year wheat gets cheaper. Last year they wanted to buy wheat here for 2s. 7d. a bushel, landed in Cootamundra. I had no wheat to sell, but a traveller called at my place and told me that he was buying wheat at that price.
122. Do you think it at all probable that if the proposed line were constructed any land would be put under wheat? Yes.
123. How much land do you think would be put under wheat? I could not say. I have heard people speaking about putting more land under cultivation.
124. Can you give us an idea of the probable yield within a few hundred bushels? No; I could not give you an idea as to what it would be.
125. Do you think there would be enough wheat grown to pay anything like interest on the proposed line, supposing it were made for £2,000 a mile? Well, it would not depend upon the wheat alone, because there would be the station produce and all that.
126. How much wool would be sent from here? Last year I sent a little over 57 tons.
127. It costs 2d. a mile to send wool from Temora to Cootamundra? Something like that.
128. Where would you load your wool? At Barmedman.
129. Suppose you sent away 60 tons, the freight on that for 23 miles would be about 4s. per ton, or £12 altogether—that is all the railway would get out of you? But there would be the things that I should get up by it.
130. Would you bring up 60 tons? No, I should not; but you must remember that there are others who would send away more than I send.
131. The interest on the cost of the line would be £5,000 a year, so it would require 500 people to send 60 tons over the railway each way to meet that, without paying working expenses; do you think anything

thing like that could be done? Putting it in that way, I do not think it could; but of course if the Wyalong gold-field turns out to be permanent, there will be a great amount of traffic there.

Mr. P.
McRoberts.
12 April, 1894.

132. We want to get evidence as to whether it is going to be a permanent field or not? Well, if the Government do not make a railway they will have to put the road in repair. I do not know what it is like between here and Barmedman; but to put it in repair between here and Wyalong would cost more than half of what it would take to build a railway.

133. But a road would not produce revenue? No.

134. Of course the passenger traffic on the proposed line would be nothing at all, except so far as Wyalong was concerned? I cannot say what it would be like; but I do not think it would be very great.

135. I understand that you have to conserve water here? Yes.

136. That is easily done? Yes, you cannot beat this for holding country.

137. How many sheep have you here? About 22,000 I think.

138. And they cut a good fleece in sound country like this? Yes, very good.

139. Do you send many fat stock away? Yes, we send a good many.

140. If you had better means of communication with the metropolis, would you be likely to fatten and send away more? That would entirely depend upon what the market was like. If we had the Sydney market, the railway would not keep us from sending the stock.

141. Is the country between here and Wyalong similar to that between here and Temora? I have not been along the road to Temora. I go from Trungley to Temora.

142. But is there not a great similarity in all this country? Well, on the road from Trungley to Temora the country is very different. It is not so scrubby.

143. Is there much ironbark between here and Wyalong? Not that I know of, immediately on the line; but there is off it.

144. Good ironbark? What I saw was very fair. There is an ironbark ridge down here, I believe.

145. You have no idea as to what sleepers would cost, I suppose? No; but I think you could get them pretty reasonably.

146. It is proposed, instead of having square sleepers, to have half-round sleepers. They could be got much more cheaply? Yes, a great deal more cheaply than the sleepers we have been using hitherto.

147. Do you think an extension of the present line on through Wyalong to Cargellico and Hillston would constitute a main trunk line by which this portion of the country would be fairly well served? Yes; I do.

148. Have you any personal knowledge of the character of the country towards Hillston;—is it reputed to be good pastoral land? It is reputed to be very good pastoral land all the way pretty well. It is many years since I was on the Lachlan, but I know it to be good pastoral country.

149. If the line were constructed, do you think it would interfere with the renewal of the pastoral leases? I could not say.

150. Has there been any agitation in the district against the renewal of those leases? Not that I am aware of; but there may have been.

151. I suppose you are aware that it is a vexed question whether any renewals should take place in the western and central divisions? Yes, I am aware of that.

152. Can you say whether the small holdings carry more sheep proportionally than the large holdings? I do not think they do.

153. Do you think this country would be more profitably occupied if held in areas of 2,560 acres than if held in areas of 10,000 acres? I do not think the areas ought to be less than 2,560 acres, because in this part of the country, after a bit, most of the people will go in for pastoral pursuits.

154. If the Wyalong gold-field proves a success, do you think it will have the effect of settling an agricultural population along the proposed line? That I could not say.

155. The settlement of an agricultural population between Temora and Barmedman would depend upon the cancellation of the leases? It would depend a good deal upon that.

156. Of course people cannot select upon the leasehold area? Not at the present time.

157. And most of the land is held under lease? Yes.

158. Therefore the expansion of the agricultural industry will depend upon the non-renewal of the leases? Exactly; but then, again, there is any quantity of land to be improved at present under the same conditions—thousands of acres.

159. The land agent informs us that there is very little land available here for settlement? The land is taken up, but it is not cultivated.

160. The land is held under lease? Yes; but there is a lot of land that has been selected.

161. But the selection area could not be increased unless the leases were cancelled? Certainly; there is not much other land available.

162. Therefore, unless the leases were cancelled the population of the district could not increase very much? Not very much.

163. Do you think that the discoveries at Wyalong are likely to be of a permanent character? Well, I cannot make out the formation of the reefs. Most of them are jumbled up. There are two or three good claims there, but they have not run into a reef yet. They call them reefs, but I never saw reefs like them.

164. How many reputedly payable claims were there when you were at Wyalong? I believe there are eighty.

165. They have not all crushed, I believe? No.

166. Have you any knowledge of the present population of Wyalong? They compute it at from 7,000 to 8,000.

167. Are there many leaving the field? Yes; lately a good many have left for the new rush, 7 miles from Wyalong.

Mr. Herbert Bertram Christie, manager of Wyalong No. 2 Station, sworn, and examined:—

168. *Chairman.*] Who are the owners of the station managed by you? Mr. T. F. Knox is the owner.

169. What is the area of the run? About 19,000 acres of leasehold and about 5,000 acres in the resumed area.

170. Have you any freehold? Yes, about 1,200 acres.

171. How many sheep do you carry? At present we are carrying very few. It is not advisable to carry many with the number of people there are roaming about the paddocks.

Mr. H. B.
Christie.
12 April, 1894.

Mr. H. B.
Christie.
2 April, 1894.

172. What is the carrying capability of the station? Well, there is a great deal of mallee upon the run, but I think it will carry a sheep to 2 acres.
173. What distance are you from the nearest railway station? We are 37 miles from Temora.
174. Do you send your wool there? Yes.
175. Before the line was opened to Temora, where did you send it? To Cootamundra.
176. How long have you been in the district? Three years.
177. And before that where were you? In the Cobar district.
178. How long have you been engaged in pastoral pursuits? For nearly ten years.
179. Can you speak as to the progress of this district since you have been here? I think considerable progress has been made in the last three years.
180. In what respect? The country is far more settled now. The greater part of Wyalong No. 2 has been selected since I have been here.
181. Has there been any very considerable increase in the population? I think so. I think that most of the selections to the north-west of Wyalong have been taken up within the last four years.
182. Can you say that the settlers are in a fairly prosperous condition? I think a great number of them are.
183. Are they putting their land under cultivation, or are they combining pastoral with agricultural pursuits? They are combining pastoral with agricultural pursuits. A good number of them have started putting in crops.
184. Would you like to make a statement to the Committee showing reasons for the extension of the railway from Temora to Wyalong. No, though I am quite willing to answer any questions.
185. Have you considered in what way the railway could be made to pay working expenses? No, I have not. I do not know what the line would cost or what the working expenses would be.
186. Have you noticed whether the traffic between Temora and Barmedman has increased since the railway to Temora was opened? I live between Barmedman and Wyalong, so I could not say much about the country between Barmedman and Temora.
187. Do you know anything of the mining that has been carried on in this district during the past three years? No, I know nothing about mining.
188. *Mr. Wall.*] Can you tell me what was the extent of the resumed area of your run at the time of the division? I think about 19,000 acres.
189. Then about 14,000 acres has been selected there? From 12,000 to 13,000 acres have been selected there.
190. Can you give me any information as to the grazing capability at which your run was appraised? No; I have no knowledge on the subject.
191. Have you any knowledge of the country between Barmedman and Cargellico? I know the country from Barmedman to about 12 miles the other side of Wyalong—that is, I know portions of it.
192. Is it all regarded as good pastoral land? I think a lot of it is more suited for agriculture; but there is a large area of country on the Bland and Lake Cowal which would all be served by the railway, and which I suppose is second to none in Australia for pastoral purposes.
193. You cannot give us an idea of the value of the coaching traffic between Barmedman and Temora? No, I cannot.
194. *Mr. Dawson.*] If the railway were taken to Wyalong, would it get any of the Bland traffic? I think it would get a considerable amount of the traffic from there and from Lake Cowal.
195. I see that Forbes is 40 miles and Wyalong 22 miles from Lake Cowal? Yes.
196. How far would Wyalong be from the Bland country? Ten or fifteen miles.
197. Where does the wool from the Bland go to now? The greater portion of it would go to Young.
198. How far is that? Young is about 60 miles from Marsden.
199. How far would that be from Wyalong? About 40 miles. The Marsden traffic if it goes to Young now would then come to Wyalong.
200. Then the Wyalong railway, if constructed, would only take traffic from the Young line? You might say of any line that it was robbing some other line; but a railway to Wyalong would give much better communication to the district.
201. Where does the Lake Cargellico wool go to? I know that a great deal of that wool goes to Temora.
202. And would be carried by the proposed line? Yes.
203. A good deal of wool comes from Lake Cargellico and Lake Cowal? I cannot speak as to Lake Cowal; but a tremendous lot of wool comes from Lake Cargellico.
204. And that wool would come to Wyalong if the railway were taken there? Yes, all the wool from Bolygamy, about 20 miles from Wyalong, comes to Temora now, and would be carried by the proposed line.
205. Do you think the people here would be satisfied with a light line of railway over which trains could travel at a speed of from 10 to 15 miles an hour? I think they would be only too glad to get such a railway, if they could not get a faster line.
206. If a line costing from £2,500 to £3,000 a mile, upon which trains could run at the rate of 15 miles an hour, were constructed, would that serve the traffic for seven or eight years to come, allowing for a great increase in the wheat production? Not if the Wyalong gold-field went ahead. They would want faster trains then. What speed do they travel at on the Temora line?
207. About 22 miles an hour, I believe? I think that would be ample.
208. But suppose Wyalong turns out to be, what in mining parlance is termed, a duffer? At any rate the line would open up a large area of country.
209. And will cause a great increase in settlement? I think so.
210. If Wyalong turns out to be a good thing the line must pay at once, because the passenger and goods traffic will be very considerable, independent of the outlying country? Yes.
211. *Chairman.*] Is there much cultivation at present on the Bland and Lake Cowal? No. What I know of Bland country is not very suitable for agriculture. It is good fattening country.
212. What about Lake Cowal? Part of that is very good agricultural land.
213. But it is not at present under cultivation? No, not at present.
214. *Mr. Dawson.*] I suppose that is from want of a market? The distance from market is too great.
215. *Mr. Wall.*] If the proposed railway is constructed, do you think the holders of land within a certain zone would be willing to pay 75 per cent. of the cost? No, I do not.

216. You think they would object to pay such a tax? Yes, most strongly. I do not think they would be able to pay it. Mr. H. B. Christie.
217. The payments would extend over sixty years? Yes, but I do not see where these men could find the money to pay more than they are now paying. 12 April, 1894.
218. Do you think they would regard it as unreasonable to be charged freight, and at the same time to have to pay three-fourths of the cost of the line? Certainly. We must have carriage pretty low to make the production of wheat payable.
219. *Mr. Dawson.*] You think it right that the State should make a railway through your property and through mine, and that we should pay nothing in return? I do not think property here would be benefited anything like 75 per cent. by the construction of a railway.
220. Supposing it increased 50 per cent. in value, should not part of that increase be returned to the State? That might be fair; but at the same time the man who is employing labour to put in crops is benefiting the State more than the State is benefiting him. I think it is the duty of the State to build railways to open up the back country.

Mr. Denis Byrne, farmer, Barmedman, sworn, and examined:—

221. *Chairman.*] What is your occupation? I combine grazing with farming.
222. Did you obtain your land by conditional purchase? I bought it from a conditional purchaser.
223. How many acres have you? 2,560.
224. Where is your farm situated? About 7 miles west of Barmedman.
225. How many acres have you under cultivation? This year I am putting in about 140 acres.
226. Of wheat? Well, about 10 acres will be sown with oats.
227. How many acres had you under cultivation last year? Seventy-five.
228. And the year before? I have only been about three years in the district. The year before I had 4 acres of hay.
229. What was the result of last year's crop? We got about 15 bushels to the acre.
230. Where did you send it? To Temora.
231. What did you pay for carriage to Temora? About 4d. a bushel, which is about what it costs to send it from Temora to Sydney.
232. Then it costs you, in all, 8d. a bushel to send to Sydney? About that.
233. If the railway were constructed where would you send your wheat? To Barmedman.
234. What would be the cost of taking it to Barmedman? Very little; I suppose about 3d. a bag.
235. Do you keep sheep? Yes; I have about 2,800.
236. Do you send your wool to Temora? Yes.
237. Are you familiar with this district? Yes; I know it fairly well.
238. What portion of it are you familiar with? I know all the land to the west and south-west pretty well, together with the country on the Bland, and out north beyond Wyalong to Bolygamy.
239. That is on the way to Lake Cargellico? Yes; but it would be a few miles off the line.
240. What is the character of the land between here and Wyalong? The proposed line just about divides the agricultural from the pastoral country.
241. On which side of the line would the pastoral country be? To the east and north-east—the Bland country. I have gone 30 or 40 miles to the west, and four-fifths of that country is agricultural land of the best quality.
242. Similar to the land you possess? Yes.
243. Can you give any reason for the low average of production here? The past year was a very bad one for crops throughout the colony generally; but we had a higher average, or at least as good an average, within 15 miles of this place as in any other part of the colony.
244. You heard Mr. Copeland's evidence that 9,000 bushels of wheat were obtained from 1,200 acres of land—a little over 7 bushels to the acre? Yes.
245. But you say that you got 15 bushels to the acre? Yes; and I know of several paddocks that produced more, up to 18 bushels to the acre.
246. In that case a great deal of land must have yielded considerably less than 7 bushels to the acre? I think that that land lies nearer Temora. I know a great many of the farms there, and I do not think they produce anything.
247. Can you give any reason for the failure? There was no rain here until the middle of November.
248. Then why were you not similarly affected? It must have been because of the soil, and we happened to get rain in time to save the crop. In places like this the rain is very patchy. We may get rain, and 5 or 10 miles away there may be none. As it happened, we got a fair rainfall, not enough to benefit the crops as much as they might have been benefited, but sufficient to save them. That was between the 1st and 15th of November.
249. You attribute the success of your crops and the failure of other crops in the district to the partial rainfall? Yes. We had not anything like our average rainfall.
250. Can you say how the earnings of the proposed line would meet the working expenses, suppose the Wyalong gold-field were not permanent? I think the proposed line would encourage agriculture to a very much greater extent than its extension to Temora did. When I came here three years ago, a farmer named Clements had 80 acres under cultivation, and now he has 250.
251. Where is his farm? About 4 miles west of Barmedman.
252. Can you speak as to the effect of the opening of the Temora line upon the country within 10 miles of Temora and on each side of that line? Yes; I think the area under cultivation there has been very much increased.
253. Have you been over that portion of the district recently? Not over the country within 10 miles of Temora.
254. How long is it since you were in that part of the district? Eighteen months.
255. Then I suppose you were speaking from hearsay? Yes. I know that all the land under cultivation round here was put in since the railway was started. I had at first only 6 acres; but when I knew that the railway was coming I increased the area to my present acreage. A neighbour of mine who now has 150 acres had only 5 acres twelve months ago.
256. Are you interested in mining? Not at all. 257.

Mr.
D. Byrne.
12 April, 1894.

- Mr. D. Byrne.
12 April, 1894.
257. *Mr. Wall.*] Were the results you obtained last year sufficient to warrant you in continuing to increase your cultivation area? Yes, if I get means of transit.
- 257½. With the present prices, would you get more from the land by growing wheat than by using it for pastoral purposes? Yes.
258. I presume that a great deal of the wheat here has been grown for hay? Yes.
259. That would account for the small average yield per bushel? A great many of the crops have been cut for hay, and that would reduce the average yield. My experience of several paddocks is that they all yielded from 14 bushels upwards.
260. Have you been in the habit of sending in returns? Yes.
261. I suppose the custom is to state the area actually under wheat and the amount of grain produced, without taking into consideration the yield of hay? Yes.
262. How many sheep do you graze? Since I have been here I have been grazing from 2,800 to 3,000 sheep, together with horses and cattle.
263. Is it your intention to increase the area under cultivation? Yes; I have very good farming land, and it is my intention to go in principally for farming. This year a good deal of land would have been out under cultivation had not the rush broken out.
264. What, in your opinion, will be the cost of making this land fit for the plough? Well, I get my land cleared for £1 an acre.
265. How long had the timber been ringbarked? It was ringbarked by the lessee years ago, and a great deal of it is going back to its natural state.
266. What do you consider the average cost per acre of making land fit for cultivation? Taking green timber and all it would be from 30s. to £2 an acre. In favourable localities you could get it done for 15s. an acre.

FRIDAY, 13 APRIL, 1894.

[The Sectional Committee met at Spring's Hotel, Wyalong Township, at 7.30 p.m.]

Present:—

THE HON. FREDERICK THOMAS HUMPHERY (CHAIRMAN).

WILLIAM CHANDOS WALL, Esq.

HENRY DAWSON, Esq.

The Sectional Committee further considered the proposed Railway from Temora to Wyalong.

Mr. Thomas Pearce, solicitor, Hillston, sworn, and examined.

- Mr. T. Pearce.
13 April, 1894.
267. *Chairman.*] How long have you resided at Hillston? Nine and a half years.
- 267½. Do you desire to make a statement in connection with the proposed railway from Temora to Wyalong, which is likely to form part of an extension *via* Cargellico to Hillston? Yes. I think it is necessary to take the railway to Hillston; but I think it should go direct from Wyalong to Hillston?
268. Without touching at Cargellico? Yes. One reason I have for saying this is that on the Lachlan there is already a great quantity of purchased land, and the remaining Crown land there would naturally be selected, even if no railway is constructed, while the direct line to Hillston would pass through what I believe to be the best agricultural land in New South Wales. At any rate the last 60 miles on the Hillston side would pass through what is unquestionably the best agricultural land, taking into consideration its area, in the Colony. Of course you may get small pieces of land in other places, but taking the area into consideration, it is not to be surpassed.
269. What is the distance from Wyalong to Hillston? One hundred and thirty miles. The whole of the land is good, but on the last 60 miles from Hillston the land is exceedingly good.
270. Is it tolerably level? It is very level, except at one or two places, such as Mona Gap.
271. Do you not know that the country between here and Hillston on the direct route is very rough? No, it is very smooth.
272. Do you not know that a direct line would make a very considerable difference to the grade of the railway? I do not think it would.
273. Have you travelled the whole distance? Yes. Another reason why I think the line should go direct is that the Lachlan country is very heavily infested with rabbits, and the only thing that will destroy them is population. A direct line would open up the land for at least 40 or 50 miles on each side of it, and that land would be immediately taken up by selectors, who would destroy the rabbits and keep them in check. Suppose, however, the line went to Cargellico, and then down the river, it would be impossible for settlers to send grain or hay from the land of which I am speaking, and it would consequently become infested with rabbits, which would breed there and spread all over the Colony. I am not prepared with statistics in regard to Hillston, because I only knew, half an hour before I left, that I was to come here; but I am fairly acquainted with the neighbourhood from my long residence there, and from having been about it a good deal. Last year there were between 13,000 and 14,000 acres under cultivation in the immediate neighbourhood of Hillston, and this year I think the area will be 14,000 or 15,000 acres.
274. What is the crop? Wheat. If the farmers there could get a market for their produce there would be hundreds of thousands of acres under cultivation; but at present they have to send their grain between 70 and 80 miles to get to the nearest station.
275. Which is? Carrathool. The average rainfall for the last four or five years has been fully 15 inches, and the rain, as a rule, is seasonable for wheat, falling in April and May and early in the spring. That starts the wheat and ripens it.
276. Do you know the country between Cargellico and Wyalong? No, I have never been through it.
277. Do you know Cargellico? Yes.
278. Do the conditions exist there which you have described as existing at Hillston? I should say that there was better agricultural land close to Hillston than there is round Cargellico, but the Cargellico land is very good.
279. You said just now that the land between Cargellico and Hillston had been taken up? Not all of it; but a great quantity of it is freehold land.
280. What is it used for? Partly for grazing and partly for farming.

281.

Mr.
T. Pearce.
13 April, 1894.

281. Why do you consider the fact that the country there is already settled a reason for not giving the settlers along the banks of the Lachlan railway communication? I do not say that it is a reason, but I say that to do good to the greatest number the line should go direct. The land on the river has a water frontage and will always be taken up.
282. The people having settled there, should we not give them railway communication instead of denying it to them? Not in my opinion. I think a railway should be made to induce people to go out there.
283. And that those already settled there should be neglected? I do not say that they should be neglected. They would have communication to a certain extent, but in any case population would remain there, because of the river frontage, while the railway would spread population over new country.
284. How would the people at Cargellico be served by a direct line to Hillston;—what distance would they be from it? About 31 miles, which would not be too far, considering that they have a water frontage.
285. Do you think a direct line to Hillston would serve the Cargellico population? I think so, and a direct line would open up far more country.
286. Where is the wool sent to now from stations in the vicinity of Hillston? To Carrathool, which is 80 miles away. The selectors are on the south side of Hillston, and are, therefore, a little nearer to the railway.
287. Do you know the quantity of wool sent from Hillston to Carrathool? No, I am not prepared with the figures.
288. Can you give the Committee an idea of the probable amount of the Hillston traffic if the railway were taken there? A railway would draw all the wool from a considerable distance to the north of Hillston towards the Cobar line, and also from out Mossgeil way, where they have a great number of sheep.
289. Besides wool what else would be sent by the railway? Wheat and live stock. It is utterly impossible in time of drought for stations to get their live stock away under present conditions. The stock routes are always eaten bare, so that the stock would die on the road if travelled along them. With railway communication, however, stock could be sent to market or to the hills where there was feed.
290. When you speak of the hills where do you mean—beyond Cootamundra? Yes, and out Tumut way.
291. You think that the line would be used to transfer sheep in dry seasons? Yes.
292. Do you wish to give any other reasons in support of your suggestion? The strongest reason in favour of a direct line is that it would bring a great number of settlers on to what is very good land. If, however, the railway is not taken direct, the whole of that country will be over-run with rabbits. Wire netting will check the rabbits, but it will not destroy them.
293. If the line were taken *via* Cargellico, would Hillston be served? Hillston itself would be served.
294. Do you know what difference it would make in the length of the line to take it to Cargellico? I am informed that it would make a difference of 10 miles.
295. Do you think that that would make a material difference, when, by taking the line to Cargellico, it would serve two places instead of one? I think a direct line would serve the country better, and would save 10 miles. It would bring population into the district, and be the means of checking the rabbits. The land between the railway and the Lachlan would be filled with selectors, and they would stop the rabbits.
296. Are you not expressing somewhat parochial views;—are you not in favour of a direct line simply because you reside at Hillston? No; I wish to do good to the greatest number.
297. *Mr. Dawson.*] How often do you have droughts in this “best country in New South Wales”? We have not had a drought since 1888.
298. Are the droughts here very severe? The 1888 drought was very severe. There was a failure in the crops then.
299. Have you ever seen the Liverpool Plains? I know the country there.
300. Is this country better than that? From what I have heard, I should say that it was, for agriculture.
301. I mean generally? I would not say that, but there is a greater area of good country here.
302. But how much of the good country is taken up? I do not know exactly. The selectors hitherto have gone entirely for open country.
303. How many selectors are there on this land? Very few.
304. Would not the line you suggest go through any amount of land held by large stations? No; the leases will expire in 1895.
305. Then this land is held under lease? Yes.
306. Do you know if many selectors went on to the land when the leases were divided in 1889? Not very many. Some selectors took up land; but the want of a market for produce prevented others from doing so, and some of those who had taken up land threw it up and left the district.
307. Surely a man could make a living on 2,500 acres of really good country with sheep? The land on this side of the Lachlan is not so suitable for pastoral purposes as the land on the other side of the Lachlan; but it is more suitable for agriculture.
308. Is it lightly timbered? It is heavily timbered with box, myall, mallee, yarran, various sorts of scrub, and a great deal of pine.
309. Is it anything like the Carrathool country? No; it is different country altogether. I resided in Hay for nine or ten years, so that I know the Hay land as well as the Hillston land.
310. Do you not think it would be better, instead of taking the railway direct to Hillston, to serve the people who have already taken up land in the district? No; because if you take the line direct it will run between the selectors to the south and the selectors to the north, while if you take it to the Lachlan the selectors to the south will not be benefited by it, and it will not benefit an additional number of selectors on the north side of the Lachlan, because the land there is not suitable for selection nor available.
311. It is only the land on the Cargellico side that is suitable? Cargellico is on the southern side of the river.
312. Is there a fair amount of settlement between Lake Cargellico and Hillston? Not a great deal, though there is a fair number of selectors round Cargellico.
313. Much more than on the line you advocate? Yes; taking it all through. There are a number of selectors on the last 20 miles of the route which I recommend.
314. How far from the proposed railway? Some would be close to the railway and others would be 30 or 40 miles from it.

Mr.
T. Pearce.
13 April, 1894.

315. You are perfectly satisfied that the railway should be taken from Temora to Wyalong? Yes; that would be a move in the right direction. I do not know much about the country down here, but the line would be coming towards good agricultural land.
316. You are perfectly satisfied that there should be a railway to Wyalong? It is part of the line which should be constructed.
317. Would you sooner have the line taken direct from Temora to Hillston without touching at Barmedman or Wyalong? I could not say. I have travelled from Wyalong to Hillston, and I know that for about 30 or 40 miles out from Wyalong the land is not so suitable for agriculture as it is on the last part of the journey.
318. Although you advocate a direct route, you say that at present there is not much settlement along it, and that the land is not suitable for sheep? It is not so suitable as the land on the northern side of the river.
319. Fifteen inches of rain is not sufficient for wheat unless you happen to get it just at the time you state? I go by the crops that have been grown.
320. What is the average yield per acre? Fifteen bushels was the average last year. I may say that I have grown about 20 acres of wheat for the last three years, and I have never had less than two tons of hay to the acre. One year I had three tons.
321. Suppose the line were made, do you think a yield of 15 bushels to the acre would pay at the present price of wheat? Yes; if that were the average.
322. What price do you get for wheat? 2s. 6d. a bushel.
323. It brings 2s. 7d. a bushel in Sydney and 2s. 1d. a bushel in Melbourne? I believe they were getting something near 2s. 6d.
324. That means that you have to plough, sow, and harvest, for £1 17s. 6d. an acre, and that that would pay you? Yes, it does pay. I have spoken to a great number of selectors, and they are perfectly satisfied if they get 2s. 6d. a bushel. I know one man who has 1,500 acres under cultivation, and who carts his produce 50 or 60 miles to the railway station. He says that if he gets 2s. 6d. a bushel he is perfectly satisfied, and he has done very well so far. He had 1,000 acres under cultivation, last year, and he has put in 500 more this year.
325. What does it take to clear the land? Most of it is easy to clear; but some of it is mallee, and although that is good land, it is difficult to clear. I do not know the actual expense of clearing.
326. Can you get 2s. 6d. a bushel for wheat, this year? I believe that most of them realise something like 2s. 6d.
327. Where is that? By taking it to Carrathool, and sending it on to Sydney.
328. Where do they get the 2s. 6d.—in Sydney? Yes. They get something like that.
329. What would it be to them net? Well, they get a little more in Sydney.
330. It would cost 6d. a bushel to send wheat from Carrathool to Sydney, and I suppose from 4d. to 6d. a bushel to deliver it at Carrathool? But most of them cart it down themselves.
331. But if a man uses his own labour and horses, and gets 2s. 6d. a bushel for his wheat, that is not 2s. 6d. net. His own labour is worth something, and it seems to me, that at that price he would be about 3d. in debt when he had finished? No, they are perfectly satisfied if they can realise 2s. 6d. a bushel, in Sydney, and are able to make ends meet. If the railway went to Cargellico and then down to Hillston, the selectors to the south, who are quite as numerous as the Cargellico selectors, would be in the same position as the Cargellico settlers are now, and the land there would consequently soon become a rabbit warren.
332. Mr. Wall.] I suppose you recognise that this line has not been proposed simply for the purpose of serving Hillston? Perfectly.
333. There is a national object to be gained? Yes.
334. You state that construction of a direct line would open up more country on the banks of the Lachlan? No; it would open up all the country through which it passed. Land on the Lachlan will be taken up because of its water frontage, even if the people have to go some distance to get the railway.
335. Would not a line to Cargellico, and thence to Hillston, afford more facilities to settlers than a direct line? To some extent, I dare say there would be a little more land taken up if the line ran down the Lachlan; but I believe that the land there would be taken up whether the railway were constructed or not.
336. Railways are conducted on commercial lines, and unless there is some possibility of a line paying its expenses it is not the custom of the Government to construct it, nor is it probable that in such a case they will construct this one? That is exactly why I advocate a direct line. I think it would pay better than a line *via* Cargellico. As far as I am personally concerned, I do not mind which way the railway goes. I should like to see an extension from Parkes.
337. To what extent would you consider this back country served by railway communication? It is all according to the character of the country through which the railway passes, and depends upon whether the selectors use the line for agricultural or for pastoral purposes. I should say that if a farmer were within 40 or 50 miles of a railway station he would be near enough.
338. He would be fairly well served? He would be fairly well served.
339. Are you aware that a direct line would be running parallel to and not 35 miles from the Hay line, so that the people you desire to serve are already well served? The two lines may be only 35 miles apart at the commencement; but the distance between them broadens out to about 100 miles.
340. Would not the line proposed by the Department serve the country better? I do not think it would pay as well as the line which I suggested.
341. You advocate a line running almost parallel with the Hay line? It is 50 or 60 miles from the Hay line, pretty well all through.
342. Is the Cargellico land fair for agricultural settlement? Yes.
343. Is there any permanent water in the vicinity? Yes.
344. Is the rainfall there greater or smaller than the rainfall at Hillston? I am not able to answer that; but I should think it would be about the same.
345. What distance would the direct line be from the line proposed by the Department? Thirty-one miles, I think.
346. That would be at its furthest point? I suppose the average distance would be 15 or 16 miles.
347. The proposed Government line would be about midway between the Hay line and the Cobar line, while the line you suggest would only be from 30 to 60 miles from the Hay line? It would run through the best country. As far as Hillston itself is concerned the Parkes line would be the best.

348. You recognise that there is not much probability of a second line intersecting the tract of country between the Cobar line and the Hay line? I do not know about that.

349. Well, assuming that the Department intended to construct only one line to intersect that country, which line would you suggest? I think a direct line would benefit the greatest number of settlers, and therefore pay best, besides there is every prospect of gold being discovered in that country. There are a great number of people at Yalgogrin now; I was there this morning.

350. Do not men always take the best land available? Yes.

351. Then if the land in the neighbourhood of Lake Cargellico has all been taken up, does not that show that it is the best land? No, because selectors will not go out 30 or 40 miles by themselves where they have no chance of selling their produce.

352. Inferentially we must arrive at the conclusion that if they prefer to go 30 miles away from the railway, they regard the land on which they have settled as the best available? They have gone there because the district was already populated. People living there have written to their friends, and thus the land has been taken up in a block. If the proposed line is taken direct, however, thousands of acres of new land will be taken up.

353. Would a greater actual settlement be served by the Departmental proposal than by the line of which you speak? Yes; it would serve a few more.

354. What is the population of Hillston? Roughly speaking, about 1,000.

355. Is it incorporated? Yes.

356. Can you give us any information as to the value of ratable property? I think about £450 a year. That, of course, is exclusive of Government endowment.

357. And is based upon annual values? Yes.

358. Have you a Lands Office there? Yes.

359. Can you give us any information as to the amount of land selected in Hillston during last year? No; I cannot.

360. Is Lake Cargellico within the land district of Hillston? Yes.

361. So that any returns would show the settlement in the vicinity of Cargellico, as well as that in the vicinity of Hillston? Yes.

362. I suppose you recognise that at the present time the people of Hillston are better served by the railway than the people at Lake Cargellico? Yes; I think they are a little nearer the line. I think the Cargellico people go to Whitton.

363. If the proposed railway were constructed, would the freight and passenger traffic pay interest on its cost? I think so. I know that I would take a good many shares if we were allowed to make a light line ourselves.

364. I suppose you are aware that it is proposed to construct this line on what is known as the betterment principle? So I understand.

365. Do you think people would take up land in this vicinity if they thought they would have to pay a proportionate share of the cost of the line? I feel certain that they would be prepared to pay part of its cost; but I do not know how much they would be prepared to pay.

366. The payments would be spread over a very long period, and the tax would perhaps be very small;—do you think there would be any objection to the construction of this line on the betterment principle? I do not think so; I am certain that if the tax is not very heavy, the line will bring a tremendous population here, provided, of course, that the pastoral leases are thrown open when the railway is finished. I would not be in favour of throwing them open until the line is constructed.

367. How far would the country of which you have been speaking be from the Departmental line? The distance would vary from next to nothing to about 60 or 70 miles.

368. If the Department took the line through unsettled country, do you think people would take up land 20 miles from it to avoid coming under the provisions of a Betterment Act? No; because I believe that the increased facilities which they would have if they were nearer the railway would pay any betterment tax.

369. You cannot give any information as to the number of stock in the district of which you have been speaking? No; I cannot.

Mr. James George Carroll, land agent, Hillston, sworn, and examined:—

370. *Chairman.*] How long have you been in Hillston? Over seventeen years.

371. Have you a knowledge of the surrounding country, the extent of the pastoral holdings there, and the number of stock carried? I am not able to tell you the number of stock upon each station; but I know the country for nearly 100 miles round Hillston.

372. You desire to make a statement in connection with this proposal to take the railway from Temora to Wyalong, and perhaps extend it to the Lachlan? Yes, I have been sent here by the people of Hillston and the surrounding districts to advocate their right to a railway. I may tell you that they are not particular what way the railway comes, so long as it suits the greatest number of people, and is a line that will benefit the Colony generally.

373. Do you agree with Mr. Pearce that the line should go direct to Hillston instead of touching at Cargellico? I was not sent here to advocate any particular route.

374. From your knowledge of the country, and the extent of the existing settlement, and having regard to the traffic which would be created by a railway, do you think the Government proposal a better one than that suggested by Mr. Pearce? I must say that the proposed line would benefit more people.

375. Do you know Cargellico? Yes; my knowledge of that district is considerable, because I acted as land agent for them for a number of years.

376. Has the land been taken up in large areas? In 2,560-acre blocks.

377. How much land is under wheat there at the present time? There is not so much at Cargellico as at Hillston. They do not go in for farming so much there, they go in more for stock.

378. The selectors are using their land for grazing? Yes; they do not go in for agriculture so much.

379. Where do they send their produce at the present time? I think they consume it locally pretty well, and a little of it goes out back.

380. It does not go to Sydney? I do not think so. Of my own knowledge I do not know where they send the local produce.

Mr.
T. Pearce.

13 April, 1894.

Mr.
J. G. Carroll.

13 April, 1894.

- Mr. J. G. Carroll.
13 April, 1894.
381. Where does the wool go to? It goes to Whitton. The wool from the other side of Cargellico, out Mount Hope way, also goes there.
382. Do you know the country between Wyalong and Cargellico? I know the country from Cargellico to Merringreen.
383. About how many miles from Cargellico? About 50 miles. It is near the Humbug Creek.
384. Can you speak as to the settlement of that part of the country? There were not a great number of selectors along the road I came, but I understand that towards Galore, and in the Condobolin Land District, there are a number of selectors. I have only been connected with the Hillston District; but I understand that at Galore there are 60,000 acres under settlement.
385. Would they be served by a railway from Wyalong to Cargellico? Certainly.
386. Within what distance of the railway would they be, approximately? I do not know; but they would be served by it.
387. Can you say for what purpose the land to which you are referring could be profitably used? The land from Galore to Merringreen is all yarran country, and excellent country for sheep.
388. Is it suitable for agriculture? Yes, and it is well adapted for sheep.
389. It is better suited for pastoral than for agricultural use? It is suitable for either; but I consider that while there is land better adapted for agricultural purposes, it would be a pity to cut it up.
390. Can you speak as to the land round Lake Cargellico? Yes.
391. Is it superior to this land, or of similar character? It is red chocolate, and they have not much boree on it. The timber is pine, and growth of that kind.
392. Hillston, you say, is now partly served by Carrathool? Yes; it is 80 miles from Carrathool.
393. How many sheep are there within 50 miles of Hillston, the wool of which at present goes to Carrathool? Hillston would serve Mossgiel, which is 60 miles away from it, Ivanhoe, which is 35 from Mossgiel, Whealbah, which is 22 miles south-west of Hillston, and Cooble Station, and all stations between Ivanhoe and Hillston.
394. How many sheep would be shorn in that district? I am not able to say how many sheep they shear; but I should say that they shear over 100,000 sheep at Trida Station, which is considered a very large shed. I cannot say what they are carrying now, but they have carried 100,000 sheep. Mossgiel would carry 150,000 sheep, Willandra, to my knowledge, has shorn over 200,000 sheep, besides running a number of horses and cattle, though it is now being subdivided.
395. Cattle and horses would not help the railway to any extent? Cattle would, because they send fat cattle to Melbourne. I should say that Bundarra Station runs 100,000 sheep, and Merungle about 80,000.
396. Are those the principal stations which would be served by the line? Yes, and there are others. Cowl Cowl, which is on this side of the river, has shorn 150,000 sheep. I have not mentioned half the stations which would use the railway.
397. Are we to understand that the stations you have mentioned would be directly served by the extension of the railway to Hillston? Yes.
398. And the wool would be sent from Hillston to Sydney? Yes; the stations I have mentioned send their wool on to the Hay line, while out beyond they go to Balranald.
399. Would there be an increase of revenue to the railway if the wool was sent from Hillston to Sydney, instead of coming as it does now? Yes; because when they go to Carrathool they can choose between sending by train to Sydney or by steamer to Victoria. Wool passing through Hay goes mostly to Victoria.
400. There would be an increase in railway revenue if the wool went to Hillston? Yes; if it came to Hillston it would have to go on to Sydney, whereas now the greater part of it goes to Victoria.
401. Do you wish to give any other reasons in support of this line? I consider that the land between Hillston and Ivanhoe is equal to any of the land in the Western Division. It is certainly the best pastoral land in that division, and their sheep have for years topped the Melbourne market. Sheep from there have brought as much as 17s. 6d. in the olden times. The wool, too, fetches a good price, coming as it does from very superior land. Portions of that country, too, are well adapted for cultivation. A Mr. Thomas, who has lately taken up land near Hillston, told me that he had travelled a great deal through the Colony, and that he considered that, with the exception of the land round Narrandera, it was the best wheat-growing country he had seen. He had seen Mildura, Wentworth, and those places, having travelled for a land syndicate, but he settled near Hillston, considering that land to be the best he could obtain.
402. How many coaches are there running between Hillston and Carrathool? There are two a week to Carrathool, one to Hay, and two to Booligal.
403. And to Cargellico? There are two a week each way, and a weekly mail.
404. How many teams are there on the road? A great number. One storekeeper stated to the Commissioner that he got up 600 tons of goods in the year.
405. I am speaking of the average number of teams on the road between Carrathool and Hillston? There are a great many; but I could not say how many.
406. Mr. Wall.] How long has your railway league been established? We have been advocating a railway for a number of years.
407. Were any representations made to the Minister prior to the opening of the Wyalong gold-field? There was no deputation, but we have had plenty of communications with the Minister.
408. Can you tell the Committee where the boundary of the Western and Central Divisions would be intersected by the proposed line? The Lachlan is the boundary between the Western and Central Divisions.
409. Then the proposed line would not go into the Western Division at all, though it would serve a large portion of it? Yes; it would serve Euabalong, which is about 15 miles from Cargellico.
410. Would it not serve Coan Downs and the country to the north? Yes.
411. Can you give us an idea of the number of adult settlers that would be served by the construction of this line, taking the population of Hillston, Lake Cargellico, and the intervening country;—what would be the probable value of the passenger traffic on the line? I cannot say. Most people travel in their own conveyances now.
412. Can you give us any idea of the number of people who would be likely to avail themselves of the railway in order to get to Sydney? At Mossgiel there are about 400 people, and about 1,000 at Hillston and just immediately around it.
413. Is that the adult population? No.

414. Can you give us an approximate idea of the number of settlers that would be served by the proposed line? The line would serve every settler already in the district; but I cannot tell you how many there are. I may say, however, that when the land was thrown open by the 1884 Act, the largest area of land in the Colony but one, was taken up near Hillston.
415. Can you give us any idea as to the number of people between Hillston and Wyalong, or Cargellico and Hillston, who would be served by the line? I could not tell you how many would be served by it.
416. Has settlement in the vicinity of Cargellico and along the proposed line increased during the last few years? Very little; it has gone off.
417. As a rule, has the land been taken up in the *bonâ fide* interests of those who selected it, or have many of the selectors sold it to the large pastoralists? Latterly not much land has changed hands in that way. I think there are very few selections which are not genuine.
418. Has there been any petition by persons requiring land for settlement against the renewal of the pastoral leases? The feeling has been against their renewal. The people are waiting for a new Land Act which they hope will be more liberal than the last. That is why there has not been much settlement.
419. Do you think that the division of the holdings would have a tendency not only to increase population, but to increase the carrying capacity of the land? Subdivision would certainly increase the carrying capacity of the land.
420. You think that, proportionately, the land held by selectors in the vicinity of Hillston carries more stock than that held by pastoral lessces? Yes. I know one selector with 640 acres of land who runs 800 sheep, and they are now so fat that he can hardly get a poor one to kill. His land has carried over a sheep to the acre because of the subdivision.
421. I suppose you know the old soldier's motto, "Guns overcharged recoil the most"? Well, I know he has been there over twenty years, and is likely to remain there.
422. Can you give us any idea as to the returns received in a year by the Lands Office at Hillston? They have been very good indeed until lately; but there has been a falling off this year.
423. This year has been worse than other years? Yes; very little land will be taken up until a new Act comes into force.
424. You think that the construction of a railway would have a tendency to increase settlement? I am sure of it. If the line is not constructed at an early date a great number of people will desert the back country.
425. *Mr. Dawson.*] If the leaseholds are thrown open to selectors, is there not a great likelihood of the pastoralists securing the whole of them? It would depend upon the conditions under which they were thrown open.
426. Under conditions under which you and I or anyone else could take them up? Not if you had continuous residence, and one man one selection, insisting upon a certain amount of cultivation.
427. Would you hamper selection with all those conditions, and then say that poor people should take up the land? Certainly. If poor people want land, they will put a house upon it and cultivate it.
428. But poor people cannot do all that you refer to? That is how they get a living.
429. Is the man who owns the 800 sheep the only one in the district who has got such sheep? No.
430. More than a sheep to the acre is the general thing in that district? No. The man to whom I was referring has a river frontage. My experience is that sheep in small lots get quiet, and do not run about and lose their condition.
431. Is it the feeling of the people in this district and round about Hillston that all the land should be thrown open? The majority of the people whom I meet are in favour of no renewal of the leases until the public get the first cut at the land.
432. I agree with you that the public should have the land, but do you not think that the pastoralists will get their share along with the others? If you pass workable and liberal Land Acts and construct a railway, you will have any number of prosperous and successful people in the back country. I know people who have used the plough there most successfully, small as is the price of wheat.
433. If the country is as you have described it, and will carry 800 sheep to 640 acres, could they not all live by fattening sheep? The river frontages are so good that a small area of such land is sufficient for a man, but back in the timbered country it takes three or four and perhaps even ten acres to carry a sheep. That land could be profitably cultivated.
434. Would you compel a man to take up land such as that and cultivate it? Yes; because it will grow better wheat with less rainfall than the land nearer the river. Further away the land is sandy and loamy.
435. It must be wretchedly poor land if it takes five acres to feed a sheep? Well, the resumed area of the Cowl Cowl run, which they reckoned to carry a sheep to ten acres was abandoned, but now a man has selected there and cleared the land, and has got a crop of thirty-two bushels of wheat to the acre. This year he got a good crop of wheat and twenty-four bushels of oats to the acre. That land is not suitable for stock but it is suitable for cultivation, and there are hundreds of thousands of acres of such land about Hillston.
436. Is it open? Yes.
437. Then why is it not taken up? Because there is no railway by which to send away produce. I have heard men say, as Mr. Pearce has told you, that they would be satisfied with 2s. 6d. a bushel. I was there before any wheat was grown in the district, and I know that the 1888 crop has been the only one to completely fail. Wheat this year has brought from 2s. 3d. to 2s. 5d. at the flour mill in Hillston, and at Carrathool they get 2s. 7d. for it delivered at the railway station, or at least that is what I have been told.
438. You say that it is really good wheat-growing land, and that if the railway is made, hundreds of thousands of acres will be put under wheat? I consider that where there is one acre now, there would be ten if the railway were made.
439. How many acres are there under cultivation now? They are all taking in fresh land every year. One man who cultivated about 800 acres last year is putting in 1,500 acres this year.
440. Can you tell us what area is under cultivation now? About 12,000 acres this year.
441. Then there would be about 120,000 acres under cultivation if the railway were made? Yes.
442. This land would be held by smaller men? Yes; in blocks of from 1,400 to 2,500 acres chiefly.
443. Is anything else likely to be grown;—how does barley grow there? Barley will grow, but it has not been cultivated there. Oats were put in for the first time last year, but that was a particularly dry year, and I am certain that land which would give thirty-five bushels of wheat last year would give over forty

Mr.
J. G. Carroll.
13 April, 1894.

- Mr. J. G. Carroll.
18 April, 1894.
- forty bushels in a good year. Potatoes and onions grow there, and I think the onions on the Lachlan are the finest in the Colony. Fruit, too, does remarkably well, and the grapes and peaches are equal to anything in the Colony. They are a month earlier than the Albury fruit.
444. Is there any wine-making there? No. There is land on the Lachlan which is suited for vine growing and for all sorts of fruit.
445. Except apples and cherries? Apples grow well at Booligal, and cherries grow well at Hillston, and I think the peaches are equal to anything in Australia.
446. But you do not get cherries and peaches together? I have seen good apples to come from Booligal; but the peaches are equal to anything I have tasted in the best shops in Sydney. The country there is capable of producing anything, and is free from disease. There is no disease among the sheep, cattle, or horses. Now and then there is a little complaint about a horse, but we have neither fluke nor pleura.
447. *Chairman.*] Mr. Pearce expressed the opinion that the railway would be serviceable for the removal of stock in times of drought, is that your opinion? Yes; the stock routes are completely eaten away; they are let and sub-let, and it is really impossible in the summer months to get stock to market. I know men in the back country who, if they move their fat stock, can only get them to market as stores. If there were a railway, however, they could send them to other places where there was grass, or take them direct to market, and get full value for them.
448. *Mr Wall.*] Do you not think it would have materially assisted you if you could have submitted an estimate of the probable inward and outward tonnage on the proposed line? Certainly; but I did not get sufficient notice, and I have been travelling night and day to meet the Committee. Had we got more notice, instead of there being two witnesses from Hillston, there would have been ten.
449. But in making previous representations do you not think that that would have assisted you? The Department have got it all in print. Mr. Gilliat was down there and helped in the inquiry.
450. Have any recommendations been made in connection with the deputations which have waited on the Minister as to the produce of the district? I think so; but I would not be quite sure. We have been working hard in connection with the matter for some time.
451. Have you any statistics at your disposal which you could forward to the Central Committee, in Sydney, giving an approximate estimate of the probable tonnage which would be carried by the proposed line? Yes, we could give that information.

Mr. John Brett, selector, Molonglo, sworn, and examined:—

- Mr. J. Brett.
18 April, 1894.
452. *Chairman.*] How many miles are you from Wyalong? About 30.
453. In what direction? Towards Cargellico.
454. Near the route of the proposed railway? Not far off the direct line.
455. How many acres do you farm? I have a family selection—three selections.
456. How many acres have you altogether? A little over 7,000 acres.
457. How many acres have you under cultivation? I only grow enough for my own use.
458. How much is that? I have about 10 acres under cultivation.
459. How do you use the rest of the land? For grazing purposes; but there is very little grass on it until it has been improved.
460. How many sheep have you? About 4,000.
461. Where do you send your wool? To Sydney.
462. By what railway? From Temora.
463. What do you pay for carriage? It is pretty expensive to Temora.
464. Can you say how much a bale? It used to cost £6 a ton to Coolamon; but we get it taken to Temora for about £4 a ton.
465. How many bales do you send away? Sixty or seventy.
466. That would be 10 or 11 tons? Yes.
467. You would be served by an extension of the line *via* Wyalong to Cargellico? It would be almost immaterial to me which line was made. I consider that this is the very cream of the country.
468. How long have you resided on your selection? About four years.
469. Why have you not put more land under cultivation? Because the produce would not pay for carting away.
470. Did you hear Mr. Pearce's evidence? Yes.
471. It would not pay you to grow wheat? No. I should never have selected, but for the expectation of a national line some day.
472. What is the character of your land? Magnificent country. It wants improving; but it is all limestone country.
473. In what way does it want improving—by manuring? By clearing. The land itself is good. It could not be better land.
474. Is the rainfall sufficient? The rainfall is quite sufficient, but for an exceptional year. The country does not require so much rain as poorer country.
475. Is there much settlement round you? Yes; there is a large amount of settlement.
476. Is the land held in large areas like yours? Yes; it is principally held in large selections, because small selections would not do much good there.
477. Is there much land under cultivation? Not much. It is only cultivated for the use of the selectors.
478. You are nearly all sheep farmers out there? Yes; we combine that with a little agriculture.
479. But the extension of the railway will enable you to put the land you are now using for grazing under cultivation? Yes, most of that country will be put under agriculture.
480. It could be profitably used for agriculture if you had better railway facilities? Yes.
481. *Mr. Dawson.*] You came from Victoria? Yes.
482. From what part? From Warrnambool.
483. That is particularly good country? Yes.
484. Then, I take it, you know what you are talking about? Yes; I went all round New South Wales before I settled down, I have been in New England and at Tamworth.
485. You know Tamworth? Yes.
486. Is your land as good as that on the Peel River? Fully as good.
487. And you say that the line proposed by the Government goes through the cream of that country? I have not the slightest doubt of it.

Mr. J. Brett.
13 April, 1894.

488. A good deal of land would be taken up there if the road was good? It would be eventually taken up if there were a railway.
489. You want a market for your produce? Yes.
490. If the railway is taken from Wyalong to Cargellico and then on to Hillston, the land through which it passes will be used for agriculture instead of having sheep running over it to the end of time? It will all be taken up. There are 75,000 acres in a gold reserve there, which are as good as anything between here and Sydney.
491. As a practical man you have no hesitation in making that statement? Not the slightest.
492. If this land is settled upon and taken up in small areas the settlers will be able to run sheep upon it as well as use it for agriculture? It will, when improved, carry a sheep to the acre.
493. And no doubt people will get store sheep and fatten them after the crops are off? Yes. The land is so far from market that agriculture and pastoral pursuits will be combined.
494. The climate is something like that of Tamworth? Yes.
495. Would lucerne grow there? Yes.
496. If you could get lucerne to grow, you could raise five times as much stock as you raise now? Yes.
497. If the railway were taken through your property, would you be prepared to pay a fair amount to the State for its construction? Certainly, I would be in favour of paying a fair amount.
498. You think it fair that if a man's land is benefited by the State he should pay part of the benefit back to the State? Certainly, because he reaps the benefit indirectly.
499. *Mr. Wall.*] You pay about 2s. a bushel to send wheat to Temora? About that.
500. The agricultural development of that country would be impossible without a railway? Yes. A great many people have gone there with the expectation of getting a national line some day.
501. If the railway were constructed, would you bring a large area of land under cultivation? Certainly, because it would pay better.
502. Do you think the other settlers in the vicinity would follow your example? Yes. There are a great many cultivating there now. Mr. Smith has 400 or 500 acres.
503. *Mr. Dawson.*] I suppose you are aware that in England wheat has not been so cheap for two centuries as it is to-day, owing to the good seasons which they have had all over the world. What is the lowest price at which you could profitably produce wheat, if the railway came within 3 or 4 miles of your land, allowing for labour, use of teams, cost of seed, and so on? Not much less than 2s. 6d. a bushel.
504. That is delivered at the station? Yes.
505. *Chairman.*] Is Mr. Lowenthal your neighbour? Yes, his property adjoins mine.
506. Is he a selector? Yes, a selector and manager.
507. How many acres has he under his control and management? About 30,000 acres.
508. How many sheep does his land carry? He owns something like 30,000 sheep.
509. Has he any land under cultivation? Yes; he grows artificial grasses principally.
510. How many acres has he under artificial grasses? About 20 acres.
511. Do you know where he sends his wool? By teams to Temora, and then on to Sydney.
512. Do you wish to add anything to your evidence? No further than that it is a magnificent little estate he has got there. It is reckoned a small estate in that part of the country.
513. Is it a freehold? A great portion of it is; but part of it is Crown land.
514. How much is freehold? About 5,000 acres.
515. And the rest is held under lease? Yes.
516. Will the lease expire in 1895? I think so.
517. Do you wish to say anything as to the character of the land? It is very good land.
518. Is it all suitable for the production of wheat? Not all. A great portion of it is boree country, which is first-class grazing land.
519. But not so suitable for agriculture? But not so suitable for agriculture.
520. Unless the railway were extended beyond Wyalong could agriculture be profitably undertaken? A great many small holders would go in for agriculture if the railway came to Wyalong, because it would then be within 30 or 40 miles of a great many of them.
521. You think they would bring more land under cultivation then? Considerably more land would be brought under cultivation, even if the railway came only to Wyalong.
522. But to serve you and your neighbours the line would have to be taken past Wyalong? Well, if it came to Wyalong it would make a difference of £2 a ton in regard to our wool.
523. Do you know anything about Cargellico? Yes.
524. Did you hear the evidence which has been given in regard to the character of the settlement, and the nature of the soil there? I heard Mr. Pearce's evidence; but I do not think any Government would be justified in running a line direct to Hillston.
525. Do you know the country between Wyalong and Hillston in a direct line? Yes.
526. Do you think it is as good for railway construction as the country along the proposed route? I think the proposed line runs through the cream of the country.
527. *Mr. Wall.*] Can you give the Committee any idea of the cost of clearing boree and yarran country? The cost of clearing boree country would be very little.
528. About how much an acre? I think you would get that country grubbed for 10s. an acre.
529. Are there any blocks of country along that line where 20,000 acres could be selected suitable for village settlements? Only in the vicinity of the lake, which will become a great district for creameries if the railway goes there. I think it will be one of the greatest cream districts in the Colony.
530. Do you think that if the railway were constructed a 20,000 acre block could be obtained? The only drawback would be the water supply; but there could be no better land.
531. Is there that quantity of land available? There are hundreds of thousands of acres available where the line runs. There are 75,000 acres on the gold reserve alone, from what they call Four Corners to Lake Cargellico.
532. *Chairman.*] Do you know the country in the elbow formed by the line near the lake? Yes.
533. There is a large basin there supplied with water from the lake, which is estimated to contain from 20,000 to 30,000 acres? There is fully that.
534. Have you ever seen it dry? I have seen it pretty well dry.
535. What kind of land is there there? It is very good land—splendid country.

- Mr. J. Brett. 536. Would that land be suitable for agriculture;—if a dam were put across the lake, it would be dry in a couple of years? Yes.
- 13 April, 1894. 537. Would that land be suitable for agriculture? Yes, it is black soil.
538. Could it be irrigated from the lake by means of a pipe passed through the embankment? Easily.
539. Would it be possible to have a village settlement under those conditions? Yes; that is just the place for one.
540. With complete irrigation? Yes.

SATURDAY, 14 APRIL, 1894.

[The Sectional Committee met at Jacob and Co.'s Store, Wyalong, Main Camp, at 10 a.m.]

Present:—

THE HON. FREDERICK THOMAS HUMPHERY (CHAIRMAN).

HENRY DAWSON, Esq.

WILLIAM CHANDOS WALL, Esq.

The Sectional Committee further considered the proposed Railway from Temora to Wyalong.

Mr. Thomas Pearce, solicitor, Hillston, sworn, and further examined:—

- Mr. T. Pearce. 541. *Chairman.*] You desire to correct a portion of the evidence you gave yesterday? I desire to say with regard to my evidence as to the price of wheat, that there is a local market at Hillston, and when I mentioned 2s. 6d. a bushel, I meant that the farmers would be satisfied with that price either at Hillston or at Carrathool.
- 14 April, 1894. 542. That is the local price? Within a certain radius for carrying.
543. It is the ruling price? This year it was about the ruling price. The price varied from 3s. 6d. to 2s. 5d. at Hillston itself.
544. Is there anything you wish to add to your evidence? No; I do not think so.

Mr. Robert Edward Moore, farmer, Youngie Plains, sworn, and examined:—

- Mr. R. E. Moore. 545. *Chairman.*] Where is your place located? About 14 miles from the surveyed township of Wyalong.
- 14 April, 1894. 546. How far will you be from the railway as shown on the plan? I should think Wyalong would be the nearest station to me.
547. Would Wyalong be as near as the 340 mile post? That might be within 10 miles of me.
548. You would be served by the railway if it came to Wyalong? Yes; I should be quite satisfied with a railway within 20 miles.
549. What is the area of your holding? 2,560 acres.
550. How do you use it? For agricultural and pastoral purposes.
551. How much land have you under cultivation? Over 200 acres this year.
552. In wheat? Wheat and oats.
553. How many sheep do you graze? About 2,500.
554. Did you grow wheat last year? Yes.
555. How many bushels did you get to the acre? Last year it averaged about 20 bushels to the acre.
556. How many acres had you under cultivation last year? 120 acres. I have grown wheat for the last four years.
557. Where do you send it? I sent part of it this year to Sydney.
558. To what station on the railway? To Temora.
559. How far are you from Temora? About 52 miles.
560. What is the cost of carriage? About 2s. 6d. a bag. I sold one load of sixty-four bags at Temora at 2s. 9d. a bushel. The Sydney wheat is not sold. They store it.
561. Has the construction of the railway to Temora led to a large increase in the area under wheat? There can be no doubt about it. If there were a railway to Wyalong I should have at least 500 acres under cultivation.
562. Did you sell your wheat last year? Yes; principally for local consumption at 3s. a bushel.
563. You did not send any to Sydney? No; this is the first year that I have sent any to Sydney.
564. Did you send your wheat in the direction of Cargellico? No; I sent it all to Temora. Temora is the nearest railway station.
565. *Mr. Wall.*] How much did you send to Sydney this year? About 104 bags.
566. Nearly 500 bushels? Yes.
567. Are there many other farmers growing wheat in this vicinity? Yes.
568. What was the total tonnage forwarded by you last year to Sydney in the shape of wool and wheat? Last year I forwarded 104 bags of wheat and about 5 tons of wool.
569. What number of selectors within 20 miles of Wyalong in each direction would be served by the proposed line? There would be a vast number of selectors served by the line shown on the plan. That line taps some very good country.
570. Is there much land available for settlement? Very little now; but when the leaseholds are resumed there will be a lot of agricultural land available.
571. Suppose they are not resumed? The rest of the land is nearly all taken up.
572. Can you give us an idea of the number of conditional purchasers who would be served by a line from Wyalong to Cargellico? No; I have not had time to get the information.
573. You say that the construction of a railway would induce you to put a larger area under cultivation? Yes; and all my neighbours would go in for agriculture.
574. Would it pay them to forward wheat to Sydney at 2s. 6d. a bushel? It would not pay at the present price.
575. Have the majority of the selections between Wyalong and Cargellico been taken up in the interests of those who made them? That is a question I am not prepared to answer.

576. You cannot express an opinion upon it? Most of the selectors in my immediate neighbourhood, that is on Hiawatha, Lake Cowal, and so on, are *bonâ fide* men.

Mr.
R. E. Moore.
14 April, 1894.

577. But is there not a current rumour that a large quantity of land in that district is being alienated in the interests of pastoralists? That question I am not prepared to answer.

578. Has there been any great demand on the part of people requiring land for settlement that the leases shall be thrown open? Yes; I have had several inquiries from Victoria within the last three months from *bonâ fide* men who would use the land for agricultural purposes, asking when the leases would be thrown open.

579. Have you been agitating for a railway for any length of time? I only selected on the 3rd of April, 1890. We have been agitating for a railway during the last two years.

580. Has there been a general effort on the part of the settlers to induce the Government to take a line through this country? Yes, there is a general feeling in favour of it.

581. Have you never taken the trouble to prepare statistics showing what the probable traffic on the line would be? I do not know if our league has done so, but the league at Barmedman took that trouble some time ago.

582. And how have the local farmers endeavoured to make their voices heard;—have they made representations to the Minister? There was a deputation at Cootamundra upon the occasion of the opening of the Temora railway; I was present upon that occasion. That was the last deputation from this district so far as I am aware.

583. Do you know of the character of the country through which the proposed line would pass? Yes, for most of the way.

584. For how far along the line? As far as Lake Cargellico.

585. Is the land generally good? The line marked on the plan could not go in a better direction to open up agricultural land.

586. Do you think it goes through land which would yield 15 bushels to the acre? I do, honestly.

587. I suppose you are aware that this railway has been proposed subject to the application of the betterment principal? Yes.

588. Would you, as a landholder, be prepared to contribute towards the cost of the line? Yes, very freely, because it would enhance the value of my property and give me access to market. At present we cannot afford to grow wheat, and send it to Sydney for the price given.

589. Is that the general feeling of the farmers who would be served by the construction of the line? Yes.

Mr. Miles Nicholson Carter, manager of the Billabong holding, sworn, and examined:—

590. *Chairman.*] Who are the owners of your station? Mr. Henry Ricketson is the holder.

591. How long have you been in the district? Twenty-three years.

592. Have you been managing during the whole of that time? Yes.

593. *Mr. Dawson.*] What is the extent of your run? One hundred thousand acres, counting in the resumed area as well as the leasehold area.

594. Is there any freehold? Yes, about 18,000 acres of freehold.

595. What leasehold is there? About 35,000 acres.

596. And the balance is what? The balance forms part of the resumed area.

597. That is about 50,000 acres? Yes; the resumed area is 46,000 acres.

598. Is your country pastoral or is it agricultural? The land adjoining this township is altogether of an agricultural character, while on the Bland it is pastoral country. The two districts are quite distinct in character—that round here is agricultural land, while the other is salt bush and myall plain.

599. But both of their class are good? Yes.

600. The Bland country is very good for pastoral pursuits, and this is good for agriculture? Yes.

601. Do you go in for agriculture? No, except to grow hay for our own use.

602. How many sheep do you run? From 50,000 to 70,000.

603. Where do you send your wool? To Sydney. Last year we sent to Temora; but before that we used to send to Young.

604. If the railway were brought to Wyalong, to which station would you send? We should be within 8 miles of Wyalong.

605. And all your wool would come here? Yes; all our business would be done here.

606. If the railway were brought to Wyalong, would you part with any of your land? Yes, under certain conditions. We have here about 10,000 acres in the resumed area, and about 26,000 acres in the leasehold area—all splendid agricultural country. Our land, however, has been very much cut up by the diggers, and our tanks have been used by them. Three or four of our tanks have been resumed by the Government, and I would suggest—though I have no authority from Mr. Ricketson for making this offer—that for full compensation for our improvements and lease we should throw up our lease for the benefit of this township and the railway.

607. Do you mean, throw up the whole of your lease? The 26,000 acres of leasehold, and the resumed area, receiving compensation for improvements and lease. While I suggest that this country should be thrown open for selection, I have no authority for making the offer.

608. These 26,000 acres, if thrown open to the public, would be settled upon? At once.

609. By *bonâ fide* men? Yes.

610. You would not suggest to Mr. Ricketson that he should get any of it back? The station would not take an acre of it back. We have had several such blocks as that of which I am now speaking, and we have asked that they might be thrown open for selection in exchange for other land. The offer was so highly thought of by the District Surveyor and the Chairman of our Land Board, Mr. Edwards, that they fell in with the suggestion, and highly recommended that it should be carried out.

611. You would concentrate your holding by throwing open this land to the public? Yes.

612. But it is a matter of arrangement between Mr. Ricketson and the Government? Yes.

613. Suppose the land were taken up, what would be the average crop per acre obtained from it? Not being a farming man I should not like to give an opinion on the subject.

Mr.
M. N. Carter.
14 April, 1894.

- Mr. M. N. Carter. 614. Do you know what the people round you are getting? There has only been an agricultural population settled here for a very few years, so that I could give you no idea.
- 14 April, 1894. 615. As an old resident of the district you believe that if the railway were brought to Wyalong, a vast amount of country would be used for agriculture? I have no doubt whatever about it. I am positive that the country to which I have referred would be selected within a month if the construction of a railway were assured.
616. How many sheep would this country carry, if selected;—would its carrying capacity be materially increased? It would depend upon the season, but it would make a difference of from 10,000 to 12,000 sheep.
617. Where do you send your surplus fat stock—to Homebush or to Melbourne? To Homebush.
618. How many do you send away in a year? This station is worked with Baratta, and we send our store sheep down there.
619. And then they go to Melbourne? Yes; and any fat stock we have we send to Homebush.
620. How many store cattle have you? Eight hundred or 900 at present. As a rule we do not have over 100.
621. How many store sheep do you send away from here? Something like 10,000 a year.
622. The railway will make no difference to them? I have no doubt whatever that if the railway were made we could send our sheep to Sydney, fat, quite as well as Mr. Ricketson would send them from Baratta.
623. Then you would have from 5,000 to 10,000 fat sheep to send to Homebush if the railway were made? Yes; it would entirely alter the management of the runs. The reason that the fat sheep go to Baratta is that there they are nearer to the railway. We have quite as good fattening country here as they have there.
624. I suppose if a railway were constructed it would make this estate much more valuable? Yes.
625. Do you think Mr. Ricketson would object to pay a proportion of the cost of the railway as a betterment tax, the tax extending over a period of about seventy years? I could not tell you. I do not know what Mr. Ricketson's opinion on the subject is.
626. What else does the district produce? I think that if a railway were made a great many things would be grown here that are not grown now.
627. I noticed a lot of very fair ironbark timber round here yesterday;—could railway sleepers be got from them in any quantity? There is a great deal of ironbark all round here, and there is very good pine.
628. But pine is not good for sleepers? No; but it is good for other purposes.
629. Is the ironbark close to the proposed line? Well, it is a few miles off here.
630. Do you know anything of the country between Wyalong and Lake Cargellico? No; I only know it as far as Hiawatha.
631. What is that country like? It is similar to this.
632. Is it good land? It is our resumed area, and you can imagine what it is like, when I tell you that the whole of it has been selected, with the exception of 10,000 acres.
633. By *bonâ fide* men? Yes.
634. I suppose you can tell us better than anyone else whether they are *bonâ fide* men or not? I believe they are all *bonâ fide* men. As regards this station, there are none but what are *bonâ fide*.
635. You heard Mr. Moore say that all his neighbours would increase the area they had under cultivation if the proposed railway were made? Yes. I know Mr. Moore's land very well indeed, having had charge of the same country for years, and I believe it to be excellent agricultural land. I believe there would be a very large agricultural population there.
636. Do you know anything about the growing of barley? No; I do not know anything at all about it.
637. If the land were used for agriculture, I suppose a great many more sheep could be fattened by the farmers and sent away? Yes; because the areas would be smaller.
638. Can you give us any idea of the tonnage you get inwards for station purposes? For station purposes alone, not including wire netting or anything like that, we get something like 25 tons a year, and with fencing material we have had as much as 50 tons a year.
639. If the railway were made, would you get other commodities up, such as rock-salt? Yes; and suppose the Government were to favour my suggestion, we would have to improve our place very much by cutting it up into smaller areas.
640. Mr. Wall.] Do you think that if the Government were to adopt your suggestion, a large amount of land would be cultivated in the vicinity of Wyalong? I feel certain that it would be taken up at once.
641. Are you aware that the Government have issued a proclamation reserving 50,000 acres in the vicinity of Wyalong for mining purposes? Not on our leasehold.
642. You know the proclamation? Yes, I saw it.
643. Is the land referred to in it of an auriferous character, and likely to be required in the interests of mining? I could not tell you.
644. I suppose you are aware that it would not be required for agricultural purposes? The 10,000 acres is the only portion that has been resumed. The 26,000 acres has not been resumed.
645. It is the intention of the Department to resume the land within a mile on each side of the line, and to dispose of it in special areas at an increased price;—do you think the construction of the line will enable the Department to get an increased price for land so reserved? Yes, I think so.
646. Is there any great quantity of vacant land between Wyalong and Lake Cargellico adjacent to the proposed line? I do not know any of the country between Hiawatha and Lake Cargellico.
647. Is there much land available for settlement close to the proposed line between Wyalong and Hiawatha? It has nearly all been selected.
648. Do you think the railway would fairly serve the pastoral country between Cowen Downs and Cargellico, and Cargellico and Hay? It would be of immense benefit in time of drought, because stock could then be moved from the dry country towards the mountains.
649. Do you think the pastoral interest would be fairly well served if the country were intersected by a line going nearly midway between the Cobar line and the Hay line? I think that such a line would be of untold benefit to the sheep farmers in the district, especially in dry seasons.
650. And is it your opinion that the more central that line was, the better the pastoralists would be served by it? I imagine that would be so.

MINUTES OF EVIDENCE—RAILWAY FROM TEMORA TO WYALONG.

651. Have you any knowledge of the approximate number of sheep depastured within 30 or 40 miles of the line as far as Cargellico? No; I have not.
652. Is it customary for pastoralists here to shift a large part of their stock in times of drought? Yes; or else the stock would die.
653. Do you think the railway would be used for that purpose? I feel certain of it. In times of drought we have had to shift nearly all our sheep to another place owned by Mr. Ricketson.
654. *Chairman.* At what do you value your freehold at the present time per acre? Really I do not know. We gave from £1 to 25s. an acre for it, and we have improved it very largely, so that it is of great value now. We have only three miles of permanent water, and as we run 40 miles back, we have had to conserve water all over the place. The land would have been totally useless otherwise.
655. Could you put a price upon the land in the vicinity of Wyalong? We have no freehold in the vicinity of Wyalong; it is all leasehold.
656. How far away is your freehold land? Nine or ten miles from here.
657. Would it be served by the railway? It would be all served by the railway.
658. I want to know what the increased value of your land would be if the railway were constructed? It would not increase the price so much.
659. Would it increase the value of the land £1 an acre? No, it would not make any difference to the carrying capacity of the land; though of course it would benefit us to have nearer railway communication.
660. You would save in the cost of carriage? We should save about 30 miles of carriage. Our nearest station now is either Forbes or Temora.
661. Have you in past seasons been obliged to send many stock from here to the mountain district? Yes.
662. Is that in the direction of Gundagai? You pass through Gundagai to get to it.
663. Do you use the railway to Gundagai? We have not had to send stock away since that railway has been opened.
664. You have had good seasons since then? Fair seasons. It would scarcely be worth our while to truck sheep over the 30 miles from Cootamundra to Gundagai.
665. But from here? That would make a considerable difference.
666. Would it be worth your while to use the railway from here for that purpose? It would.
667. And would the railway be equally serviceable to stockowners in the neighbourhood of Hillston? It would.
668. Do you know the locality proposed as a site for a tank on No. 12? Yes; I have a tank there now.
669. I believe it is the intention of the Government to resume that land? So the surveyor told me.
670. Do you know the area which it is intended to resume? We have a purchased block there of 225 acres.
671. Do you think the whole of that will be resumed? Mr. Wade told me so the other day, together with another tank to the east.
672. Will it be a suitable site for a tank? Yes; if the catchment area is sufficient.
673. What is the catchment area? It must be 300 acres.
674. What do you think should be the capacity of a tank that would serve the town? It would all depend upon the number of the inhabitants.
675. I think it is proposed to have a tank of 10,000 yards capacity? I scarcely think that would be sufficient. This is a very dry part of the country, our rainfall being, I suppose, from 15 to 20 inches in the year.
676. Can you say what quantity of water could be conserved by means of a 10,000 yards tank? I really do not know. Mr. Wade said that the Government would resume a tank of ours about a mile and a half or two miles to the east of this one. The tank has a capacity of 13,000 yards, and I should not think it at all too big.
677. Is the evaporation here very great in summer time? Yes; and the earth which is excavated should be built up to a great height around the tank.
678. Have you had great experience in making tanks? Yes.
679. Can you offer any suggestion as to the best shape and mode of construction? I have a great objection to square tanks, because the smaller the surface is the better. Oblong tanks are the best, and you cannot have them too deep.
680. Would it be possible to construct a tank of that description and obtain the benefit of the whole drainage area? Yes, and the tank which is there now could be used as a silt tank.
681. What are the dimensions of the existing tank? About 2,600 yards.
682. What is its shape? It is nearly square.
683. You propose to lengthen the tank? I would not use that tank for the purpose of supplying the township. I should use it to catch the silt.
684. You would make it a filter? Yes; that is what I do with all my tanks. The water would settle in the first tank before running into the big tank. I have always found these small tanks very beneficial.
685. You mentioned that there had been a considerable amount of selection near to you. Has the land been taken up in large or in small areas? That is on the resumed area. The full quantity has been taken up.
686. Two thousand five hundred and sixty acres? Yes. I think there are only two or three who have not taken the full quantity.
687. Can you say whether they are using the land for pastoral purposes only, or for agriculture, combined with pastoral pursuits? They have not been there long enough yet to clear the land for cultivation.
688. How long have they been there? I do not think it is more than four or five years since the first selection was taken up there.
689. It is since the Temora railway was recommended? That is just about the time.
690. Of course, you know the site selected for the new township? Yes.
691. Are you of opinion that it is the most suitable site for the purpose? Yes; I think it is very suitable.
692. Do you know of any better site nearer to the Main Camp? No; I do not.
693. Do you know the difference in elevation between here and the Main Camp? No, I do not; but I do not think it would be much. I should say it would be from 15 to 20 feet.
694. Have you travelled the road between here and Temora? I have gone once or twice from Barmedman to Temora, but never from this township to Barmedman.
695. What road do you use? A road which goes from Marsden; the stock route to Barmedman.

Mr.
M. N. Carter.
14 April, 1894.

- Mr. M. N. Carter.
14 April, 1894.
696. Do you go to Temora? We go through Barmedman, striking the road about 5 miles from here.
697. Do you get your stores by the same road? Hitherto we had always got them from Grenfell. The Temora line has only lately been opened, and our supplies came up before it was opened.
698. Do you think it probable that a railway to Wyalong would create a traffic in addition to that now existing, which would pay interest and working expenses? I have no hesitation whatever in saying that it would.
699. *Mr. Wall.*] Do you know if the railway to Temora is paying expenses? I do not; but I should scarcely think so.
700. Do you think there would be better prospects of the railway paying if it were extended to Wyalong? Yes; prospects would be still better if it were taken further west.
701. Has there not been a fall in the value of pastoral property during the last ten or twelve years? Pastoral properties now are nearly unsaleable, and so is produce.
702. *Chairman.*] I suppose this depression has been common through all the colonies? Yes.

Mr. William McFadyean, builder and farmer, Cargellico, sworn, and examined:—

- Mr. W. McFadyean.
14 April, 1894.
703. *Mr. Wall.*] How long have you been at Cargellico? Twenty-one years.
704. Has the growth of that place been rapid during the last two years? No, it has not; its progress of late has been very small.
705. What is the number of buildings in Cargellico, approximately? There are three or four stores and three hotels. I suppose the population is about 500.
706. Do they do a large business in most of the stores? Lately they have done very little.
707. Is there much settlement in the vicinity of Lake Cargellico? There has not been a great deal during the last two or three years.
708. Is there much land available for settlement there? Very little of the resumed area is available.
709. What justification is there in asking for an extension of the railway to that part of the country, having regard to the prospect of its paying interest on construction? Mount Hope is 40 miles away from Cargellico, and all the traffic from Sydney there would come over the proposed line, and there would also be the traffic back. We are from 110 to 108 miles from Whitton, and the traffic that now goes there would come over the proposed line.
710. Do you know the distance between Mount Hope and Herbertdale on the western line? No. I am not as much acquainted with that country as I am with the country on this side.
711. You say that all the traffic from that country would be taken by the proposed line. Do you know the extent of that traffic? No; but if I had known that I was to appear before you to-day I should have been prepared with an estimate of it.
712. I suppose you know that the Mount Hope mines are now practically closed down, and have been for some years? They are open again.
713. They are let on tribute? Yes.
714. Do you know what the output of the tributors has been during the last few years? I cannot say what it has been.
715. You are not aware that the balance-sheet showed a very serious loss on last year's operations? I was not aware of that.
716. I suppose you are not aware that the mines would have been closed altogether had it not been for some compensation paid by the Government, which has enabled them to defray their expenses? No; but I am not connected with the mines. I should like to point out that it is all good agricultural country within 10 or 12 miles on the other side of the Lachlan.
717. Do you think the construction of the proposed line would bring about a large agricultural settlement? I am sure of it, because it is all agricultural country from here to there.
718. Have you any idea of the cost of growing wheat there? Yes; at present there is no market for wheat.
719. What is the cost of cultivation per acre? It all depends upon how the land is worked. The small areas which the farmers are now cultivating are worked at twice as much as it would cost to work 500 or 600 acres.
720. What is the cost of clearing that land? From £1 to £2 an acre; it all depends on the timber upon it.
721. I suppose the soil is fairly light; they could use double-furrow ploughs upon it? Yes.
722. Have you any knowledge of the area of land available near the existing railways, and nearer to the metropolis than the land of which you are speaking;—can you give us any reason why that land has not been taken up? I do not know much about other land, because I have always been living near the Lachlan.
723. You say that the land in the vicinity of Lake Cargellico would be cultivated? Yes; all the resumed portion is taken up already.
724. For pastoral purposes? It is to be used for pastoral purposes. There is no market for produce.
725. Can you give us any idea of the return per acre from that land when used for pastoral purposes? No, I could not at present.
726. If we were told that that land would carry more than a sheep to the acre, and it is utterly impossible to find one of them poor enough for killing, is that your experience of it? No.
727. Do you think that this land could be better used for cultivation than for raising stock? I am sure of it.
728. And has there been any strong desire to have the leases in that part of the country thrown open for settlement? There has been a unanimous desire of late.
729. Almost an agitation? Yes.
730. You do not think that the throwing open of the leases would bring about the defeat of settlement? I am sure it would not.
731. Can you say whether, as a rule, the land will carry more when held in small areas than when held in pastoral lease? Yes; it seems to carry about four times as much.
732. And you think that not only would the population be greatly increased if the pastoral leaseholds were thrown open, but that the carrying capacity of the land would be quadrupled? I am sure that it would.

Mr.

Mr. Edward Townsend, station overseer, Lake Cargellico, sworn, and examined:—

Mr.
E. Townsend.
14 April, 1894.

733. *Chairman.*] Who is the owner of your station? Mr. D. Mackellar.
 734. What is its area? It was originally 300,000 acres.
 735. How much purchased land is there? Something over 20,000 acres.
 736. And the rest is leasehold? Leasehold and resumed area.
 737. You are using it under an occupation license? We are not using the resumed area.
 738. What stock are you carrying? I do not know what they are carrying now. I have left there.
 739. But when you were there? 40,000 sheep.
 740. Where was the wool sent? To Whitton.
 741. *Mr. Dawson.*] Does it take 7½ acres to keep a sheep? In some cases it does.
 742. How far are you from the country where 800 sheep are fattened on 600 acres? I never heard of that country, though I have seen country that would do that for a time. There are odd places within 100 miles of us that would do it.
 743. Would the grazing and agricultural capabilities of the land be increased to any extent by the construction of a railway? Yes.
 744. Do you know a better route for the line than that proposed by the railway? I do not know how you could get a better route.
 745. You do not know anything about the engineering difficulties along the route? No.
 746. To what extent would the grazing and agricultural capabilities of the district be developed by the construction of a railway? To my knowledge they would be more than doubled.
 747. That is, if the land were cut up into small holdings? Even if the land were left as it is. Half of that country will carry a sheep to 3 acres. The country that only carries a sheep to 7½ acres will never be occupied.
 748. How far is that bad country from the railway? One corner is about 5 miles south of the line.
 749. Is it no good at all? It is like the country behind here, but the soil is sandier.
 750. Could not that country grow wheat if the mallee were cut down? Yes; but there is plenty of other country which would be taken up first, unless the land were classified.
 751. *Chairman.*] How far is your station from Whitton? One hundred and ten miles.
 752. What do you pay for railway carriage from Whitton to Sydney? I never had anything to do with that part of the business. I was simply the sheep overseer.
 753. How long were you there? I was in the district twenty years.
 754. Where is the most settlement? Around Lake Cargellico.
 755. Will the proposed line serve most of the selectors? Most of the selectors are east from Lake Cargellico.
 756. Along the proposed line? Yes.
 757. How far out from Lake Cargellico are they—in a north-westerly direction? About 15 or 20 miles.
 758. They will all be served by the proposed extension? Yes. Then there are a number of settlers to the south and south-east.
 759. At what distance from the proposed line? The nearest would be only 5 or 6 miles away.
 760. And the more distant? Fifteen or 20 miles. There are also a number of selectors about 20 miles to the north of the 380-mile post.
 761. They would be served by the proposed line to Cargellico? Yes.
 762. Do you know the country in a direct line from Hillston to Wyalong? No.
 763. Have you any knowledge of any other part of the country, from a pastoral point of view? I just know a few of the stations around.
 764. Do you know anything about the Barwon country? No.
 765. You could not make a comparison between this and any other place in regard to productiveness? No; I know nothing at all about other places.
 766. Do you know anything at all about the Hay country? I have only passed through it. A large industry would be opened up by the railway in the sending of pine from Cargellico to Sydney.
 767. How could that district compete with Narrabri and Boggabri? Well, the Lachlan pine is white-ant-proof.
 768. Is any of it sent to Sydney now? No.
 769. *Mr. Dawson.*] What could it be sent for? I do not know.

Mr. Alexander Gordon Huie, labourer, Cargellico, sworn, and examined:—

770. *Chairman.*] How long have you been residing at Lake Cargellico? About eleven years.
 771. What have you been doing there? I take any work that I can get. I have been working at the building of a bridge over the river.
 772. Do you know of any reason for the construction of the proposed railway;—is there any prospect of its paying interest on the cost of construction? I should say that there would be a very considerable amount of settlement on both sides of the line if it were constructed.
 773. Is that land available for settlement now? Most of it is not. For instance, the leasehold on Wheyo run will not be available for selection for twelve months.
 774. Have you had experience of cases where great promise of settlement has been held out before the construction of railway, but where the land still remains a wilderness? I have been along the Hay line, and I know that there is a large amount of land there which is not used; but I think a great portion of that land is locked up in large estates. I think that all the land along the proposed line should be leased in suitable areas, which would be a guarantee that it would be used.
 775. Do you think the character of the country is such that the people would settle upon the land if a railway were constructed? Yes.
 776. Has the place gone ahead much during the last few years? Not recently. They feel the depression here as well as elsewhere.
 777. Is this regarded as a good district by those who are settled here? Yes.
 778. Have many of those who have selected here parted with their land? Yes. Some of them took it up with that intention, but others still hold it. These people would go in for farming if they had a market.
 Their

Mr.
A. G. Huie.
14 April, 1894.

- Mr. A. G. Huie.
14 April, 1894.
- Their only market at present is Mount Hope, where they send chaff. The rest of their produce is consumed locally.
779. But they grow very good hay and chaff in the vicinity of Mount Hope? Not such a great deal. I know a man who has been sending chaff up there as long as I have been in Cargellico.
780. They grow good wheat and chaff there? They grow some, but very little.
781. But wherever cultivation has been tried it has been fairly successful? I believe so.
782. Is there a very large area of land available in that vicinity? I believe the leases there have a great many years to run.
783. Do you think it is likely that if there was any great demand for produce at Mount Hope they would send to Lake Cargellico, when they could grow it near at hand? It is 35 miles from Gilgunyah to Mount Hope.
784. But if they had tried to grow it closer to Mount Hope, would not the experiment have been successful? No doubt, if the season had been good; but the season is not certain there.
785. You do not suppose that a very extensive market would be opened up for the sale of produce in that district? Not a very extensive market; but that is the only market they have.
786. Have many transfers of selections taken place during the last year or two? I could not say; but some have.
787. Do you know if the scarcity of these transfers is attributable to the *bonâ fide* nature of the selection, or to the impecuniosity of the pastoral tenants? If the pastoral tenants had had more money, they might have taken over more land.
788. Can you say whether those who have taken up land near Lake Cargellico are, as a rule, *bonâ fide* men, and make a fair living in depasturing stock there? I should say that the bulk of them were *bonâ fide* selectors.
789. And you think they are doing fairly well with their selections? There are not many of them who make a living from the land alone, though some of them do. Others get outside work, such as contracting, or carrying, or working in a sawmill.
790. As a matter of fact, then, they are not all small pastoralists? As a rule they put in a small crop, and they run sheep.
- 791-2. And carry on the roads? Yes.
793. Do you think that if the railway were constructed a great number of them would live on the land? Yes; I think a great many selections would be taken up if the railway were constructed, because they would then be able to get their produce away. With regard to what Mr. Townsend said about the export of pine, I may mention that pine has been taken to Whitton, a distance of 24 miles, and if it pays to send it there, surely it would pay to send it to Sydney if the proposed line were constructed.
794. Was that pine taken to Whitton for any special purpose? It was taken to Whitton and sent along the line. I should say that the betterment principle should be applied to the proposed railway.

Mr. Edward Thomas Clark, selector and farmer, Hiawatha, sworn, and examined:—

- Mr. E. T. Clark.
14 April, 894.
795. *Chairman.*] What is the area of your holding? 2,560 acres.
796. When did you take it up? In 1891.
797. For what purpose are you using it? For pastoral and agricultural purposes.
798. How much have you under cultivation? About 100 acres this year.
799. Had you any under cultivation last year? About 40 acres.
800. How many sheep are you carrying? About 1,500 sheep.
801. What distance are you from the route of the proposed railway from Wyalong to Cargellico? About 6 miles.
802. Out from the 350-mile post? Yes; about there.
803. Can you speak as to the settlement in that locality? Yes; nearly all the land in that district is settled upon.
804. Is it held in large blocks similar to yours? Yes; about the same.
805. Are all the selectors following pastoral pursuits, combined with agriculture? Nearly all are going in for agriculture, combined with pastoral pursuits.
806. All to the same extent? Some are going in for agriculture more than others.
807. Would the whole of that district be served by the proposed extension? Yes; but I believe that if the line were bent up from Wyalong so as to go in a more northerly direction, it would serve more country than it will if bent to the south.
808. Do you know if there would be any difficulties in its construction? I am not aware.
809. Are you familiar with the country there? No; but I think the country is level.
810. By keeping the line in a southerly direction, it is not necessary to have a bridge over the Humbug, while, if you went north, you would require a bridge. With that explanation, do you think the best route has been selected? Yes, I think so.
811. Would you like to make a statement in reference to the proposed railway from Temora to Wyalong? The district between Wyalong and Woolengough is nearly all settled upon, and the most of the settlers there would go in for agriculture, if they could make it profitable. They do so now to a certain extent; but if a railway were constructed they would largely increase the area under cultivation.
812. You think that land could be profitably used for agriculture if the railway were extended to Wyalong? Yes; providing a fair price could be obtained for wheat.
813. What do you regard as a fair price, in Sydney? 3s. a bushel in Sydney.
814. You think wheat would pay at that price? Yes.
815. I suppose you produce other things besides wheat? Yes, hay. We get from 30 cwt. to 2 tons an acre.
816. *Mr. Wall.*] Did you take up your land yourself? Yes.
817. *Chairman.*] What are you paying now for cartage to the nearest railway station? £2 a ton. I find that my selection would be only about 2½ miles from the proposed line.
818. And how far from Wyalong? About 16 miles by the road.
819. How far would it be by the proposed railway? Five or 6 miles.
820. Has any land in your locality changed hands within the last three or four years? No.
821. I suppose people are not in a position to transfer their land? None of them are certificated yet.
822. Would the construction of a railway make any difference to the value of your land? Yes; from 10s. to 15s. an acre.

Mr.

Mr. Robert Gagie, selector and carrier, near Wyalong, sworn, and examined:—

Mr. R. Gagie.
14 April, 1894.

823. *Chairman.*] Where is your holding? About 3½ miles from where we are now.
 824. How far from Wyalong township? Five miles.
 825. In what direction? North-west.
 826. Would you be served by the proposed railway from Temora to Wyalong? Yes.
 827. What is the area of your holding? It is a family selection.
 828. How many acres have you? 7,500 acres.
 829. How much land have you under cultivation? Twenty acres.
 830. The rest you use for pastoral purposes? Yes.
 831. How many sheep do you run? 4,500 sheep, and 100 cattle.
 832. Where are you sending your wool? By team to Temora.
 833. What does it cost you per bale? I take my own.
 834. But suppose you had to pay somebody else, what would it cost? £2 15s. a ton.
 835. There are five or six bales to the ton? Yes; five and a half bales on the average.
 836. Is the surrounding country all settled? Yes.
 837. Has there been much selection? There has been a good deal of selection to the north; in fact, all the selection is to the north of where we are; there has been none to the south.
 838. Will the selectors be fairly served by the proposed line? Yes.
 839. Do you think its construction will lead to an increase in the area cultivated for wheat? I think so. I am prepared to do a little when the railway comes there.
 840. Have you formed an opinion as to what price is required to make wheat pay? At Wyalong, or in Sydney?
 841. At Sydney? 3s. 6d. a bushel.
 842. You do not agree with a former witness that 3s. a bushel would pay? No.
 843. Do you find it more profitable to grow wool than to cultivate wheat? Yes.
 844. Do you wish to make any statement in reference to the proposal now under consideration? The construction of the railway will cause a lot of traffic to spring up. All the people within 20 miles of the line would go in for agriculture, and, no doubt, vineyards would be started here. At the present time, because of the distance from market, these industries do not pay.
 845. But the land is suited for agriculture? Yes; it is suitable for the vine. I knew the Albury district for eighteen years, and I have some vines here two years old, which are as healthy as any in the Albury district.
 846. *Mr. Wall.*] Do those engaged in pastoral pursuits here find their occupation fairly remunerative? Fairly remunerative.
 847. Do you think that if the land now under lease in this district were thrown open for selection, it would readily find occupants who would engage in pastoral pursuits on small holdings? I think so.
 848. Do these small holders depasture more stock proportionately than the large holders? Yes; a great many more.
 849. And they improve their land to a greater extent? Yes. On the land I now hold they used to run 2,500 sheep; but I run 4,000 sheep and 100 cattle.
 850. I suppose the improvements you speak of invariably consist of ringbarking? Ringbarking and scrubbing.
 851. Are those improvements made to any extent on the leaseholds? No; the leaseholds have gone back.
 852. The grazing capabilities of the land are considerably increased by them? Yes.
 853. Do you think the Government would be justified in constructing this railway in the expectation that it would receive sufficient traffic to pay interest on the cost of construction? I think so.
 854. You think that the district will compare favourably with other parts of the country where railways have been constructed? I think so.
 855. With what other parts of the country are you conversant? I know the Hay district.
 856. Do you think the settlement in this district is as great as the settlement was in the Hay district before the railway there was constructed? Yes; it would be more.
 857. Do you think there is as much justification for constructing this line as there was for constructing the Hay line? There is more settlement in this district now than there was in the Hay district when the railway was taken there.
 858. Do you think there is as good a prospect of settlement increasing here as there was of its increasing in the Hay district? That depends upon how the land is thrown open.
 859. Assuming that the leases will be thrown open? Yes.

Mr. James M. Jamieson, conditional purchaser, near Wyalong, sworn, and examined:—

860. *Chairman.*] Will you point out on the plan where your holding is? Yes; it is about 16 miles north-west of Barmedman. Mr. J. M. Jamieson.
 861. How far from the proposed railway? I should say about 10 miles. 14 April, 1894.
 862. Would you go to Barmedman if there were a station there? Wyalong would be nearer than Barmedman.
 863. But you would have less freight to pay if you went to Barmedman? It would not make much difference.
 864. What is the area of your holding? 2,560 acres.
 865. When did you take it up? Four years ago.
 866. After the Cootamundra to Temora line was decided upon? Yes.
 867. Did you take it up because of the known intention of the Government to make that line, or had you decided before to take it up? I took it up because I thought the railway would come through.
 868. Where did you come from? From Cootamundra.
 869. You were at Cootamundra then when the Public Works Committee inquired into the advisability of taking the line to Temora? Yes.
 870. How are you using your land? For sheep; and I have cultivated a little.
 871. How much have you under cultivation? About 40 acres.
 872. And how many sheep? About 3,000.
 873. I suppose the land under cultivation is growing wheat? Yes. My children have selections alongside mine. 874.

- Mr. J. M. Jamieson.
14 April, 1894.
874. What is the area of all the selections? About 6,000 acres.
875. And you have 3,000 sheep on the whole selection? Yes.
876. And what area under cultivation? All the land under cultivation is on my selection.
877. What has been the yield of wheat? About 15 bushels to the acre.
878. Have you any land under lease? Not from the Crown.
879. Where are you sending your wool now? To Temora.
880. What do you pay for carriage? About £2 a ton.
881. What distance are you from Temora? Forty miles.
882. Can you say whether the proposed line will serve the whole of the settlement near you? Yes.
883. What is the greatest distance any of your neighbours would be from the proposed line? From 20 to 25 miles, I should think.
884. Do you think they would be fairly served by it? Yes.
885. And in the event of the line being constructed, do you think it probable that you would put more land under cultivation? Yes.
886. At what price would wheat pay you? At about 3s. a bushel.
887. Three shillings in Sydney? 3s. 6d. in Sydney. If you sold locally at 3s. it would be much about the same as selling in Sydney at 3s. 6d.
888. *Mr. Wall.*] How far is your place from Temora? Thirty-eight or 40 miles.
889. That is the nearest point on the railway? Yes.
890. Has the construction of the railway to Temora promoted settlement in the vicinity of the line? Yes.
891. Can you say to what extent the wheat production of the district has increased since the construction of the railway? I could not go into figures, but I know that it has increased very much.
892. Is there a general tendency on the part of people holding land close to the railway to bring it under cultivation? Yes; at Barmedman there has been a great increase in cultivation since it was known that the railway would come to Temora.
893. You have been practically engaged in pastoral pursuits? At present I could not do anything else; but I used to do farming in the Cootamundra district.
894. Are we to infer that those who have taken up land here in small holdings are making a fair living from pastoral pursuits? My experience is that it is best to combine agriculture with pastoral pursuits.
895. Can you point to any case where increased areas have been put under cultivation by people living in the vicinity of Temora because of the construction of the Temora railway? I could not name anyone.
896. But you say generally that there has been an increase in cultivation? There is one farmer named Clements who used to only grow a little hay, but he has now about 200 acres under hay.
897. Is that hay used for local consumption or is it consigned to Sydney? All the hay he grows he sends to Barmedman for local consumption.
898. Does it pay to send hay from this district to Sydney? I do not think he has sent any hay to Sydney. I think he has sold all his produce locally.
899. Has there been any tendency on the part of holders of agricultural land to increase their agricultural area with a view to disposing of their produce in the metropolitan market? Yes, I believe so.
900. No doubt everyone in this district would advocate the construction of a railway? Yes, because they have no market now.
901. Do you think the construction of a railway would promote settlement in the district to such an extent as to make it pay? I do.
902. You feel convinced that the railway would be remunerative, and that its returns would meet the interest on the cost of construction? Yes, if the pastoral leases were thrown open for selection.

Mr. Donald Hugh Rankin, conditional purchaser, near Wyalong, sworn, and examined:—

- Mr. D. H. Rankin.
14 April, 1894.
- 902½. *Chairman.*] In what direction is your holding? It is about a mile and a half from the Government surveyed township, in a southerly direction. It is a little bit off the road.
903. What is the area of it? 1,900 acres.
904. Is any of it under cultivation? Not yet. I have not been here sufficiently long to cultivate it.
905. When did you take it up? Two years ago.
906. What improvements have you put on it? I have a dwelling-house, kitchen, store-room, buggy shed, fences, and two tanks.
907. Have you any stock? Not at present. I had before the rush took place; but the location of a large population at Wyalong has given me facilities for disposing of it.
908. What induced you to take up land here? I thought the land was good enough to make a home on.
909. What family have you? I have a family of five.
910. Are you able to live by the profits of your selection? I have not been here long enough to test that question, but I think I shall be able to do so.
911. You intend giving it a fair trial? Yes.
912. You will be served by the proposed line? Yes.
913. Do you wish to make any statement or give reasons for the construction of the line;—do you think its earnings will fairly cover the interest on construction and working expenses? In my opinion the land is good enough for settlement; and if the Government deal with the leases about to be thrown open in a way that will bring about their occupation by an agricultural population, there will be a large amount of traffic.
914. The settlement would then be in smaller areas? Yes.
915. Do you think the people here have taken up more land than they can manage? No; but if there were a railway people could live on smaller holdings than they have now.
916. What is the smallest holding that a man could live on? A 640-acre selection, if he were within 10 miles of the proposed terminus.
917. I suppose you can give us no information as to the average yield of wheat here? No. I have been farming for the last nine years, and I came here with the intention of farming, even before the railway was proposed. If the railway were constructed I would make a certainty of it.
918. Where were you farming before? At Junec.

919. Can you speak as to the suitability of the land near the proposed railway for agriculture? Yes; not from my own experience, but from what I have seen on other selections. The land is scrubby and more heavily timbered, and consequently harder to clear than the Junee land, but it is equal to it in every respect. Mr.
D. H. Rankin.
14 April, 1894.
920. Was your land cleared when you took it up, or have you been clearing it since? What I have got cleared has cost me about £2 an acre.
921. That is to get it ready for the plough? Yes.
922. What does it cost you for seed and harvesting? About 12s. an acre for ploughing, sowing, and harrowing, and about 8s. an acre for seed.
923. And for bagging? For stripping and all that—it could be stripped for 8s. an acre.
924. What do you estimate the total cost per acre of taking your produce to the nearest railway station? At the present time?
925. Yes? It would all depend upon the yield.
926. What would be the cost of labour, irrespective of the yield? I suppose something like £3.
927. With the clearing it would cost you £1? Hardly £1; but it would all depend upon circumstances. The more a man cultivates the less the proportionate cost. If a man cultivates a small piece, he has to employ as many men as if he cultivated a large piece.
928. Suppose he cultivated 100 acres? At the present price 100 acres would hardly pay.
929. What would be the smallest area you think would pay? About 200 acres.
930. What do you estimate the cost per acre of all operations, including bagging? It depends a good deal upon the crop.
- 931-2. Taking an average crop? About 18s. per acre.
933. What does it cost for bags and stripping? Fivepence three farthings for bags and about 8s. an acre for stripping.
934. Then it costs you altogether about 25s. an acre? Very nearly; £1, speaking from memory.
935. How many bushels an acre would you consider a fair average yield? About 16.
936. At what price could you sell at a profit? For 2s. 8d. a bushel.
937. Two shillings and eightpence in Sydney? No, in Temora. We always sell in the local market.
938. What would you deduct from that for carriage and selling? About 6d. a bushel.
939. So you think that that 2s. 2d. is a very fair price? I could live on that.
940. That would give you 31s. or 35s. an acre? Yes, and it would leave me about 10s. an acre profit.
941. Would that pay you? Yes; if I had 200 acres under cultivation.
942. One hundred pound would provide interest on your outlay and pay for your own labour? I dare say if I went into the thing very particularly, and charged for my own labour, I could not possibly do it for the price; but so long as we have a surplus at the end of the year we are satisfied.

Mr. John Richmond, Staff Surveyor, Department of Lands, sworn, and examined:—

943. How long have you been in the Department? About 15 years.
944. Were you told off specially to report upon the land and the nature of the water conservation in the Barmedman district? To report upon the character and value of the land and the facilities for settlement in this district. Mr.
J. Richmond.
14 April, 1894.
945. Have you received special instructions with regard to Wyalong? I have received instructions to inspect the whole of the country around here and to go through the leasehold area of every run.
946. How long have you been engaged on this special work? Since last October.
947. Have you furnished your report? I have furnished several on the country between here and Temora.
948. What is the date of the latest report sent in by you? The last I sent in on 31st January.
949. Since you have been here have you recommended that any area should be resumed for a township? Do you mean at Wyalong?
950. Yes? Yes; I selected the site for a township, and a plan of it is now being prepared.
951. How many acres have been reserved? About 500.
952. How many have you surveyed for a township? About 400.
953. How many allotments are there? About 280.
954. What is the area of each allotment? A quarter of an acre.
955. Has that land been taken up? Yes.
956. The whole of it? I believe so.
957. For business sites chiefly? For business and residence purposes. Other land has been pegged out under miners' rights.
958. Have you provided any reserves in the new township? One-fifth of the whole—100 acres.
959. Have you put any value upon the surveyed portion? I have not yet recommended what price should be charged.
960. Have you made an estimate? I have estimated that the allotments should be valued at from £5 to £15—an average of £10.
961. That would give a value of very nearly £3,000 to the whole of the surveyed portion? Yes.
962. And what would the other land cost at the same rate? About £2,000 more.
963. So that the value of the town would not be less than £5,000? It would not be less. Those values are under rather than over.
964. And have you made any provision for water? I examined and inspected the whole country, and recommended as far as possible the resumption of Carter's tank on No. 12, referred to by him in his examination.
965. The resumption of what area? I would recommend that about 320 acres in the catchment area should be reserved.
966. Would that comprise the whole of the catchment area? I think it would take the best of it.

- Mr. J. Richmond. 967. Have you made any recommendations as to the commencement of the tank? Not yet. I suppose it would not be less than 10,000 yards.
- 14 April, 1894. 968. What quantity of water would that hold? 1,500,000 gallons.
969. Do you think that that would be a sufficient supply for the town? I should think so, because the people would not depend entirely upon it; they would have their own supplies as well.
970. Have you discovered any other place within a reasonable distance of the town which you think would be suitable for water conservation? Yes; there are good catchments in all directions—that is, good catchments for this country.
971. So that if it is ascertained that the supply to which you have referred is insufficient, there will be no difficulty in obtaining a further supply? No; another tank further on, of about 13,000 yards capacity, is a good one.
972. Why did you recommend the existing site for the Government township instead of the place we are now in? Because it was more suitable, from a sanitary point of view; more central, having regard to the future of the place; and nearer to the course of traffic. This place to a certain extent, is out of the way, because most of the traffic comes along the main road from Barmedman and Marsden, and the Government township will be near to that.
973. Is the Government township higher than the main camp? Yes; apparently it is.
974. What is the difference in elevation? I have not measured it exactly; but I think 20 or 30 feet, not more.
975. What was your reason for recommending that the main camp should not be surveyed for business sites? I did not report against it, because I have not been asked to report about it at all. My instructions were to choose the best site for a town.
976. And you believe you have chosen the best site? Yes.
977. Can you speak as to mining matters? No.
978. You think that the site you have selected for a town will be central as far as the mines which are at present being discovered are concerned? I think so—more central than the main camp.
979. Mr. Wall.] Have you any connection with the Water Conservation Department? Not any.
980. What do you estimate will be the fixed population of this place within the next twelve months? Do you mean the population of the town or the main camp?
981. Of the gold-field generally? I estimate that there will be at least 800 men working here, besides their wives and children and others dependent upon them.
982. Taking an average of five to a family, that would represent a population of about 4,000? Yes.
983. Do you not think that 300 acres is a very small water catchment for a population such as that? It seems to me sufficient.
984. Have you any idea as to what rule engineers follow when estimating the supply of water required by country towns? Yes; I have had to do with catchment areas before.
985. What is the maximum and minimum supply allowed by the officers of the Country Towns Water Supply Branch? That I do not know.
986. You have examined the country around here pretty fairly? Yes.
987. Is there any place where you could get a larger table drainage for a tank than the place you have recommended should be reserved? Yes, where there is a tank about 1½ mile further on, on the same slope.
988. What would be the area drained by that tank? I do not know. It would be very large.
989. Sufficient to meet the requirements of the place? More than sufficient.
990. Would the water supply be sufficiently close for the Railway Department to avail themselves of it, supposing the railway were brought to Wyalong? I think the Railway Department would require a tank nearer the line. I do not think they could make use of the tank that I have been speaking about, because it would not hold enough. There would be nothing to prevent another tank being put there, however.
991. Were your instructions definite in regard to the laying out of a town, or have you acted upon your own judgment as regards the permanency of the field;—did you consider it necessary to lay out a town? I acted upon my own judgment in selecting a place, and then obtained the approval of Wardens Slee and Sharp.
992. Did you recommend the laying out of a township here? No.
993. Do you know who recommended it? No one. I am responsible for it, and my recommendation was approved of by the two wardens.
994. Acting upon your own judgment as to the permanency of the place, you have laid out a township 2 miles away from here? Yes.
995. And you are taking steps to resume a tank to supply water to a population of 4,000? Those steps are being taken by the Water Conservation Department, who were represented here by Mr. Wade. He was here yesterday or the day before to report upon the matter.
996. Has he inspected the locality where you propose to resume the tank? Yes.
997. Does he regard it as likely to suit the requirements of the place? I believe so.
998. Has he so expressed himself? I think he told me that he considered that it would do; but I am not certain, because we discussed such a great many things that I do not remember exactly.
999. Is he preparing a report for the Water Conservation Branch? Yes; it is probably in now

Mr. Walter Barnet, miner, Wyalong, sworn, and examined:—

- Mr. W. Barnet. 999½. Chairman.] How many years have you been mining? Thirty-five or thirty-seven years.
1000. When did you come to this district? At the end of January.
- 14 April, 1894. 1001. Mr. Wall.] Have you any interest in the place? Yes.
1002. What number of claims are you interested in? I am, with my sons, interested in three claims. We have a claim each.
1003. What are the names of the reefs on which the claims are situated—are they all on the one line of reef? I am No. 3 north of the original prospectors, and No. 4 south of the Niddergold.
1004. Are those claims on the one line of reef? Yes.
1005. Can you give the Committee any accurate information as to the number of lines of reef which have been opened up since the discovery of this field? I should think there are about eight lines of reefs.

Mr.
W. Barnet.
14 April, 1894.

1006. Let us start from the most westerly;—what is the name of that? Gorman's.
1007. How far is it from Gorman's to the next line of reef? The next is the Two-up—about 200 or 300 yards.
1008. And how far is the next to the east? Another 200 yards.
1009. What is the name of it? I think they call it Fraser's line of reef.
1010. What will be the next, still going east? The next is the original prospector's, Neeld Bros.
1011. And further east again? The line of reef known as Stanley's Blow.
1012. And east of that? Erwin and Party's, and east again there is Thompson's.
1013. What is the course of these reefs? They run parallel, varying a little north-east.
1014. What would be the distance from Fraser's line to Neeld and Party's line? About a quarter of a mile.
1015. And from there to Stanley's Blow? That might be about a quarter of a mile, the line strikes due east.
1016. And from Stanley's Blow to Erwin and Party's? Three hundred yards, I suppose.
1017. And from Erwin and Party's to Thompson's line? As far as my judgment goes, about 300 yards.
1018. What is about the distance from Thompson's line of reef to Gorman's line of reef? I suppose it must be over a mile.
1019. Has there been any crushings from Gorman's line of reef? Yes; the first crushing was 42 tons.
1020. From what claim? Gorman's claim. It went 2 oz. 7 dwt. to the ton.
1021. Have any other claims on that line of reef reported gold? Lynch and Party have a line of reef, but whether it is the same as Gorman's line I do not know. There are so many intersecting veins.
1022. Are there any more claims on gold on that line of reef? I do not think so.
1023. To what depth has the reef on Gorman's line been tested? About 50 feet. They are deeper now.
1024. Have there been any crushings from the Two-up line of reef? I do not know.
1025. How many claims on it have reported payable gold? About four.
1026. To what depth has the reef been tested? To various depths—20, 50, and 60 feet. I think there has been a crushing from Elderbranches.
1027. What is the reputed average thickness of the reef? From 4 to 18 inches, or 2 feet.
1028. I am speaking of the reef on the Two-up line? I think it averages from 6 inches to a foot.
1029. What would be the average thickness of the reef on Gorman's? From 1 foot to 18 inches.
1030. You cannot speak from your own personal knowledge? No; I have been down and seen it, but I have not been down since they sunk the new shaft. I hear that it is now about 18 inches.
1031. Have there been any crushings from Fraser's line of reef? Yes; I believe they got 3 oz. 12 dwt. to the ton.
1032. Do you know how many tons were crushed? I do not, but I believe 20 tons were crushed.
1033. How many claims are there on gold on that line? I could not say. I am not always there. They may be getting fresh gold every week.
1034. Have there been any crushings from Neeld and Party's line of reef? No; Neeld's Prospectors' Claim has not crushed.
1035. What is the average thickness of the reef? It goes from 8 or 9 inches to 4 feet. I have been down 68 feet, and it is 4 feet wide at that depth.
1036. Have any claims along the line of reef, besides Neeld and Party's, reported gold? No. 4 is supposed to have payable gold; but they have not crushed yet, and No. 1 is on very rich gold—ironstone. Neither of them have crushed yet.
1037. What is the distance between the Prospectors' Claim and No. 4 where gold has been obtained? About 400 yards—500 yards altogether. There are three claims.
1038. Then the reef has been proved to be gold-bearing for a distance of 400 yards? Yes, to my knowledge. They have got it further on, too, but I have not seen it.
1039. Has there been any crushing from Erwin and Party's line of reef? Yes; they got 3 oz. 6 dwt. to the ton.
1040. How many claims on that line of reef have crushed? Only Erwin's.
1041. How many tons did they crush? I think 40 tons.
1042. Has gold been discovered in any other claims along the line of reef? I believe so.
1043. How far along? I think No. 3 got gold this week.
1044. At what distance? About 300 yards ahead of Erwin's.
1045. Then that line of reef has been proved for a distance of 300 yards? Yes; it has been proved to be gold bearing.
1046. What is the average thickness of the stone? They took the first crushing out 2 or 3 feet in thickness.
1047. And it yielded 3 oz. 6 dwt.? Well, at any rate, over 3 oz. I am not quite certain about the penny weights.
1048. Now coming to Thompson's line of reef? There has been no crushing there. They have a paddock of stone, but I cannot say what it will go.
1049. How many claims on that line of reef are raising stone? Only one at present.
1050. That is the most easterly line of reef? Yes. Stanley's has not been crushed yet.
1051. What is the average thickness? Last time I saw it, it was from 4 to 6 feet wide, and carrying very good gold.
1052. But there has been no crushing? No; No. 2 from there crushed, and the stone went 1 oz. 2 dwt. to the ton.
1053. Then there has been a crushing in Stanley's line of reef? Well, if you call it a line. It is north of Stanley's.
1054. To what distance along that line has gold been discovered? As far as No. 3 claim—about 300 yards along.
1055. Can you point to any other discovery? Thompson's has not crushed yet.
1056. Are there any lines of reef lying east from Thompson's? Not that I am aware of.
1057. Now we will come to the reefs which have been opened up in other directions? Then we come to the south-east—Conway and Party's.
1058. That is regarded as a separate line of reef? It is, in my opinion, and I have had some experience.

- Mr. W. Barnet.
14 April, 1894.
1059. Have any other reefs been opened up in the belt of country between Gorman's and Thompson's lines of reefs? There are reefs in every part. The intersecting veins run east and west, and some nearly north and south.
1060. The other discoveries, if I understand correctly, occur within these parallel lines? Yes; and north and south of them.
1061. At the present time it is not known whether they are continuations of those lines of reefs? It is not proved yet; but I should say they were, as near as practicable.
1062. Starting from Gorman's line, can you give me the distance north and south to the next series of reefs that have been opened up? Several other reefs have been opened up, but I could not give the names of the parties working them.
1063. How far south of Gorman's have the most westerly of these other reefs been opened up? South-west, and in the mallee here. Reefs have been opened up to the west of late, though I cannot say to what extent, because I have not been there. I hear, however, that they are getting very good gold. About three quarters of a mile south-west of Gorman's there are some who are getting very good gold.
1064. You are not in a position to say whether they are on a continuation of Gorman's reef or not? No; it is not proved yet.
1065. Taking Thompson's line and bearing south, have any discoveries been made there? Not that I am aware of. Lots of reefs have been discovered in the mallee south of Thompson's, and they run in all directions—east, west, north, and south.
1066. How far south of Thompson's? From a quarter of a mile to $1\frac{1}{2}$ mile that way.
1067. Taking a line north and south from Neeld and Party's claim, and bearing south, how far is it to the furthest reef that has been opened up? There would be seven claims.
1068. What distance would that be? Seven hundred or 800 yards.
1069. What is the distance from Neeld's to the furthest discovery bearing south? There are about six claims, and each claim averages 100 yards, so that the distance would be about 600 yards.
1070. What is the distance from Neeld's to the furthest discovery that has been made north of it? As far as I can hear, payable gold has been obtained in No. 4, and, I believe, No. 5 has also got gold.
1071. That would mean, practically, that a belt extending 900 yards has been proved? Yes; that has been proved. There are 960 feet on a prospecting claim, and there are four or five claims from Neeld's to the north.
1072. That would give an area upon which gold has been discovered of about 1 mile in an easterly and westerly direction, and something over 1,000 yards in a line bearing north and south? Yes; on that line of reef. Conway's is rather longer than that.
1073. Which way does Conway's line run? Nearly north and south, bearing a little to the east of north.
1074. I want now to ascertain the furthest discoveries that have been made north and south, taking Neeld's, say as a centre? The last southerly discovery of what is supposed to be payable gold is called the Mallee Cow, which would be about $1\frac{1}{2}$ mile from Neeld's.
1075. Can you give us the furthest discovery north? That is the last new find which, I suppose, in a direct line, would be about 7 miles.
1076. Are there any other discoveries in a northerly direction between the new find and Neeld and Party's? There are several claims working on gold. I was out looking at the new find, and I saw gold there. I have heard since that it has been opened up and looks very well.
1077. Can you give the Committee approximately the number of claims reported to be on payable gold? I should say there must be from 70 to 80 claims on payable gold.
1078. What is your opinion as to the permanency of these reefs, speaking from your experience as a miner? I think there is a great future for this field. The country is not hard, and the further you get down the better the find becomes. I have been down Neeld's and several others, and they are looking well at the bottom.
1079. What do you think the inclosing rock is? Decomposed granite.
1080. Have you had much to do with reefing? I have been reefing for thirty years.
1081. What fields have you been reefing on? I have been in Victoria, at Wood's Point, Buckland, Crooked River, and in all parts of New South Wales nearly.
1082. Have you known permanent reefs to continue for any distance in granite? Yes.
1083. Where? In Victoria, at the Evans.
1084. At what depth have the reefs been worked to on the Evans with a granite formation? The Homeward Bound was working at a depth of over 300 feet.
1085. Was the granite soft? The granite was hard there.
1086. What is the formation in which permanent reefs usually occur? Slate and granite. There are different formations in different fields; but I have never seen anything like this before in all my travels. At Grenfell the stone was a kind of porphyry, but it was hard and more like granite.
1087. Is not granite below the stratigraphical position in which reefs usually occur? Granite is supposed to be the bottom; the Silurian rock generally rides over the granite.
1088. Has this granite continued soft to any depth? In some places it has. I have been working at depths of between 200 and 300 feet.
1089. From the surface? Yes.
1090. In granite? Yes; through decomposed granite walls. One side is generally a great deal softer than the other. It is generally the seam that carries down alongside the reef that is the softest.
1091. Is it not characteristic of granite that the cleavage should be very imperfect, and the reefs vary in size? Yes; the reefs vary in size, sometimes pinching in to 2 or 3 inches, and perhaps widening out again to 3 or 4 feet. You can never get a reef to run true.
1092. What is the prospect of an alluvial discovery here, seeing that gold is being found so close to the surface? Alluvial has been got within a few miles of this place, but not close at hand. Between here and Billy's Lookout, and Buddigower, there ought to be alluvial obtained.
1093. Has any prospecting for alluvial been done in the district? Not much between here and Billy's Lookout; but a good deal has been done at Billy's Lookout. This formation carries right through for some 20 miles—from Billy's Lookout to Buddigower.
1094. Have there been any indications of drift showing that a denudation of country has taken place at any time? Yes; a slight amount of wash has been found at different places. Good prospects have been got here and there, but nothing to continue.
- 1095.

Mr.
W. Barnet.
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1095. The reefs of which you have spoken have not been tested longitudinally;—they have been picked up at different sections? Yes.
1096. Have you been down any of the claims that have had crushings? Yes.
1097. What is the extent of the stoping along the reef? Some have stoped for 20 to 30 feet. Some have driven shafts for 12 feet, or even 6 or 8 feet, and have taken out the whole body of stone from the surface right down to the bottom. In none of the claims have I seen 1 cwt. of stone on the surface; it has all been taken out and crushed.
1098. The country appears to be very regular in its gold-bearing formation? Yes. You will not see many rich specimens, but the gold is pretty regular right through.
1099. Do you not think that with the limited amount of prospecting that has been done on the field it is rather premature to speak as to its permanency yet? I think so; but I judge it to be permanent.
1100. From present indications you regard its prospects as good? I do. I do not think any miner on the field has ever seen such a surface show before, considering the intersecting veins and the main lines of reef that have been opened up.
1101. How long do you think the working of the respective reefs will maintain anything like the present population? They ought to maintain from 1,000 to 2,000 people for the next five or six years, and perhaps be better then.
1102. You are speaking of the present discoveries and the prospects of further developments? I do not think half the reefs have been found yet that will be found out towards Billy's Lookout and Buddigower.
1103. When you speak of a population of 2,000, do you mean a population of miners, or a general population? I mean that when the country is properly opened up, and the men are at work, there will be from 1,500 to 2,000 miners here.
1104. You have told us that there are seventy or eighty claims on gold? Well, I am under the mark; there must be more than that.
1105. I suppose you infer that connections will be made on the line of reef between the claims which are now getting gold? Yes.
1106. What do you think will be the number of miners maintained by these eighty claims? There are from four to eight men on each claim.
1107. Suppose there were eight men on each claim, that would afford employment for 640 people altogether? The claims are what are called eight men's ground, six men's ground, and four men's ground; but most of them on this field are eight men's ground.
1108. If gold is found along the reef between the various claims in which it is now being worked, you think the field will maintain a population of from 1,500 to 2,000 men? Yes, and probably more.
1109. Do you mean working miners, apart from the business people? Yes.
1110. Is any machinery going up here now? There are two lots of machinery being erected, and it is expected that a third lot will be put up.
1111. Do you think there will be any difficulty in obtaining water for the machinery erected here? I do not think so.
1112. Are there any catchments? There are any number of splendid catchments.
1113. Has not some discovery of water been made by sinking here? Not that I know of. I think we are about 200 feet higher than Barmedman. They get water there at a depth of 90 feet. I was working there for some years.
1114. You have been on all the rushes in New South Wales? On nearly all the rushes in New South Wales.
1115. I suppose it is a most usual thing to undertake the construction of a railway to a place directly gold has been discovered there? I think so.
1116. Do you think the prospects of this field would warrant a departure from the usual custom? I should not think they would.
1117. I suppose you are aware that it is proposed to proclaim a mining reserve of 50,000 acres; that land will be locked up from settlement? I think there is a vast amount of auriferous country for miles around,—from here to Lake Cargellico.
1118. Do you think it is necessary to lock up so much land for mining purposes? I do. I think the land ought to be thrown open to the diggers.
1119. Do you think an arrangement might be arrived at by which both agricultural and mining operations could be carried out together, giving people speedy access to the land? Well, the selectors and miners generally clash, and the miners have always found it difficult when they have found gold on private land to get permits to mine there. They have been kept off such land for three, six, and even twelve months, and perhaps after finding gold they have not been allowed to go on the land to mine for it.
1120. Assuming that the power of dealing with this matter were vested in the warden, and applications to mine upon conditionally purchased land could be granted by him, these permits could be obtained at once? Yes, and then things would be different.
1121. Do you think that that system would tend to ease the friction which now exists in the relations between miners and free selectors? Yes; if the miners could get on to the land in a week.
1122. I suppose you are aware that in the Mining on Private Lands Bill applications will have to be lodged with the warden, who will have full power to give permission immediately without reference to the Minister;—do you think that under that system agricultural and mining industries could be simultaneously developed here? I think so.
1123. Has it not generally been the case with respect to gold-fields that men who have made money on the fields have had afterwards to go to other districts owing to the land been locked up, even though they desired to settle there? So they have.
1124. If a system were introduced by which miners could get ready access to any land alienated in the vicinity of Wyalong, do you think this field would be the means of establishing an agricultural population there? I think so.
1125. Have there been any crushings on Conway's line of reef? Yes; there have been two crushings on that line of reef.
1126. Do you know what quantity of stone has been crushed? Twenty-two tons, yielding 103 oz.
1127. What is the average size of the reef? It varies from 6 inches to 1 foot.

- Mr. W. Barnet. 1128. To what extent has gold been discovered along the line of reef? For one and a half mile.
 1129. Do you think that if greater facilities were given to the miners to go upon the land here this field would be developed more than it is now? I do. Many of the men would have got good claims, and perhaps have formed homes for themselves.
 1130. Do you think that the development of the field has been retarded by administrative delay? I do.
 1131. And that the progress when those obstacles are removed will be very much greater than it has been in the past? I do.

Mr. William Bowman, miner, Wyalong, sworn, and examined:—

- Mr. W. Bowman, 1132. *Chairman.*] How long have you been at Wyalong? Since the 2nd January.
 1133. *Mr. Wall.*] Have you heard the evidence given by the previous witness? I have.
 1134. Do you agree with his evidence? I do, in every particular.
 1135. Is there any additional evidence you would like to give in reference to discoveries that have been omitted? There have been a few discoveries omitted—that is outside, to the south.
 1136. What discoveries have been made, apart from those already referred to? A discovery was made about $4\frac{1}{2}$ miles from here, in a south-easterly direction.
 1137. What is the nature of the country? Diorite.
 1138. Have they got payable gold there? They say they have; but there has been no crushing there.
 1139. Have you seen any of the stone? Yes.
 1140. What is your opinion of it? I believe that it is payable stone.
 1141. Is it in a well-defined reef? Yes; between two hard walls.
 1142. What is the width of the reef? About 2 feet 6 inches.
 1143. Have you inspected any of the reefs that have been opened up on the field? I have seen them all.
 1144. Do you consider that they are fairly well-defined reefs, and likely to be continuous? Some of them are better defined than others.
 1145. From your experience as a miner, do you regard the eight lines of reef referred to by the previous witness as likely to be payable? I think they have pretty well proved themselves so.
 1146. What is your opinion in regard to them;—do you think they are fairly well-defined reefs, and likely to be continuous, or are they merely patches which may run out? They are not patchy; but whether they are continuous is more than I can say.
 1147. Are you working in any claim here? Yes.
 1148. In what claim? The Santa Claus, on Conway's line.
 1149. Have you had a crushing? No.
 1150. Has there been any crushing on that line? Yes; for Conway and Party's claim.
 1151. What distance are you from there? Eight hundred yards.
 1152. Have you discovered gold? Yes.
 1153. Do you regard it as payable? I do.
 1154. What do you say it will crush? I reckon it will go 3 oz. to the ton; it might go more.
 1155. What is the width of the stone? It varies from 4 and 8 inches to a foot.
 1156. What depth has it been tested to? Sixty-eight feet perpendicular.
 1157. Have you only opened it up in one place? In two places.
 1158. At what distances apart? About 40 yards.
 1159. Do you regard it as the same line of reef as Conway is working on? Yes.
 1160. Are there any surface indications by which it can be traced? Yes; you can trace the surface-stone; in fact all the claims right through from Conway's have got the gold.
 1161. But there has been only one crushing from that place? There have been two crushings.
 1162. Do all between where you are and Conway's regard their discoveries as payable? I think they do.
 1163. Do you regard this field, taking it as a whole, as likely to support a large population for any length of time? As nearly as I can estimate it will support 2,000 miners.
 1164. For how long? For four or five years, but it may be longer. I can see that there is over two years of working in our claim.
 1165. Do you think there will be any difficulty in erecting machinery here to treat the stone? I do not think there will be any difficulty.
 1166. Is there a good water catchment? Yes, if we only get rain.
 1167. At present you have to take your stone to Barmedman? Yes.
 1168. That militates against the testing of the various claims? Yes.
 1169. Has there been any prospecting done in the district for alluvial? Yes, a little.
 1170. What is the general opinion with regard to the discovery of alluvial here? It has been discovered about 5 miles from here.
 1171. Has there been much drift discovered? There has been no washes yet immediately round the field, except a little ironstone wash. There has been no quartz wash.
 1172. Has any prospecting been done for surface gold? No; except at one place on Conway's line.
 1173. I suppose the development of the field would have been much greater but for the difficulty of obtaining permits? Yes.
 1174. Had the discovery been on Crown lands the place would probably have been further developed than it is? Yes; because the men would have had to work their claims or get someone to do the work for them.
 1175. *Mr. Dawson.*] Do you know of any crushings which Mr. Barnet omitted to mention? Yes; there have been several other payable crushings. There has been one from the Mallee Bull.
 1176. What number of ounces have been got from the Mallee Bull claim? Cusack and Party got an average of 2 oz. 7 dwt. from 27 tons, and the Mallee Bull claim gave an average of $1\frac{1}{2}$ oz. to six tons.
 1177. Is the stone easily got? Very easily got.
 1178. What would be the least result that would be payable? About 15 dwt.
 1179. I am speaking of the field as a whole? I do not believe that there is one claim on the field on gold where the stone is not payable.
 1180. How many do you know to be on payable gold? Between 70 and 80 claims are on payable gold.
 1181. How long have you been mining? Twenty-two years.
 1182. Whereabouts? This side of Gulgong.
 1183. *Chairman.*] Do you know the total quantity of gold produced to date? I could not tell you that.

1184. Have you any idea of the quantity of stone now at grass? I dare say there are over 600 tons on the field.

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W. Bowman.
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1185. That is payable stone? It is nearly all payable stone.

Mr. Ernest Joshiah Polkinghorne, miner, Wyalong, sworn, and examined:—

1186. *Chairman.*] For how many years have you been a miner? For eight or nine years.

1187. You have heard the evidence of Mr. Barnot and Mr. Bowman with reference to this field; do you confirm their evidence? Yes, in every particular.

Mr. E. J.
Polkinghorne.
14 April, 1894.

1188. Do you desire to add anything which they may have omitted, and which you think will be useful to the Committee in considering their report? They omitted to report the latest find, about 7 miles north from here. I believe there are 500 or 600 men there; but what they have done I cannot say. Several men who have claims there, however, speak very highly of the place, and three or four of the claims are already raising stone. They are on what is known as Gagie's Find. I would also like to add that Mr. Barnet was a little bit mixed in regard to the most westerly reefs. He put Gorman's first, and the Two-Up second; but between there is what is known as the White Reef, one of the best-defined reefs in the place.

1189. What distance is it from Gorman's? About 150 yards.

1190. That would make eight reefs? Yes.

1191. Gold-bearing stone has been obtained from that reef? Yes; they have had one crushing from what is known as O'Brien's. They got 21 oz. from 6 tons of stone, and since then they have sent away 10 tons more. This stone has been sent to the Clyde chlorination works, and treated there.

1192. Do you agree with the previous witnesses in regard to the area covered by the eight lines of reefs? Yes; if anything, they were under rather than over the mark.

1193. Do you think there has been any other inaccuracy in their evidence? No; in other respects their evidence was accurate.

1194. *Mr. Wall.*] To what depth has the White Reef been tested? The party who have already had a crushing are down about 55 feet; but we are adjoining them and down about 80 feet, and the reef looks better than it did higher up.

1195. What is the width of the reef? From 9 to 15 inches, carrying splendid walls.

1196. To what distance has the reef been tested along the line? About a quarter of a mile.

1197. Is it fairly continuous? So far as one can tell. There is similar stone in all the claims which are considered to be on the reef.

1198. How many claims are on gold? Five.

Mr. Frederick Channon, miner, Wyalong, sworn, and examined:—

1199. *Chairman.*] You heard the evidence of the two previous witnesses? Yes.

1200. Do you confirm their evidence? I do in every particular.

Mr.
F. Channon.
14 April, 1894.

1201. Have you any additional information which you can supply to the Committee? I have been acting as reporter for the *Tumut and Adelong Times* since the 15th January, and I have the original entries of crushings written down in my pocket-book.

1202. Will you read them to us? The first crushing recorded in this field was for Taylor and Party's claim.

1203. On what line of reef? It would be on the Two Up line—to the extreme south-west of the Two Up claim. They crushed 6 tons and got about 2½ oz. The next crushing is from Cassin and Party's claim, on Conway's line, who, from 12½ tons of stone, obtained 9 oz. 3 dwt. of gold. Then Neeld's No. 2 prospecting area, an east and west line, crushed 13 tons for 26 oz. 4 dwt. Conway and Party crushed 22 tons for 103 oz. Keith, who is on about the Two Up line, crushed 14½ tons, and got 35 oz. Neeld's Pioneer claim, an ironstone reef, running east and west, crushed 17 tons for 72 oz. 14 dwt. Perry's claim, which is on the Two Up line, so far as I can judge, crushed 22 tons for a result of 2 oz. 12 dwt. to the ton. Fraser's claim*, on the Two Up, or slightly to the east of it, crushed 10½ tons for 39 oz. 6 dwt. McMahon and Party, who have an east and west reef to the east of Conway's, crushed 3 tons 5 cwt. for 9 oz. 19 dwt. Gorman and Party crushed 38 tons, getting 2 oz. 4 dwt. to the ton. Hilderbrand and Party*, on the Two Up line, crushed 9 tons, getting 3 oz. 11 dwt. to the ton. McDonald and Party, of the Mallee Bull claim, crushed 6 tons 12 cwt. of surface stone or spuds, and got 1½ oz. to the ton. From a second crushing in Barmedman, Taylor and Party got 2 oz. per ton for from 15 tons. Then Davis and Party, on the Two Up line, from 10½ tons, got 2 oz. 12 dwt. to the ton. Cusack and Party, on the Mallee Bull line, for 13 tons got an average of 2 oz. 7 dwt. to the ton. Pettyfoot and Party, on Stanley's blow line of reef, crushed 40 tons for 42 oz. 12 dwt. J. King and Party, crushed 14 tons for 2 oz. 3 dwt. a ton; they are on Taylor's line. Thomas O'Brien and Party, crushed 6 tons at the Clyde Works, for 17 oz. Arthur Hassock and Party also crushed at the Clyde Works, 6 tons for 21 oz. 11 dwt. There are between 50 and 60 tons of stone at Barmedman, or on the road there—2 to 3 oz. stone.

1204. So that, in round figures, about 700 oz. of gold has been obtained from the field? Yes; and the gold has not been obtained from picked stone. A lot of headings and other rubbish has been crushed. They send everything from the surface to be crushed.

1205. *Mr. Wall.*] Can you give the Committee any idea as to the number of claims on gold? About forty or forty-one proved payable, while there are about eighty between them, which, I have no doubt, will prove payable when they have had a crushing†.

1206. Can they not discover the gold by dollying? Yes; the stone crushes well in the dolly.

1207. Other witnesses have estimated that there are about eighty claims on gold; is that estimate in your opinion excessive? Well, I reckon that there are about 120 claims on good gold, but they have not been proved. I reckon there are about forty which are certain, and about eighty others which will prove payable in the course of a week or two, after the stone has been crushed.

1208.

* NOTE (on revision): Fraser and Party and Davis and Party are all one and the same.

† NOTE (on revision): Sixteen claims have proved payable by crushing, twenty-five claims are raising stone, which is almost certain to prove payable when crushed, while there are from thirty-eight to forty more in various stages of development on the different lines, the holders of which seem confident that at a certain depth they will strike payable quartz.

- Mr. F. Channon.
14 April, 1894.
1208. Do you think there are a sufficient number of claims on gold to support a considerable population for some time to come? Yes; I believe that in the near future this will turn out to be a great agricultural district. I have travelled round a good part of the country, and I know that the soil in the mallee here is very rich. From my experience, it is second to none in New South Wales; and taking that fact into consideration, together with the existence of the gold-fields, I think you would be perfectly justified in running a line of railway to Wyalong.
1209. But the absence of the railway would not in a great measure retard the development of the field? It would not retard it, but it would greatly assist it. The fact of a railway being constructed will greatly assist development. I think the field will go ahead in spite of the want of a railway.
1210. You say that you have no doubt that a railway here would promote a very large amount of settlement? I have no doubt of it.
1211. Does it not usually happen that agricultural settlement is greatly retarded by the reservation of land for mining purposes? I think there is any amount of agricultural land besides that which it is proposed to reserve for mining purposes.
1212. It is proposed to reserve 50,000 acres here? So I heard a little while ago.
1213. And it is proposed to reserve the land for a mile on each side of the proposed railway from here to Hillston? Yes.
1214. Do you not think, from your experience as a miner, that some satisfactory arrangement must be come to whereby wardens could authorise immediate entrance upon private property? Yes.
1215. Do you think a compromise could be come to whereby it would be possible to develop agriculture and mining simultaneously? I do.
1216. Do you think that persons desiring to go in for agriculture would object to take up land upon which miners had the right to search for gold? I do not. I think such an arrangement will be beneficial to both parties.
1217. I suppose it will be of great advantage to the selectors to be close to a large mining community? It has been proved so already. The selectors have done remarkably well out of this little rush to Wyalong.
1218. Can you give the Committee any idea as to the approximate number of claims on Gorman's line of reef? Between five and six have found gold on it.
1219. You have already given the Committee some information with regard to the crushings from the Two Up line; can you give us an idea of the number of claims on gold on Fraser's line? There are five or six on that line; but it is difficult to determine which is the line, because the mallee is so dense.
1220. Then there are Neeld and Party's, Erwin and Party's, and Thompson's lines of reef; do you think they are fairly developed? Yes, and every week I visit them I find some improvement. A miner understands his business, and by questioning him you can get to know pretty correctly what he is doing. They all agree that the reef is improving as they go down, both in width and in quality.
1221. Do you think that if the selection here was resumed, it would expedite the development of the field to a great extent? Yes, and from 1,000 to 1,500 more miners would be employed.
1222. What is your opinion about the site of the new township? It is generally known as Slec's Mistake.
1223. Did you not hear that the land there is higher than this land, and that provision is to be made for the conservation of water there? It is a beautiful site for a township; but if people will not go there to live, you cannot force them to do so. The population has settled at the White Tank, and the business people have followed them there, and now no one can force them to move. I might say that I was introduced to Mr. Wade by Mr. Polkingborne. He stated his business to us, and we hired a trap and took him round to pretty well all the tanks in the district. We also took him out to a water catchment about half a mile or three quarters of a mile on Bolte's conditional lease which he acknowledged to be one of the best catchments he had seen on the field, and he informed me he would report favourably upon its resumption as a Government tank for the use of the field.
1224. How far would that be from the present camp? Half a mile or three quarters of a mile.
1225. Have you seen the water? Yes, I have waded in it.
1226. You are not using that water at the present time? The water has dried up now; but there is a natural catchment there formed by a blind creek.
1227. A dam could be made there and sufficient water conserved to supply the whole field? Yes, if the tank were large enough.
1228. Did you hear from Mr. Wade his reason for not recommending the resumption of that land? I did not know that he had not done so.
1229. Do you know that he has not recommended its resumption? No, I do not. As far as I know he may have done so. I took him out to Carter's tank, and he told me that he was trying to make arrangements with Carter to allow the miners to use his tank temporarily.
1230. But there is a legal difficulty in the way? Yes.
1231. Have you heard anything about the new rush? Yes.
1232. Can you give us any information about it? Not authentic information, because you cannot rely upon what you hear on the field. You must visit the place and make personal inspection before you can give a correct account of it. I would like to add that James Channon, of Beaconsfield, Concord, and John Plumb, of 60 King-street, have purchased a boiler and engine and have ordered rollers from the foundry for the erection of machinery on the field. They intend to establish chlorination works here.

Mr. Armand Thierman, miner, Wyalong, sworn, and examined:—

- Mr. A. Thierman.
14 April, 1894.
1233. *Chairman.*] You desire to give evidence in regard to some machinery you intend to erect on the field. Will you tell us the value of that machinery and its nature? The machinery my syndicate propose to bring here is new machinery, and negotiations are now pending to have it made at a foundry in Sydney; but I do not know which foundry is making it. One of my syndicate was up here a little while ago, and on my recommendation it was decided to bring new machinery here instead of second-class plant.
1234. Do you know what the probable cost will be? Somewhere about £1,500.
1235. Has the order been given for the machinery? I cannot tell you. I should have had word to-day we are excavating a tank for it.
1236. You have procured a site? Yes.
1237. Have you any doubt about the machinery being sent here? No, I have no doubt about it.

1238. *Mr. Wall.*] Is it crushing machinery? Yes; I recommended a 10-head battery with concentrating appliances. Mr.
A. Thierman.
1239. What sort of concentrating appliances—fulvanners? No; because the percentage of pyrites is too high. 14 April, 1894.
1240. Have you formed a syndicate for the express purpose of erecting this machinery? Yes.
1241. With a capital of £1,500? The capital of the syndicate is not limited to £1,500; the capital will be what it costs to erect the machinery.
1242. If you require more money you will call it up? Yes.
1243. You do not expect to erect machinery here with concentrators for £1,500? Yes; it can be done. Machinery is a lot cheaper now than it used to be.
1244. Are you excavating a tank? Yes; we have got about 2,000 yards out already. The tank-sinkers are still at work.
1245. Do you think that the prospects of the place are sufficient to warrant such an expenditure? Yes; as far as present indications go. The field is almost certain to be a permanent one.
1246. Your machinery is in course of manufacture at Sydney? My syndicate wrote to me asking certain questions with regard to it, and it is certain that it will be made.
1247. *Mr. Dawson.*] You are a working miner, I suppose? I have been connected with mining in New South Wales for fifteen years.
1248. Getting syndicates together to buy machinery is not being a miner. Where were you working? I was four years at Broken Hill.
1249. Were you working there? Yes, and I erected several batteries for Alfred Bennett at Peak Hill. I let out his tanks and fixed his machinery.
1250. I suppose you have got a great many promises of support when the machinery is erected? Yes; but promises do not count for much. Good machinery will carry the day here.
1251. *Mr. Wall.*] You would not require many promises for a 10-head battery? Only 80 or a 100 tons a week.

Mr. John Neeld, miner, Wyalong, sworn, and examined:—

1252. *Chairman.*] Are you one of the original prospectors? No. Mr. J. Neeld.
1253. What information can you give which you think will be of assistance to the Committee in deciding upon the matter now under their consideration? I have been about the district a good deal, and have noticed the country right through from here to what they call Rankin's Springs, a distance of 60 miles. I have also travelled from Broken Hill through Wilcannia, Cobar, Lake Cargellico, and Eubalong to Wyalong. Then I have been from Barmedman to Woolengough. Close to Wyalong and out towards Rankin's Springs there is ironbark which I think would be suitable for sleepers. 14 April, 1894.
1254. Could the sleepers be obtained at a reasonable price? Yes.
1255. Have you any idea of the price at which half-round sleepers can be obtained? No; but I know that a large quantity could be got within 15 miles from here.
1256. Have you any other information? I can give information with reference to the cost of settlement here. If the land were thrown open, people would come over from Victoria and settle here. Between Lake Cargellico and Wyalong the land is very suitable for agriculture and pastoral pursuits, and when I came here first I was so much taken with the country that I wrote to my father and brothers and advised them to come here and select.
1257. How long ago was that? A little over twelve months ago. After they selected here other people followed to see the country, and they considered that the land was as good as the Goulburn Valley land from which they had come, and that is the finest land in Victoria.
1258. But is there not a better rainfall there? No.
1259. What is the rainfall? It has been as low as 5 or 6 inches.
1260. But the average rainfall? It is something about the same as this.
1261. About 18 inches? Yes. We came as close as Wyalong simply to be near the railway, and as the full area could not be obtained, only one brother selected, the other six following to take up land as soon as it was thrown open. I have no hesitation in saying that as soon as the railway comes to Wyalong a tremendous lot of land will be taken up between here and Lake Cargellico.
1262. Do you think the land is suitable for agriculture as well as for pastoral pursuits? Yes.
1263. And if the anticipated mining population were to settle at Wyalong, the surrounding farmers would be able to supply all necessary provisions with the exception of tea and sugar? Yes.
1264. Is there anything else you would like to add? On my way to Lake Cargellico from Cobar I passed through Mount Allen, where they have just discovered good gold. There was no water in the district then, and there has been no water since; but I have no hesitation in saying that there is a good gold-field there. At Cargellico I bought some peaches and grapes, which were as good as I had ever seen before. The gentleman from whom I bought them said that he grew them on the bank of a creek from 4 or 5 miles on the other side of the Lachlan, where he has a homestead of 2,560 acres. He had a lot of sheep with him at the time, which he was taking to Mount Allen to kill. He said it was too far to send to Sydney, and, therefore, he thought it better to open a butcher's shop, and dispose of his sheep in that way.

Mr. Thomas Andrew Crowe, Editor of the *Wyalong Star*, Wyalong, sworn, and examined:—

1265. *Chairman.*] Have you any other occupation here besides that of journalist? No. Mr.
T. A. Crowe.
1266. You have heard the evidence given by the various witnesses. Do you generally confirm their opinion? Yes; as far as I have been able to judge, they are correct. 14 April, 1894.
1267. Can you give any additional information which you think would be of assistance to the Committee? When I came here three weeks ago, there were only a certain number of claims on gold; but in my visits round the field I found the number increasing, and a calculation I have made to-day, shows that it has just about doubled itself. With regard to the list of crushings given to you by Mr. Channon, I think he has given one crushing twice over, because Fraser and Party's, and Davis and Party's crushing was only one crushing.
1268. Then his return of gold is incorrect by about 30 oz.? Yes; I might also say, that to my knowledge, there are very nearly 100 tons of stone either at Barmedman or on the road there. That is as near as I can

- Mr. T. A. Crowe. can judge, by seeing the loads that have gone away; and in visiting the claims from which crushings have taken place, it seemed as if the men had gathered up all their stone, expecting gold to be in it, and sent it away. There was no evidence of any stone having been picked.
- 14 April, 1894. 1269. You think that fair average stone was sent away? I think that all the stone was sent away from claims which had crushings.
1270. So that the results obtained from further crushings will be better than those obtained hitherto? The opinion among the miners is that the returns from the next crushing will exceed those which have hitherto been obtained. I know that claims which, when I first came here, were only turning up moderate stone are now getting splendid stone. In my opinion, the quality of stone on the field is improving.
1271. Mr. Wall.] Can you give us any idea of the number of crushing plants in course of erection? I only know of Mr. Gough's; but Mr. Plumb and Mr. Channon have called for tenders for the excavation of large tanks, because they intend to erect machinery here.

Mr. Charles McHardy, Mining Registrar, Wyalong, sworn, and examined:—

- Mr. C. McHardy. 1272. Chairman.] You wish to hand in a return? Yes. The number of miners rights issued since the 19th March, is 970, in addition to a large number previously issued at Barmedman. Twenty-five business licenses have been issued, and over 100 surveyed town allotments have been conditionally registered. About fifty more have been applied for. Three hundred and twelve quartz claims have been applied for since the 19th March, and from seventy to eighty applications for permits to mine on conditionally purchased and conditionally leased land have been lodged at the Mining Registrar's Office here since that date. Previous to the 19th March, a large number of permits were applied for at Barmedman.
1273. What amount of revenue have you received since the 19th March? About £580. These figures are very nearly accurate.
1274. The information has been compiled from records in your office? Yes.

MONDAY, 16 APRIL, 1894.

[The Sectional Committee met at Spring's Hotel, Wyalong Government Township, at 9.30 a.m.]

Present:—

THE HON. FREDERICK THOMAS HUMPHERY (CHAIRMAN).

HENRY DAWSON, Esq.

WILLIAM CHANDOS WALL, Esq.

The Sectional Committee further considered the proposed Railway from Temora to Wyalong.

Mr. John Plumb, grazier, Marrickville, Sydney, sworn, and examined:—

- Mr. J. Plumb. 1275. Mr. Wall.] How long have you been on this gold-field? I first came here about two months ago; but I have not resided here continuously.
- 16 April, 1894. 1276. You have been largely interested in mining in this Colony? Yes.
1277. For how long? Over twenty-five years.
1278. Did you visit this field to engage in mining pursuits? Partly with that object, and partly to introduce machinery here if the prospects of the field would warrant it.
1279. You have had a fair opportunity of judging of the merits of the field? Yes.
1280. Do you think it likely to be a permanent field? Yes; that is my impression.
1281. Have you received sufficient encouragement to warrant you in undertaking the erection of machinery here? Yes; my friends and myself have ordered machinery, and I have let a contract since I came here for the excavation of an 8,000-yard tank.
1282. Where do you propose to excavate your tank? Just below Neeld's prospecting claim, on his conditional lease.
1283. What work will be done by the machinery you propose to erect? At first we shall erect machinery which will do about 150 tons weekly; but ultimately, as the field develops, we shall increase our plant until we can do 300 tons or more each week.
1284. You have been for some years engaged in mining in the Carcoar district? Yes; and in the western, southern, and northern districts. I have been in nearly all the districts in the Colony.
1285. Comparing the prospects of this field with those of others in which you have been interested, do you think it likely to be permanent? That is my impression, otherwise I should not have embarked my money, and that of my friends', in a venture here.
1286. What population do you think is likely to be located here for any length of time—say two or three years? I imagine that if the reefs were developed, they would employ 500 or 600 miners, and they, together with their families and tradesmen, would form a population of about 2,000.
1287. The present development of the field warrants you in coming to that conclusion? That is my impression. Of course the place is practically untried yet in many parts, and there is a prospect of further developments.
1288. It is possible that the reefs may go down 200 or 300 feet? Yes; I saw Mr. Taylor when he was down about 120 feet, and he told me that the reef was then looking as well as it looked before, and showed no signs of giving out.
1289. What line of reef is his claim on? It is in the Mallee, south of Neeld's No. 2 prospectors' claim.
1290. Mr. Dawson.] Do you know how many of the claims are on payable gold? I could not say accurately; but I should estimate that there are between twenty or thirty on really payable gold.
1291. It has been stated that between thirty and forty are on payable gold, and that eighty had struck gold? That is quite possible. I have been away from that place for some time and developments have taken place in my absence.
1292. Suppose eighty claims have struck payable gold, they would employ more than 600 men? Yes; if they went vigorously to work.
1293. Do you feel perfectly satisfied that you are justified in expending your money here? Yes.
1294. What do you think is the extent of the auriferous belt which has been opened up? From what I have been given to understand this particular belt is 2 miles in width by 5 or 6 miles in length. There

is another belt more to the west, out towards Lang's selection, which I do not know much about. That, I think, is distinct from this. Mr. J. Plumb.

16 April, 1894.

1295. The 2-mile by 5-mile belt takes in Conway's line of reef? Yes.

1296. *Chairman.*] In addition to the machinery you have already ordered, is it your intention to establish chlorination works here? Yes; if the prospects of the field warrant it, and we get sufficient patronage. I think they will be necessary soon because of the nature of the ore here. Some of it is pyrites will have to be treated in that way here or else they will have to send their concentrates to Sydney.

1297. In round figures, what do you propose spending here? The cost of complete chlorination works will be about £5,000; we should be working very economically to put them up at that.

1298. Their immediate expenditure will be how much? From £2,000 to £2,500.

1299. *Mr. Dawson.*] Do you think it would be advisable to construct a light line of railway from Temora here? I think so with the ultimate object of extending it to the river. I think it would be much cheaper than the cost of a good road.

1300. Have you made an offer to construct such a line? Yes; after my first visit to this field, I wrote a letter to a friend of mine, and asked him submit to the Government a proposal to construct a railway from Temora to Wyalong, which should be a sort of object lesson to people in other parts of the country, that is to say, we should use the present roadway, and old Government rails and fastenings, putting down rough sleepers. I estimated the distance at 40 miles, and proposed that the Government should allow us to use some of the light tram motors. With the consent of a firm of contractors, I offered to complete such a line within three months, at £500 per mile, using box and ironbark sleepers, rough split and flattened on the top and bottom.

1301. Were the contractors *bonâ fide* men? Yes; and they were quite prepared to enter into any reasonable guarantee or bond.

1302. *Chairman.*] Would the formation of the permanent-way be undertaken by yourself and friends? Yes; the permanent-way would have no ballast, and in some places there would be no formation. The sleepers would be laid flat on the earth.

1303. What kind of sleepers? Sleepers such as I have just described, 8 or 9 inches wide, and the regulation length.

1304. Do you not think that in wet weather the sleepers would sink? Possibly they might; but they could be raised a little above the surrounding country. The ballast would sink a little. I think it would be possible to use steel rails, which are now of no value at all. They would be good enough for carrying light tram-motors, running at a speed of 8 or 10 miles an hour, and only in the daytime.

1305. Do you think you could ensure the use of hardwood sleepers all through? Yes; from what I can learn from people in the district. I was speaking to Mr. McGregor, of Merringanowrie, and he told me that he has box on his property which was put up forty years ago, showing that it is durable wood.

1306. Do you think it is sufficiently durable for sleepers? I think so.

1307. In the event of your offer being accepted, what would you expect from the Government in the way of materials? Rails, fastenings, and everything necessary for the line, except labour and sleepers.

1308. Would you find all the necessary labour? Yes. Of course the Government would have to put up station buildings, if they were required.

1309. But you would find all the necessary labour, if the Government contributed the material you have described? Yes; they would complete the survey, and then would merely have to supervise the construction of the line.

1310. *Mr. Wall.*] What would be the gauge? The ordinary gauge.

1311. Do you not think it would be risky to run trucks over a line laid on the earth? It might if the trucks were heavy; but why not run light trucks?

1312. That would necessitate the construction of special trucks? I think that in this dry country, where it is only at odd times that there is heavy and continuous rain, sleepers laid at a distance of from 18 to 20 inches from centre to centre would hardly sink.

1313. Can you give us any information regarding the cost of a light line such as the Government have constructed to Cobar, and the extent to which such a line would meet the requirements of this district? I have not considered the matter, though I have read what those lines have cost. They, however, are ballasted, and are much heavier and more permanent than the line I suggest would be.

1314. Do you know of any place, either here or elsewhere, where the Government have constructed railways such as you refer to? I have not heard of the Government constructing such railways; but in America sleepers are laid on the ground, and the same thing is done here in connection with mine tramways. Of course the rolling stock used is not so heavy; but they serve the purpose for a time.

1315. *Chairman.*] You would regard this as a temporary, not as a permanent line? Not as a permanent line. If it lasted for five or ten years, it would have served its purpose in opening up the country, and a permanent line could afterwards be put down more cheaply, because the sleepers and the material intended for it could be carried on the temporary line.

1316. *Mr. Wall.*] Is it not a new thing to propose to construct a railway to a place immediately gold is found there? Yes; but seeing that the land both here and further on is good land, I think the line has been proposed more with a view to open up the country at less cost than that of a macadamised road.

1317. Have you any idea of the amount of agricultural land available close to existing railways? I could not say what the extent would be.

1318. Can you tell the Committee whether the construction of the Temora line has increased the settlement round about Temora? I have been told by residents in the place that it has increased the acreage under cultivation.

1319. Then you think that if the construction of a line to the Lachlan is justifiable, the development of this field will be sufficient to warrant its construction as far as Wyalong as a matter of urgency? If it were to meet the requirements of Wyalong only, I should say no; but with the ultimate object of making a national line to the Lachlan, I should say, "Yes; go on with the work."

1320. You think the development of Wyalong a strong justification for the immediate construction of this section? Yes.

Mr. Robert Cassin, miner, Wyalong, sworn, and examined:—

- Mr. R. Cassin. 1321. *Mr. Wall.*] How long have you been on the field? I came here the day on which the gold was reported—the 18th December last.
- 16 April, 1894. 1322. You have been engaged in mining pursuits in this district for some time? Yes, for ten or eleven years.
1323. Have you any interest at Wyalong? Yes, I have an interest in one mine.
1324. You have a general knowledge of the field and its development? Yes.
1325. What is your opinion with regard to its permanency? I think, from the number of blocks of stone that have been found, and the extent to which the reefs have been proved, that this will be a good wages field for perhaps 1,000 men for five or six years.
1326. Can you say anything as to the cost or difficulty of getting supplies from Temora;—what is the cost of cartage at present? About £2 per ton. It has been as high as £3 10s. per ton; but when the roads are good you can get your stuff carted for £2 a ton.
1327. Do you think there will be any difficulty in getting supplies if the wet season sets in? I think there will be considerable difficulty; but it is possible that supplies would only be stopped for a fortnight or three weeks, and even within that period it might be possible to bring up something by the road.
1328. Have you any knowledge of the country in the direction of Cargellico and Hillston? Yes; I travelled over that country when working at my trade as a saddler after leaving Wagga Wagga.
1329. Do you regard the proposed extension of the railway from Temora to Hillston as likely to open up a large extent of country? My knowledge of the settlement between here and Yalgogrin is not recent. I knew the country a number of years ago, when no settlement had taken place there.
1330. But there has been a considerable amount of settlement since then? Yes; but I have not been there.
1331. Then you cannot say much as to the value of this line, regarding it as part of an extension from Temora to Hillston? Only from the communications which I have received from people along the route, urging its construction in order that they may be able to use their land.
1332. Do you regard the land which it will traverse as good agricultural land, which would support a large population if the railway were made? There are large belts of land on either route which could be put to agricultural use; but the line would serve a larger population if taken *via* Cargellico, and would also go through better land. Then, too, at Cargellico there is water which might be used for irrigation.
1333. You are managing some crushing machinery at Barmedman? Yes.
1334. Several crushings have been put through there? Yes.
1335. You heard evidence given on Saturday with regard to the results obtained? Yes.
1336. Were those statements correct? There were only fractional differences; but I will furnish the Committee with the correct returns within a few days, showing the weight of stone, and the amalgam retorted, and afterwards smelted.
1337. Do you regard the Wyalong stone, crushed at Barmedman, as better than anything that has been opened up in the district before? Yes. The development of this field will employ more people than Barmedman and Temora put together. I think there is a better mine in Barmedman than any of those here; but there we have to contend with water, and it will take a considerable amount of capital to develop it.
1338. You look upon the average yield from Wyalong stone as satisfactory? It is very satisfactory. I made a calculation in connection with the various crushings, and I found that sometimes the men earn £15 a week for the time they work. In only two instances did they not earn wages. As a rule, they earn from £2 10s. to £8 and £15 a week.
1339. Are the different claims in which gold has been discovered regarded as generally satisfactory? The miners express themselves as very well satisfied with the returns which they have obtained.
1340. *Chairman.*] Can you give us any information in regard to the coaching traffic between Temora and Wyalong? Before the rush, it was not worth considering, because the people living about here use their own vehicles, and in fact, there was no regular coach, which could be depended upon. There was a mail coach once or twice a week; but it started at an hour which suited nobody.
1341. And since the rush? Since the rush there has been such a number of coaches running that I could give you no idea of the traffic.
1342. What was the fare before the rush? There was no stated sum; but as it was 7s. 6d. from Temora to Barmedman, I should think you could have got here for 15s.
1343. What is the fare now? It was £1; but I believe it has now come down to 10s.
1344. Is the traffic very great? Yes; it is considerable.
1345. Are there many teams along the road? Yes; I should think there are as many as forty or fifty on the road.
1346. Do you wish to add anything to the evidence you have already given? Yes. Several witnesses were asked if they thought the Government were justified in making mining reserves here, and if such reserves were detrimental to settlement. With regard to that matter, I should like to say that I think it was very wise to make the reserve which has been referred to, because, had it not been made, there would have been a rush of selectors here to pick out the eyes of the place, some of whom would probably have taken up the full area. In my opinion, 2,560 acres is too much to give to a man near a population such as there is here.
1347. *Mr. Wall.*] I asked if the agricultural interest would be affected by reserving 50,000 acres here, and if some system might not be adopted whereby agriculture and mining could be simultaneously developed? When the Department has had time to look round, they can revoke such reserves as are suitable for agriculture. That would tend to develop the field more profitably in the long run.
1348. I suppose you are aware that when once these reserves are created, it often takes years before they are thrown open again? Yes; but at Barmedman we succeeded in getting some of them thrown open. There are others that will be thrown open as soon as the requirements of the Railway Department are understood.
1349. How long is it since these reserves were first proclaimed? When Barmedman was first a gold-field; but some of them were revoked three years afterwards, and were sold as special areas.
1350. How long is it since Barmedman came into existence? Ten or eleven years.
1351. And some of these reserves are only about to be opened now? They have all been surveyed; but, since it was not certain what route the railway would take, they have not yet been thrown open.

1352. Were any of the reserves thrown open until the greater part of the population left the field? No; the diggers would have protested against the land being thrown open, because the feeling of the mining population would have been that land was being closed on which alluvial mining existed. The land, however, would not have been taken up with a view to obtaining compensation for its resumption, but because there was a population close at hand. Mr. R. Cassin.
16 April, 1894.

1353. Do you think that the area allowed to a man should be smaller in the vicinity of population? Yes; or alongside a railway. Two thousand five hundred acres is too much in such a case.

1354. Do you know of any instance where, when large blocks of land in the vicinity of a gold-field have been locked up in reserves, they have been thrown open again before the mining population left the field? I have had no experience in that respect.

1355. I suppose you are aware that something like 100,000 acres were locked up at Gulgong? Yes.

1356. And that hundreds of miners who had made sufficient money on that field to enable them to become independent settlers had to leave the district because they could get no land there? I believe so; but I think some system could be adopted by the Department which would enable men to go upon the land and settle on it, and allow others to mine under it.

1357. If the simultaneous development of agriculture and mining could be allowed to take place, that would have a greater tendency to establish settlement than the present system? I do not hold with locking up the land for a long time, and I do not think that mining and agriculture are antagonistic industries; but still I am of opinion that it would have been unwise not to make these reserves. I have been speaking to the settlers in the district, and I find that they are anxious for a market to be provided for them, so that they may go in for farming. There is a very fair class of selectors here; the men are not land jobbers. I formed that opinion from hearing them speak, and from the fact that since the extension of the line to Temora they have made a marked effort to clear land and get ready for increasing their income by means of farming instead of continuing to depend solely upon the raising of sheep, which most of them find does not bring in enough for them to live on and to pay their instalments.

1358. *Chairman.*] Are you the owner of much land round Barmedman? No, I have a very nice selection; but the Bank has the best hold of it.

1359. What is the area of your selection? One thousand two hundred and ten acres.

1360. Had you that selection at the time of the projection of the Temora railway? Yes; I had it cleared and fenced and subdivided, and I built houses and put a garden, orchards and dams upon it. In the first year after the railway came to Temora, I cleared 40 acres; but I found that I was likely to lose it, and therefore I did not spend any more upon it.

1361. Was that land suitable for the production of other crops besides wheat? I grew very nice fruit on it, and I had every prospect of making a good orchard there. An adjoining neighbour grows very nice oranges, grapes, and other fruit of a similar description.

1362. Can you say whether the land beyond Temora has been taken up for *bonâ fide* settlement, or merely for speculative purposes? I only know two men who have sold out, except those whom the Banks have compelled to sell. There was only one land jobber who came to Barmedman, and he did better than the genuine men, I think. I do not know a man in the district who is considered to be a dummy.

1363. You know that the land has been taken up in very large areas? Yes; in blocks of 2,560 acres, and in some cases where men have selected for their sons and daughters who are not of age, the holdings are as large as 7,000 or 8,000 acres.

1364. Do you think the land has been selected so that people may settle upon it, or has it merely been taken up so that it may be sold to the pastoral lessee? Except in one case, I think, men have taken it up in order to make homes and keep their families around them, and, of course, they get as much land as they can. The danger is, however, that they may not be able to work it profitably, and that the Banks will then come in.

1365. Do you think they have taken up more land than they can possibly use? I am certain of it. Their capital is exhausted by the time they have got their fencing and scrubbing done, and they cannot complete their improvements without borrowing. If they could do without borrowing, they would be able to make good homes for themselves; but being short of capital, when their instalments have to be paid, at the end of three years, they have not got the money to stock with, and are thus placed at a disadvantage. They probably buy their sheep on bills, and then, in order to meet these bills, have to sell the sheep again at what is, in a measure, a forced sale, because they have to look for a customer within a given time.

1366. As soon as their instalments become due, men who have taken up large holdings find themselves in such a crippled condition that they are obliged to sell at the first opportunity? Yes; they cannot pay their instalments from wool. The payment of 1s. per acre, if a good crop can be put in, is nothing; but when the money has to be paid out of wool, the selectors are not able to do it. They might get through if they farmed a good part of their land.

1367. And is it your opinion that the land in this district should not be thrown open in such large areas? I think that people should either not be compelled to pay their instalments until a railway is brought within a given distance of them, or that they should be compelled to remain leaseholders. In my opinion 2,500 acres is enough for a family, if the children are not of age. As a matter of fact, when a large family selection is taken up, the head of the family becomes the owner of it.

1368. *Mr. Wall.*] Seeing that the people who came to the district as pioneers were compelled to turn their attentions to pastoral pursuits, and were only allowed to take up 2,560 acres, it would be possible for a man, if a railway were made, to get his living on a smaller area? I would prevent men from taking up more than 2,560 acres; but I would not compel them to pay their instalments until a railway had been brought somewhere near them.

1369. Do you think that if the Government were to clear the land alongside the railway, and subdivide it, they would have any difficulty in letting it to farmers who would be willing to pay rent for it? I do not think there would be the slightest difficulty about that.

1370. You attribute the failure of the existing settlement to the want of capital;—if people could obtain a lease of the land alongside the railway, so that they would only have to put their labour into it, and would not require capital, do you think there would be any difficulty in getting tenants for it? Not the slightest.

[The Sectional Committee met at the Court-house, Temora, at 2.30 p.m.]

Present:—

The Hon. FREDERICK THOMAS HUMPHERY (CHAIRMAN).

HENRY DAWSON, Esq.

WILLIAM CHANDOS WALL, Esq.

The Sectional Committee further considered the proposed railway from Temora to Wyalong.

Mr. John Richardson, relieving station-master, Temora, sworn, and examined:—

Mr. J.
Richardson.
16 April, 1894

1371. *Chairman.*] How long have you been here? Thirteen days.
1372. Have you had access to the railway returns at Temora from the time of the opening of the line? Yes.
1373. Are you in a position to give the Committee information as to the volume of traffic here? I received a telegram from the Committee this morning, asking me to prepare information in regard to goods and passenger traffic, but as I have not had very much time the returns are only approximately correct.
1374. What would the difference be—a few pounds one way or another? Yes; the difference would not be more than £5 at the outside.
1375. Will you hand in your returns? The revenue received here since the opening of the railway has been £4,130.
1376. Outwards and inwards included? Yes.
1377. How many tons does that represent? Four thousand seven hundred and sixty-four tons. The outward traffic has been very heavy, but we get no revenue from that, because it is collected at other places.
1378. The amount you have stated was received at this end? Yes; it includes both passenger and goods takings. What we send from here is collected at Sydney or Goulburn, or at other places, and what they send here we collect at Temora.
1379. *Mr. Wall.*] Are we to understand that £4,130 are the earnings of the line between Cootamundra and Temora, or is it the amount collected upon goods conveyed from other places to this station? That is it.
1380. Can you give the Committee any idea of the value of the traffic on this branch line alone? No, I cannot; but you could get it from the Commissioners.
1381. What has been the classification of the tonnage? It would take a week to get out a return classifying the tonnage; but in Sydney they make out returns of what they call sectional expenditure, so there would be very little difficulty in getting the information from the Commissioners.
1382. The earnings on this section of line would be much greater from here to Sydney than from Cootamundra here, because on the up journey they would represent a contribution to the main line? Yes.
1383. *Chairman.*] What is the charge between Temora and Cootamundra? Third class, £1 3s. 7d.; second class, 17s. 8d.; first class, 14s. 7d.
1384. Under what head would the bulk of the traffic come? It would be second and third class.
1385. If over 4,000 tons of goods passed between Temora and Cootamundra, the earnings upon this branch line would probably exceed £4,000 for goods alone? Yes.
1386. Has the coaching traffic been heavy? It has been very heavy during the last six weeks—since the rush to Wyalong broke out.
1387. Can you say what it was before the Wyalong rush? Well, in January, the number of passengers from Cootamundra to Temora was 190, and from Temora to Cootamundra 187. In February, it was 1,400 from Cootamundra and 217 from Temora; in March, it was 1,250 from Cootamundra and 303 from Temora, and this month we have had 450 from Cootamundra and 250 from Temora. Great numbers of people are returning from the rush.
1388. *Mr. Wall.*] Can you give us any information in regard to the increase or decrease of goods traffic? The revenue for January was £582 16s. 11d.
1389. From goods? No, the total revenue.
1390. Can you give us the tonnage for the respective months? Yes; the inward tonnage in January was 152 tons, in February, 195 tons, in March, 555 tons, and in April 345 tons.
1391. *Mr. Dawson.*] Does that include parcels and everything? No.
1392. *Mr. Wall.*] So that the inwards traffic was nearly four times as great in March as in January? Yes.
1393. Is not January considered rather a busy month? No, December is considered to be a busy month, and January is supposed to be a quiet month, after the rush of Christmas traffic.
1394. What is the rate for third class goods from Sydney to Temora? £7 5s. a ton.
1395. And from Temora to Sydney? It is very much higher than that; but I do not know exactly what it is.
1396. Has there been a gradual increase in the traffic of the line since it was opened? Yes.
1397. I suppose that would be accounted for mainly by the fact that the cereal crops came in at the end of the year? It would be attributable largely to that.
1398. Can you say whether there has been an increase in general merchandise? It has been about the same all through.
1399. Has much grain been sent from Temora since the railway was opened? Yes. I was given to understand by my predecessor that they had something like 30,000 bags of grain stored here awaiting the opening of the line.
1400. It is reported that a large quantity of grain is stored here now awaiting a rise in prices; is there any truth in that rumour? I cannot give you any information about that.

Mr. John Maurice Foley, Post and Telegraph Master, Temora, sworn, and examined:—

Mr.
J. M. Foley.
16 April, 1894

1401. *Chairman.*] How long have you been in the district? I have been connected with the office here since 1880.
1402. You have watched the growth of the district since then? Yes; it has been very great.
1403. Will you give us what information you can in regard to the Post and Telegraph Office returns here? I have only got them from August last.

1404.

1404. That was the last month before the opening of the railway? Yes; the sale of postage stamps has increased to the extent of £50, being £80 this month as against £30 in August. There has been a steady increase in the returns, and the telegraph revenue has increased to the extent of £20 a month. The Savings Bank business has also greatly increased; but I could not say from memory to what extent. The amount of revenue transmitted to Sydney between the 11th August, 1893, and the 16th April, 1894, was £5,907, which greatly exceeded the returns of the previous six months. We receive and despatch about 800 letters more a month now than we did before the railway was opened, and we now transmit nearly 400 telegrams a month, or 200 a month more than we used to transmit.

Mr.
J. M. Foley.
16 April, 1894.

1405. Has the population of Temora increased? Yes; we can tell that in the increase in Post Office business.

1406. *Mr. Wall.*] Can you tell us the amount of revenue you received in August last? No, I cannot.

1407. You have been giving us the totals to date? Yes.

1408. Has not the rush to Wyalong greatly helped to increase the revenue of your Department? Yes.

1409. Can you give us a return comparing the business of January with the business of August, and showing the increase which has come about since the construction of the railway? No, I cannot.

Mr. John Joseph Buckley, Sergeant in charge of the Temora police station, sworn, and examined:--

1410. *Chairman.*] How long have you been at Temora? About ten years.

1411. Do you collect the statistics here? Yes, for the Temora portion of the Young electoral district.

Mr.
J. J. Buckley.
16 April, 1894.

1412. Can you speak as to the progress of the district during the past four or five years? It has progressed materially. Last year the population of Temora proper was about 1,700, while the year before it was 1,500.

1413. Over what area does your district extend? We are very near the extreme boundary of the Young electorate, so that the district extends a good way in one direction, and not far in the other. The population of the district this year is 2,326, made up by 2,291 Europeans and 35 Chinamen.

1414. Can you speak as to the population that would be fairly served by the railway? There has been considerable increase in the population.

1415. An increase of how much per cent.? I should say an increase of from 8 to 10 per cent.

1416. Since the construction of the railway was commenced? Within the last three years.

1417. *Mr. Dawson.*] Is the population of the district increasing by reason of fresh arrivals, or because children are born here? In both ways. Last year the railway works were in full swing, and that brought a large number of people to the town; but, notwithstanding the fact that that railway is now completed, the statistics show that the population of the town has permanently increased.

1418. Can you speak as to the number of stock raised in the district, and the area under cultivation? Yes; both have increased considerably. Farming pursuits have increased fully 10 per cent.

1419. Then the district has materially progressed since the construction of the railway was determined upon? The railway gave a great impetus to farming operations in the district. If I said that they had increased 15 per cent. I would be nearer the mark.

1420. Can you add anything to your evidence which you think would be useful to the Committee in considering this proposal? I think the construction of the proposed railway would open up a tract of good agricultural country out towards Wyalong and Condobolin. I have not been out further than Woolengough. It seems all good agricultural and pastoral land out there, except for a few belts of mallee; but even that is good country when cleared.

1421. You have not been on to the Lachlan? No.

1422. *Mr. Wall.*] Have you any returns showing the area under cultivation this year and last? No; all the statistics we collect we send to Sydney. We do not keep any record here.

1423. Have you collected any statistics in regard to the quantity of wheat produced this year or last? Yes; but they have been sent to Sydney.

1424. Has there been an increase in the production? Yes.

1425. Has there been any tendency on the part of persons holding large areas of land before the construction of the railways, to bring them under cultivation? Yes.

1426. Can you mention any special case? Yes; there is Prior's, at Sebastapol. I think they had 500 acres under cultivation last year.

1427. How much did they add on to what they had before? They must have added 100 or 150 acres to their farm, and there are several such instances. At almost every season of the year they are extending their agricultural area.

1428. Was the same sort of thing going on prior to the construction of the railway? Yes, but not in such a marked degree. A tremendous lot of wheat was brought to the railway station last year; but when I came to Temora, ten years ago, there was very little agriculture.

1429. Do you know whether there is much land available for agriculture here? Yes; there is no dearth of land.

1430. *Mr. Dawson.*] Is this likely to be a fruit-producing place? Yes.

1431. Is it a fact that the grapes can be grown here to perfection? To great perfection.

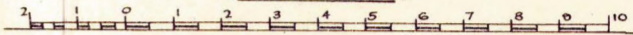
1432. And figs? Yes; and they grow beautiful apples here.

[4 plans.]

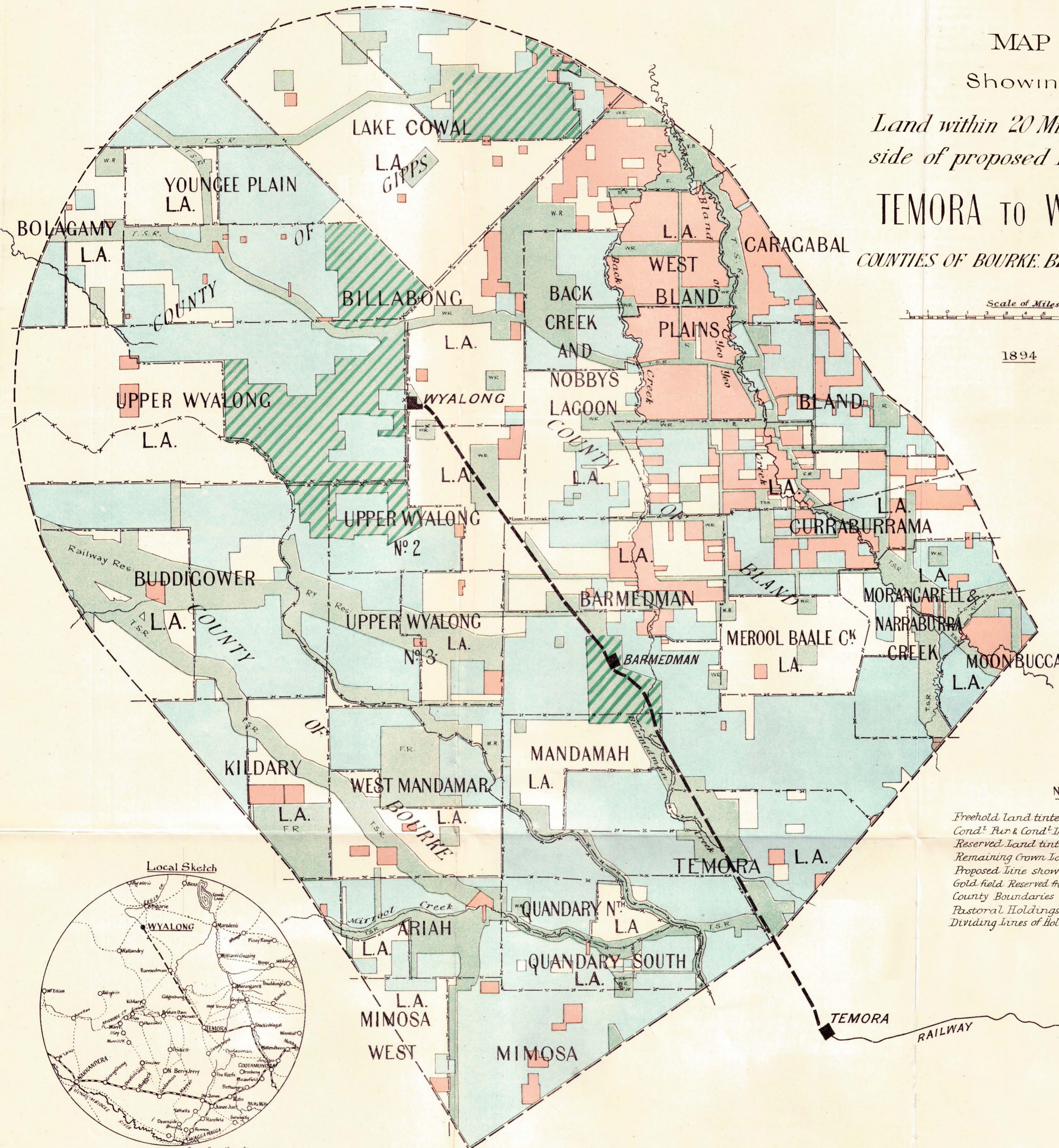
MAP
Showing

Land within 20 Miles on each side of proposed Railway from
TEMORA TO WYALONG
COUNTIES OF BOURKE, BLAND, AND GIPPS

Scale of Miles



1894



NOTES.

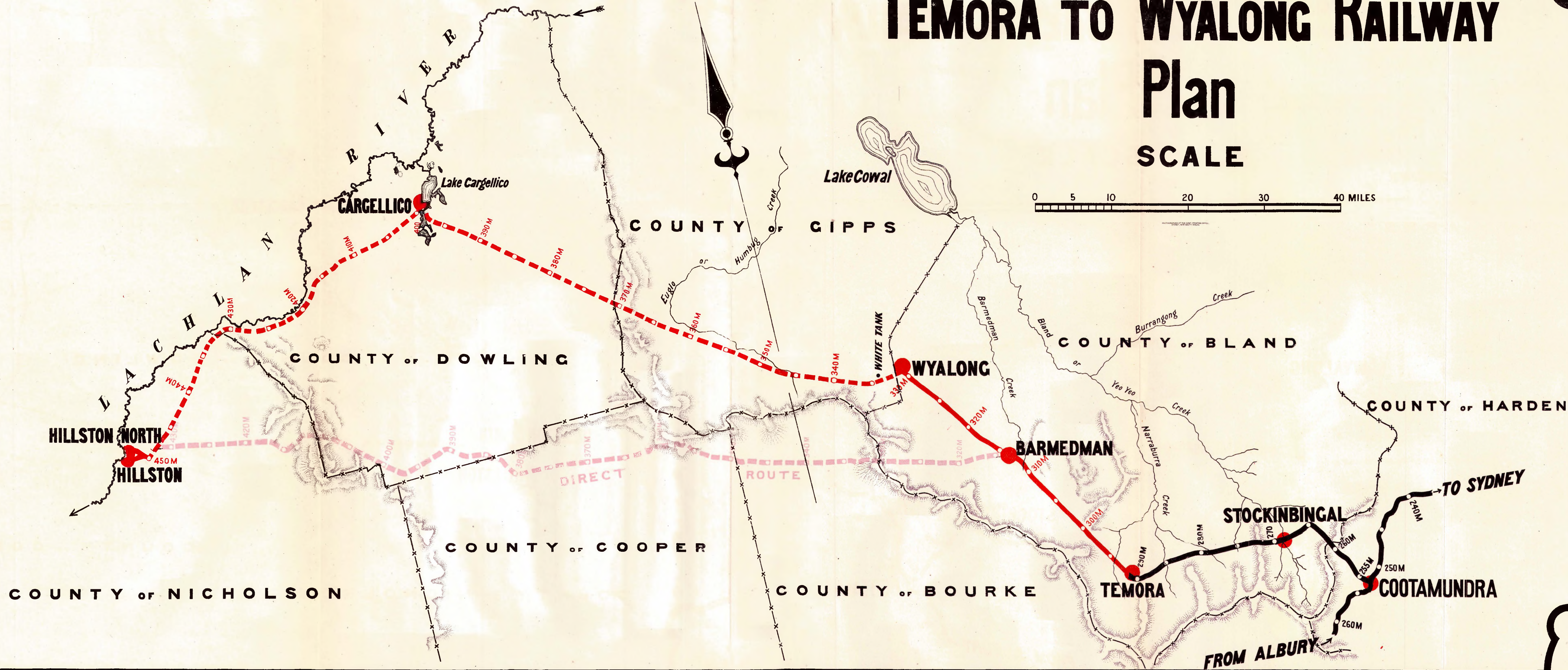
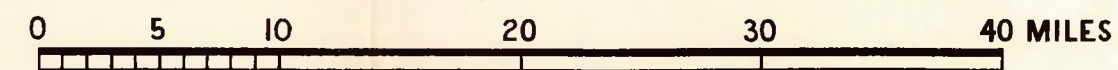
Freehold land tinted red thus	112,750 Acres
Cond ^d Pur & Cond ^d Leases tinted blue	447,120 "
Reserved Land tinted Green	260,750 "
Remaining Crown Land uncolored	451,100 "
Proposed Line shown thus	— — — — —
Gold-field Reserved from Con. Pur. shown by Green Hatching	— — — — —
County Boundaries shown thus	— x — x — x —
Pastoral Holdings " "	— x — x — x —
Dividing lines of Holdings thus	— x — x — x —

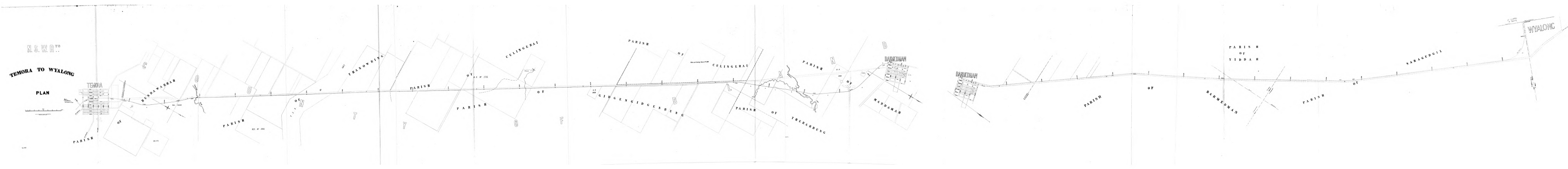


Scale of Miles

TEMORA TO WYALONG RAILWAY Plan

SCALE





TEMORA TO WYALONG
RAILWAY
SECTION

PART I

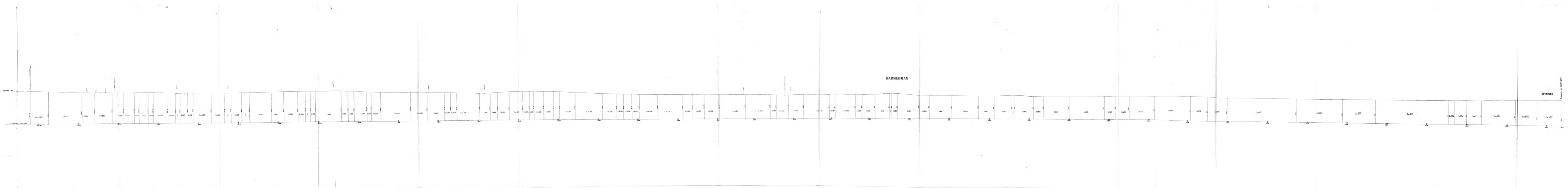
Scale
1:10000

Fig. 100

BARMEDMAN

WYALONG

Scale
1:10000



1894.

NEW SOUTH WALES.

SIXTH ANNUAL REPORT

OF THE

METROPOLITAN BOARD OF WATER SUPPLY
AND SEWERAGE,

BEING FOR THE YEAR

1893.

Presented to Parliament by Command.

SYDNEY: CHARLES POTTER, GOVERNMENT PRINTER, PHILLIP STREET.

1894.

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1894.

NEW SOUTH WALES.

METROPOLITAN BOARD OF WATER SUPPLY AND SEWERAGE.

(ANNUAL REPORT FOR 1893.)

Presented to Parliament by Command.

To the Honorable the Secretary for Public Works,—

Sir,

21 February, 1894.

The Board of Water Supply and Sewerage have the honor to submit to you their Sixth Annual Report.

WATER.

2. The average consumption of water per estimated head of population supplied is the same as last year, viz., 32·12 gallons per day, the average daily supply being 12,533,652 gallons, and the estimated population supplied 390,182. There were 2,362 houses connected during the year, bringing the total number supplied to 81,288.

3. Owing to want of funds only about 16 miles of extensions were made, 8 screw-down hydrants and 343 ball hydrants fixed. A little over 26 miles of pipes were cleaned. The total length of pipes now laid and under the jurisdiction of the Board is 745½ miles, and 1,451 screw-down hydrants and 14,232 ball hydrants.

4. Prospect reservoir has been kept full throughout the year, and solely from water from the Cataract River, the valve on the Nepean having been kept closed.

5. Some necessary repairs to the lining of the canal, below Prospect reservoir, were carried out during the year, reducing the estimated leakage from 3½ millions of gallons per week to about 300,000; this work is still being carried on. The eight large wrought-iron pipe aqueducts above the reservoir were scraped and painted, both inside and out, for the first time since they were erected some twelve years ago.

6. Towards the latter end of the year No. 3 Waverley engine was erected at Crown-street, and has worked most satisfactorily. This engine was designed and constructed by Mort's Dock and Engineering Co. (Ltd.), and its duty is to raise 100,000 gallons per hour to a height of 219 feet, and a further duty of raising 40,000 gallons per hour to a height of 239 feet. This latter duty is for the purpose

of raising the water to a tank above the Waverley reservoir, so as to supply the buildings that are situated in the immediate vicinity at about the level of the reservoir.

7. Over 50 per cent. of the water brought into the city has to be pumped to the various reservoirs, which was done at a reduction on cost, as compared with the previous year, of 32 per cent. The cost of raising 1,000 gallons 100 ft. high was $\cdot 324$ of a penny, as against $\cdot 480$ of a penny in 1892, or, in other words, from £2 per million gallons to £1 7s. This means that 3,086 gallons were raised 100 feet high for one penny. The amount pumped was 2,360 millions; therefore any reduction per million means a large saving; for instance, the cost in 1890 was £3 2s. 6d. per million, or £1 15s. 6d. per million more than 1893, which means a saving on the present pumping cost, as compared with 1890, of no less a sum than £4,189. No further proof is required of the wisdom of the Board's actions in sweeping away the old engines and small rising mains and replacing them with the present engines and adequate rising mains.

8. The Board are unable to carry out their scheme in its entirety for reducing the pumping cost till a large reservoir is built in the position approved of by the Public Works Committee, viz., in the Centennial Park, between Queen-street and Ocean-street. This would enable the pumping to be carried on continuously and not intermittently; at present the pumps have to stop every few hours on account of the smallness of the reservoirs. The saving in the pumping cost would be no small factor in paying the interest on the outlay, to say nothing of the other strong reasons which induced the Board to recommend, and the Public Works Committee to approve, of its construction. It is to be hoped that this work will be submitted to, and approved by, Parliament at an early date, and a vote taken for carrying out the work.

9. During the year the Board decided to introduce a system of renting meters of one approved pattern. This was forced on the Board on account of the multiplicity of different kinds of meters that were in use and continually being added to year by year, the repairs to which necessitated the Board keeping a stock of all parts of the different makes and sizes of meters, which meant a great expense to the consumer. It was decided that no other make of meters of less size than 2 inches should be allowed to be affixed to services supplied with water by the Board after 1st March, 1894, but those obtained from the Board either by purchase or by rental. The following rental was decided on:— $\frac{1}{2}$ -in. 7s. per annum, $\frac{3}{4}$ -in. 9s., 1-in. 11s., $1\frac{1}{4}$ -in. 13s., and $1\frac{1}{2}$ -in. 15s., the rental covering all charges, including use of meter, removing and reconnecting, testing, and repairs, under certain conditions. There is no doubt that this system will be largely availed of by the public.

10. About 40,000,000 of gallons of water were supplied free to the various hospitals and charitable institutions, which quantity is about the same as the previous year.

11. The duplicate 48-inch trunk main was completed by the Harbours and Rivers Department and transferred to the Board, thus making the city practically safe from water famine by any accident to the main supply, and releasing the Board from any need of the old Botany supply.

12. Consequent on this the Board decided to lease the right to take water from the Botany ponds and the use of the adjacent lands for wool-washing or other innocuous trades, and having divided all available land into four allotments, called
for

for tenders. One lot only was leased, at £404 per annum, as the tenders received for the others did not come up to the Board's valuations; these will shortly be readvertised. The lessee only has a right to draw water from the ponds, ample provision being made to prevent fouling the ponds.

13. During the year the water supply works of the town of Richmond were completed by the Public Works Department, but as this work had been started by that Department since this Board was constituted, there was no legal provision of the transfer of same to the Board. The Board were requested to manage this work till legal powers have been obtained to vest same in the Board. To this the Board consented, and have managed same accordingly.

SEWERAGE.

14. There were 7.43 miles of sewers and storm-water drains transferred to the Board, which had been constructed by the Government. The length of sewers laid by the Board was only 4.35 miles, the want of funds limiting the Board's operations. The total length of sewers now under the jurisdiction of the Board is 182.34 miles, of which length 81.43 miles are ventilated. The total length of storm-water drains now under the jurisdiction of the Board is 9.1 miles. The number of houses connected during the year was 4,660, making a total of 36,062 houses connected, and an estimated population served of 173,097.

15. Towards the latter part of the year contracts were let for 22½ miles of sewers in the districts of Glebe, Waverley, Randwick, Petersham, and Marrickville.

16. Repairs to the sewers of the old City system were continued, and some of the lengths were found to be in very bad condition, notably those old sewers in Loftus-street, Tank Stream, north of Martin-place, Bridge-street, and Castlereagh-street; the engineer reports that in some instances the invert and crown had to be entirely removed. A portion of the arch of a sewer in Woolloomooloo gave way and was at once repaired. Manholes were raised and fitted with proper iron castings, and wooden manhole covers were removed and replaced with cast-iron frames.

17. There were 2,500 tons of silt removed from the City sewers, and conveyed, in the Board's punt, to the reclamation works being carried out by the Harbours and Rivers Department. This large deposit of silt in the old City system is caused chiefly by the outlets of same being below high-water mark, the sewers thus being tidelocked twice in the twenty-four hours. The quantity of silt removed from the main outfall sewers was 950 tons from Bondi sewer, 400 from Botany sewer, and 100 from the silt-pit at the University Park. These figures show a great reduction on last year. The engineer attributes this fact to the increase of the daily flow from extensions, causing greater scouring power.

18. All the cleansing and flushing of the main branches in the City is now being carried out during the night-time, so as to cause the least possible inconvenience to the public.

19. The smoke tests being applied to some old drains, about which complaints had been received, revealed several most serious defects endangering the health of the occupants; in other cases drains were found to be stopped up by grease or roots of trees; in all these cases notices were served to reconstruct. Of these notices 866 were

were served, and 526 were attended to, and until the Amending Bill, which is now before Parliament, becomes law, the Board are practically powerless to amend the defective drainage of these premises at the expense of the owner, and recover the cost of same.

20. The system that the Board has of issuing certificates, that the sanitary work of a building has been faithfully carried out according to the By-laws and Regulations of the Board, meets with general favour, and it is now becoming almost a recognised fact that the owner will not pay any licensed plumber or drainer for work performed by him, until he receives the Board's certificate; 1,413 of these certificates were issued during the year for drainage, and 1,387 for sanitary plumbing.

21. The ventilation of the sewers has been carried on systematically, and, by the adjunct of water sprays, has worked most efficiently. The system of ventilation by heat, as patented by Mr. M'Kenzie, one of the Board's officers, was tried in the Macdonaldtown district, and was a success in creating a strong draught, and cremating the noxious gases. The test by acetate of lead papers, and the anemometer showed that the patent performed all that the patentee claimed. The Board, not content with this, requested Mr. M'Garvie Smith to make a bacteriological examination of the air in the sewers; his report, together with those of Mr. Smail, the Board's Sewerage Engineer, are attached. The ventilation of the sewers system pursued by the Board may be summed up in an endeavour to dilute the sewer air as much as possible with fresh air, keeping the air constantly moving, and thus rendering the chances of danger as remote as possible. The concensus of opinion of science at the present day is that the more the noxious germs are diluted either in air or water, the more exposed they are to the attacks of overwhelming numbers of germs that are not noxious but are the greatest enemies of the noxious germ.

SEWAGE FARM.

22. The amount of sludge removed from the screening chambers and deposited on the farm was 879 tons, which is a very large decrease on the amount removed during the previous year. The quantity of lime used for cleaning the walls of the Inlet House was 12 tons. The area of the farm under treatment, viz., 34 acres, was not increased. The average discharge of sewage on to the farm was, in midsummer, 1,450,385 gallons, and in midwinter 1,576,877 gallons from a drainage area of 1,079 acres. The effluent water retains its high character of purity, the chemical analyses of which are attached.

23. The revenue from the farm was £359 19s. 9d., and the expenses £968 8s. 2d.

24. The live stock, cattle and pigs, have done well and have paid for themselves; the present stock are, therefore, a clear profit. More applications were received for the agistment of horses and cattle than could be complied with.

25. The Board, having shown what can be done on the farm, have come to the determination to lease it for a term of years, and are now entertaining propositions to that effect. Farming will not pay with men receiving Government pay and working Government hours, but worked as a private farm there is no reason why it should not pay a handsome return.

FINANCIAL.

WATER.

26. The following table shows the working of the Water Branch :—

Year.	Revenue.	Working Expenses.	Capital Debt.	Percentage of Working Expenses to Revenue.	Percentage of Working Expenses to Capital Cost.	Percentage of Revenue on Capital Debt.	Interest on Capital Debt after Paying Expenses.
	£	£	£				
1888	*69,938	19,205	3,004,557	27.46	0.64	2.32	1.68
1889	138,923	36,568	3,088,068	26.32	1.18	4.49	3.31
1890	145,990	34,788	3,189,080	23.82	1.09	4.57	3.48
1891	165,831	38,291	3,306,649	23.09	1.16	5.01	3.85
1892	155,886	45,078	3,394,581	28.91	1.33	4.59	3.26
1893	157,426	37,141	3,409,721	23.59	1.08	4.61	3.52

* This item is exclusive of £55,547 of arrears handed over by the City Council.

27. It is satisfactory to record that not only is there an increase of revenue of about £1,500, notwithstanding a falling off in the returns from metres of about £3,000, attributable to wet seasons and depression in trade, but also a decrease in the working expenses of about £8,000, though 26 miles of mains were cleaned, which expense is, of course, charged to working expenses. Only about 16 miles of new mains were laid, which will account in some measure for the small increase in the revenue.

28. The capital debt was increased by the small sum of £15,140, which was expended on extensions of new mains and erection of No. 3 Waverley engine at Crown-street.

29. There is a debit balance on the year's transactions of £1,413 17s. 11d.

30. The reduction of the percentage of working expenses to revenue to 23.59 is very satisfactory, especially when it is understood that more than 50 per cent. of the water consumed had to be pumped to reservoirs at heights varying from 73 ft. to 230 ft. above Crown-street reservoir.

31. The interest on the capital debt, after paying working expenses, has been raised to 3.52 per cent.

CAMPBELLTOWN AND LIVERPOOL.

32. The towns of Campbelltown and Liverpool, which are fed from the canal above Prospect, are now debited with their proportion of the capital cost of the main work and their proportion of the head office annual expenses. To arrive at the proportions to be respectively charged the following plan has been adopted. As the scheme was carried out for the supply of water to Sydney, the whole cost of the work was divided by the milage; the result was multiplied by the distance Campbelltown or Liverpool is from the head works to their respective off-takes, and a proportion of the result was taken, as the population of the town of Campbelltown or Liverpool bears to the population of the metropolis. The proportion, therefore, charged to Campbelltown is £3,357, and to Liverpool, £12,331; both of these towns can, therefore, congratulate themselves on the small amount a permanent and efficient water supply has cost them. Liverpool is some 6 miles from the canal, and the cost of the pipe supplying the town is included in the amount for reticulation, which makes it appear to be high.

33. The following are the tables worked out on the above plan:—

CAMPBELLTOWN WATER SUPPLY.

Year.	Proportion of Capital Cost and cost of Reticulation.	Interest at 4 per cent.	Maintenance (including proportion of Head Office expenses).	Total Charges.	Revenue.	Percentage of net revenue on Capital Cost.
1889.....	£ s. d. Proportion of Capital Cost..... 3,357 0 0 Reticulation..... 2,175 0 0	£ s. d. 221 0 0	£ s. d. 129 8 0	£ s. d. 350 8 0	£ s. d. 128 18 0	Nil.
	£5,532 0 0					
1890.....	Proportion of Capital Cost..... 3,357 0 0 Reticulation..... 4,353 0 0	308 0 0	222 17 0	530 17 0	346 16 0	1.60
	£7,710 0 0					
1891.....	Proportion of Capital Cost..... 3,357 0 0 Reticulation..... 4,433 0 0	312 0 0	234 17 0	546 17 0	408 15 0	2.23
	£7,790 0 0					
1892.....	Proportion of Capital Cost..... 3,357 0 0 Reticulation..... 4,433 0 0	312 0 0	222 0 6	534 0 6	357 1 1	1.73
	£7,790 0 0					
1893.....	Proportion of Capital Cost..... 3,357 0 0 Reticulation..... 4,454 0 0	312 0 0	168 2 9	480 2 9	401 14 7	2.09
	£7,811 0 0					

LIVERPOOL WATER SUPPLY.

Year.	Proportion of Capital Cost and cost of Reticulation.	Interest at 4 per cent.	Maintenance (including proportion of Head Office Expenses).	Total Charges.	Revenue.	Percentage of net revenue on Capital Cost.
1891.....	£ s. d. Proportion of Capital Cost.....12,331 0 0 Reticulation.....11,885 0 0	£ s. d. 968 0 0	£ s. d. 134 9 8	£ s. d. 1,102 9 8	£ s. d. 236 18 3	.42
	£24,216 0 0					
1892.....	Proportion of Capital Cost.....12,331 0 0 Reticulation.....12,773 0 0	1,004 0 0	853 6 5	1,857 6 5	1,004 4 4	.60
	£25,104 0 0					
1893.....	Proportion of Capital Cost.....12,331 0 0 Reticulation.....12,997 0 0	1,013 0 0	312 15 0	1,325 15 0	966 15 3	2.54
	£25,328 0 0					

RICHMOND.

34. For reasons previously stated, the Board are much restricted in their actions in managing this water supply, as they can only rate premises upon which the owner has signed an agreement with the Board that he will take the water and pay for it.

The accounts are kept entirely separate from the Metropolitan Water Scheme.

35. The following is the table:—

RICHMOND WATER SUPPLY.

(Date of Transfer to Board, 26th May, 1893).

Year.	Capital Cost.	Interest at 4 per cent.	Maintenance (including proportion of Head Office Expenses).	Total Charges.	Revenue.	Percentage of net revenue on Capital Cost.
1893.....	£ s. d. 12,340 0 0	£ s. d. 493 12 0	£ s. d. 314 16 1	£ s. d. 808 8 1	£ s. d. 399 15 3	.68

SEWERAGE.

36. The following table shows the working of the Sewerage Branch :—

Year.	Revenue.	Working Expenses.	Capital Debt.	Percentage of Working Expenses to Revenue.	Percentage of Working Expenses to Capital Cost.	Percentage of Revenue on Capital Debt.	Interest on Capital Debt after paying Expenses.
	£	£	£				
1890	71,280*	22,249	1,281,045	31·21	1·74	5·56	3·82
1891	81,302	25,411	1,447,287	31·25	1·75	5·61	3·86
1892	87,927	27,305	1,606,948	31·05	1·70	5·47	3·77
1893	93,661	27,092	1,691,462	28·92	1·60	5·53	3·93

* This item is exclusive of £10,519 of arrears handed over by the City Council.

37. There is an increase in the revenue of about £5,500, and a small decrease in the working expenses, and a reduction in the percentage of working expenses to revenue of 2·13.

38. The capital debt has been increased by about £84,500. Of this the Government expended £66,300 on works which they transferred to the Board; the balance, £18,200, was spent by the Board on reticulation works.

39. The capital debt now stands at £1,691,462. Of this amount the Government has expended £25,646 on stormwater drains in districts where there are at present no sewers, but which will eventually form adjuncts to the sewerage system. This amount is not properly a charge against the Board until they are in a position to collect revenue thereon, and a Bill is now before the Legislature to enable the Board to do so.

The Government have also expended £60,055 on sewerage works in North Sydney and Glebe districts, to which no reticulation works have as yet been constructed.

Notwithstanding these extra charges, at present non-revenue producing, the interest on capital debt, after paying working expenses, is 3·93 per cent.

WATER AND SEWERAGE.

40. The following table shows the working of the two branches taken together :—

Year.	Revenue.	Working Expenses.	Capital Cost.	Percentage of Working Expenses to Revenue.	Percentage of Working Expenses to Capital Cost.	Percentage of Revenue on Capital Cost.	Interest on Capital Cost after paying Expenses.
	£	£	£				
1890	217,270	57,037	4,470,125	26·25	1·28	4·86	3·58
1891	247,133	63,702	4,753,936	25·77	1·34	5·20	3·86
1892	243,813	72,383	5,001,529	29·68	1·44	4·87	3·42
1893	251,087	64,234	5,101,183	25·58	1·25	4·92	3·66

41. The capital debt of the Board is £5,101,183, and the net revenue, after deducting working expenses, returns in interest 3·66 per cent. on that amount, which may be considered very gratifying to all interested.

GENERAL.

GENERAL.

42. The amount of revenue outstanding on December 31st was £29,775, as against £35,446 for the previous year, showing a decrease of about £5,600.

The amount outstanding is made up as follows:—Government, £2,856; domestic rates, £11,421; churches and charities, £3,928; meters, £7,858; plumbers, drainers, &c., £3,712.

43. The convenience which the Board provides for suburban ratepayers to pay their rates at a neighbouring Council Chamber, where a cashier of the Board attends to receive same on certain advertised dates, which are also printed on the rate notices, does not seem to be generally availed of, for the amount received from ninety-one visits to twenty Municipal Council Chambers was only £4,250, which was collected at an average cost to the Board of a little over 1 per cent.

44. The gross receipts paid into the Treasury were £254,025. Legal proceedings had to be taken to recover £12,445 of this amount, or less than 5 per cent. of the total receipts.

45. During the year there was an increase of 3,389 premises which became liable for Water Rates and 3,986 for Sewerage Rates, making the total number of properties rated for water 85,895, and sewerage 39,655. Notices to the number of 220,247 were delivered on these properties in connection with water and sewerage, or the usual average number per property of 2·5.

46. The Waste Water Inspectors served 3,621 notices for infringement of the by-laws; and 87 leaky taps were repaired by them without cost to the consumers.

47. The Comptroller of Stores reports that 3,603 orders were drawn on him for 12,610 items, amounting in value to £13,461 0s. 1d.; the value of goods received into stock was £13,969 5s. 11d., leaving a balance of stock on hand of the value of £40,833 16s. 1d.

48. The receipts of the meter testing and repairing and tap testing department were £1,579 9s. 6d., and the expenses for labour and material £1,404 14s. 2d. The department might, however, be credited with a certain amount of work performed on behalf of the Water and Sewerage Branches of the Board, so that the testing department may be looked upon as self-supporting.

49. The Medical Adviser to the Board in his report, which is attached, states that the death rate from typhoid fever in the suburbs fell from 2 per 10,000 in 1892 to 1 per 10,000 in 1893. The total number of deaths in the metropolis from this disease was seventy-six.

Since the Board assumed control of the Water and Sewerage systems the death rate from enteric fever has fallen from 3·79 per 10,000 of the population of the city to 1·41.

The health of the employees engaged in sewer maintenance has been so good during the past year that not one single case of sickness arising through exposure to sewer gas has been reported.

Notwithstanding the severe epidemics of measles and scarlet fever which occurred during the year, the zymotic death rate stood at ·9 per 10,000 at the end of December, the lowest zymotic death rate for some years past.

50. On the 1st May the Board entered into their new offices, which had been specially erected for them, and the improvement in the convenience to the public and to the health of their employees has been most marked. The total cost of the building was £35,722, and land £23,207; total, £58,929. This amount, at 4 per cent., would equal a rental of about £2,360. The Board paid £2,000 per annum for the offices they have vacated, and £50 per annum as lodging allowance to their head messenger and caretaker, and, owing to the vitiated atmosphere of the basement, where fifty-two clerks were working continuously under gas burning all day, the payments to clerks absent through sickness averaged over £500 per annum. Taking all this into consideration, the present offices are cheaper to the Board than those they rented.

51. During the year Mr. Trevor Jones, the Water Engineer, who some years ago had the misfortune to lose the sight of one of his eyes, found that the other was becoming seriously affected, and, to enable him to acquire complete rest and be under medical care, the Board granted him leave to the end of the year. His duties were performed by Mr. J. M. Smail, the Sewerage Engineer, in conjunction with his other duties.

52. It is with deep sorrow and regret that the Board record the deaths of two of their colleagues during the year—that of Mr. Benjamin Palmer, Vice-President of the Board, representing the city, on 5th October, and that of the Hon. J. D. Young, M.L.C., the other representative of the city, on 16th November.*

53. The election, by the City Council, to fill the vacancy on the Board caused by the death of Mr. Palmer, took place on December 5th, when Mr. John Taylor was returned.

54. The vacant vice-presidency was filled by the election by the Board of Mr. Joseph Graham, who had represented the Suburban Councils since the constitution of the Board.

55. Besides the various meetings for the purpose of visiting works under their control, the Board held sixty-five meetings at their offices, the attendance at which is shown by the following table:—

MEETINGS OF BOARD DURING 1893.

	Jan.	Feb.	Mar.	April.	May	June.	July.	Aug.	Sep.	Oct.	Nov.	Dec.	65 Meetings.		
Meetings held	5	5	6	6	5	6	6	5	5	7	4	5	Present.	...	Absent.
C. W. Darley.....	5	3	5	4	5	6	6	5	5	5	4	5	58	...	7
†B. Palmer.....	5	5	6	6	4	6	6	3	...	...	...	...	41	...	3
R. B. P. Hickson ...	4	4	5	4	5	3	4	5	5	6	4	5	54	...	11
W. L. Vernon	4	4	6	4	4	5	4	5	5	5	3	5	54	...	11
‡Hon. J. D. Young, M.L.C.	5	4	5	5	5	6	5	5	4	5	2	...	51	...	7
§F. W. Lander	5	3	5	4	5	6	5	5	5	7	4	4	58	...	7
J. Graham	5	4	5	6	5	6	6	5	4	7	4	...	57	...	8
§J. Taylor .....	...	...	...	...	...	...	...	...	...	...	...	3	3	...	Nil.

56. Enclosed herewith are the reports of Mr. J. M. Smail, Acting Engineer for Water and Engineer for Sewerage, and the various heads of branches, together with the balance-sheet; also a comparative table of the revenue and working expenses of Water Companies in Great Britain, United States, and Australia.

C. W. DARLEY, M. Inst. C.E.,
President.

REGINALD BLOXSOME,
Secretary.

Description

* NOTE.—Since the year closed we have also to record the death on 21st January, of a third member, viz., Mr. Joseph Graham, representing the suburbs, and who was elected to the position of Vice-President on the death of Mr. Palmer.
† Deceased, 5th October, 1893. ‡ Deceased, 16th November, 1893. § Elected, 5th December, 1893.

Description of Sydney Waterworks at end of 1893.

THE source of supply is from the Nepean River, and two of its tributaries, the Cordeaux and Cataract Rivers. The catchment area is about 354 square miles. Across the Nepean River is built a concrete dam 10 feet high, which is designed to divert a portion of the stream only into the tunnel, and lift it to level of crown of the same. The water is then taken by a tunnel $4\frac{1}{2}$ miles in length to the Cataract River. Another concrete dam, similar to that on the Nepean, is thrown across this river just below the outlet of the tunnel from the Nepean, and the water is thence conveyed by a tunnel for about $1\frac{1}{2}$ mile, and then by a series of open canals and tunnels, making a total distance from the source of about $40\frac{1}{2}$ miles to the Prospect Reservoir. There are $11\frac{1}{2}$ miles of tunnels, and about $28\frac{3}{4}$ miles of open canal from the off-take to the Prospect Reservoir. Several gorges are crossed, some by inverted syphons, others by pipe aqueducts.

Prospect Reservoir.

This reservoir covers an area, when full, of 1,261 acres, and has a capacity of 10,812,313,000 gallons.

The dam is earth with a clay puddle core, and is 7,300 feet long, maximum height 84 feet, with slopes of 3 to 1 on the water side, and $2\frac{1}{2}$ to 1, with two 15-foot berms, on the outer side, and is 30 feet wide on the top; the water face is covered with heavy bluestone pitching. When quite full there is 6,744,343,000 gallons available by gravitation.

The water is drawn off from the reservoir through a valve-tower into pipes placed in a brick tunnel, carried outside and round the northern end of embankment, and is discharged through controlling valves into a basin (at the end of this basin is placed a gauge weir, from which can be read the quantity passing over daily), from which it then proceeds by an open canal for 5 miles to the Pipe Head Basin, situated $16\frac{1}{2}$ miles from Sydney, and is then conveyed by a wrought-iron pipe, 6 feet in diameter, to Potts' Hill, a distance of 5 miles.

Potts' Hill Balance Reservoir.

The water is delivered here into a 100,000,000-gallon tank, built partly in excavation, partly in bank, the bottom of which is lined with hydraulic lime concrete, and the sides, which are laid to slopes of 1 to 1, are lined with dry coursed rubble. This work is designed to tide the city over any interruption of supply from Prospect, as well as to prevent fluctuation of head of pressure.

Screening Tank and Trunk Mains.

This screening tank is of brick, built in two concentric rings. The water is delivered into the outer ring, and passes through a series of copper gauze screens of 840 meshes to the inch. These screens are arranged so that the orifice which they fill can be closed, and the screen taken out and scoured. From these tanks the water passes into two 48-inch cast-iron mains.

The 48-inch main first laid continues with same diameter to Lewisham, where it bifurcates, one branch (48-inch) leading to Petersham Reservoir, the other (42-inch) to Crown-street Reservoir. The new 48-inch main was completed this year, and is now worked alternately with the old. A connection between the two trunk mains has been made in New Canterbury-road, Petersham.

Crown-street Reservoir and Pumping Station.

Crown-street Reservoir top-water level is 141 feet above high-water mark, and is built of brick, and contains 3,250,000 gallons. At this place is situated the main pumping plant, consisting of two compound high-duty Worthington Engines. Engine No. 1 is capable of raising 500,000 gallons per hour with very great economy to the Paddington Reservoir, a height of 70 feet above the pumps; engine No. 2 is capable of raising 210,000 gallons per hour to Woollahra Reservoir, a height of 140 feet above the pumps, and also of raising 200,000 gallons per hour to Waverley, a height of 220 feet above pumps. The pumps are larger than are necessary for the present supply, and, owing to the small storage capacity at Paddington and Woollahra, the engines are not being worked to their greatest advantage, as they have to start and stop at short intervals. The above plant has, this year, been supplemented by the addition of the No. 3 pumps, designed and erected by Mort's Dock and Engineering Company. The plant is of the horizontal compound condensing duplex rotative direct-acting type. The pumps can raise 100,000 gallons per hour to a height of 219 feet. The pumping plant at Crown-street may be said to be now complete.

Four 142-h.p. Babcock and Wilcox boilers generate the requisite steam.

Paddington Reservoir.

Paddington Reservoir, top-water level of which is 214 feet above high-water mark, or 73 feet above Crown-street, is built of brick, and contains 2,000,000 gallons, and is supplied by a 36-inch cast-iron main from Crown-street pumps, and distributes the water through a 24-inch cast-iron main, *via* Begg-street, and a 36-inch, *via* Park Road.

Woollahra Reservoir.

Woollahra Reservoir, top-water level of which is 232 feet above high-water mark, or 141 feet above Crown-street, is built of brick, and contains 1,000,000 gallons, and is supplied by a $24\frac{1}{2}$ -inch wrought-iron main from Crown-street, and distributes the water through a 20-inch main.

The old pumping plant at this reservoir, which in the past pumped water to Waverley, is about being dismantled.

Waverley

Waverley Reservoir.

Waverley Reservoir top-water level is 360 feet above high-water mark, and 78 feet above Woollahra, is built of brickwork, and contains 1,087,000 gallons. It distributes the water through a 15-inch main. A contract has just been let for the erection of supplemental tanks in Waverley Park, at an elevation of 20 feet above the present reservoir, in order that the upper zones of the district may be better supplied.

Petersham Reservoir.

This reservoir is built of brick, and contains 2,157,000 gallons. The top-water level is 166 feet above high-water mark, and receives its supply by gravitation from Potts' Hill through a 48-inch cast-iron main, which branches off the 48-inch main at Lewisham, and distributes the water through two 18-inch outlets.

North Sydney Supply—Ryde Pumping Station, Ryde Hill Tank, and Chatswood Tanks.

North Sydney, which was supplied from Paddington by a sub-marine pipe up to the end of 1891, has since received its supply from Potts' Hill, the water being delivered through a cast-iron pipe partly 24-inch and partly 20-inch diameter into a balance reservoir, near the Ryde Railway station. Here a pair of powerful pumps raise the water through a 24 $\frac{1}{2}$ -inch wrought-iron rising main into a 1,000,000 gallon wrought-iron tank to Ryde Village, at a level of 234 feet above high-water mark, and by a continuation of the same main into a pair of each 1,500,000-gallon wrought-iron tanks at Chatswood, at an elevation of 370 feet above high-water mark.

From the first-named tank the whole of Ryde, Gladesville, and Hunter's Hill get their supplies, and a 9-inch branch was extended over the Parramatta River and Iron Cove Bridges for the supply of the heights of Balmain.

The pair of iron tanks at Chatswood afford a liberal supply to Willoughby, North Sydney, and Mosman.

Campbelltown.

Campbelltown is supplied direct from the main canal by gravitation, a 6-inch pipe from the canal at 16 miles 40 chains being laid to the town, a distance of 2 $\frac{1}{2}$ miles, and the reticulation consisting chiefly of 4-inch mains.

Liverpool.

Liverpool receives its supply by a 9-inch pipe from the main canal at Cecil Hills, which is extended as far as Mount Young, and thence by a 6-inch main to the town. In order to tide over any possible interruption to the flow in the canal a 4,000,000-gallon earthen reservoir has been constructed close to the canal, and is filled from the canal.

Granville, Auburn, and Rookwood.

Granville is supplied by gravitation through a 15-inch main laid along Woodville Road, a distance of 2 $\frac{1}{4}$ miles from the 72-inch wrought-iron trunk main.

Rookwood and Auburn receive their supply by means of a 12-inch main along Joseph-street from Potts' Hill.

Ashfield.

A part of Ashfield is too elevated to receive a supply by gravitation from Potts' Hill level; therefore the loftier parts are supplied from the Woollahra Reservoir by the Petersham trunk main, which conveys the water to a 100,000-gallon tank of wrought-iron, erected on a brick circular support, at an elevation of 223 feet above high-water mark.

Hurstville, Kogarah.

The bulk of the supply to Kogarah is given by gravitation from 12-inch mains connected with the Petersham Reservoir system. The higher portions of this district are supplied with water from Penhurst, where is erected a 20,000-gallon cast-iron tank, built on brick piers. The water is pumped from Carlton Station by the small steam pumping plant (Blake's duplex), which was formerly erected at North Sydney to supply that district, prior to the completion of the Ryde pumps. The gas engine is still occasionally used.

Richmond.

In July last the Board assumed the temporary management of the Richmond Water Works, which were completed in 1892, and had since then been worked locally by the Richmond Municipal Council. The scheme, which is entirely unconnected with the Sydney supply scheme, consists of a small pumping plant—two horizontal 6-horse-power engines, coupled and geared, working two brass lined single barrel deep-well pumps (Tangyes), fixed 61 ft. 6 in. below floor of engine room—erected on the left bank of the Hawkesbury River, just below the confluence of the Grose and Nepean; a circular brick service tank, 60 ft. in diameter, having a capacity of 225,000 gallons; a 6-in. supply main to Richmond, 4 miles in length; and 5 $\frac{1}{2}$ miles of reticulation mains, 3 in. and 4 in. diameter, within the town.

Description of the Metropolitan Sewerage System.

THE Metropolitan Sewerage System, under the control of the Board of Water Supply and Sewerage, comprises the old and new systems, the former having been initiated by the old City Commissioners in 1853, and was carried out by their successors, the present City Council, which was incorporated in 1857. The City Council had control of the water and sewerage works within the city until the year 1888, when the waterworks were transferred to the Board. The transfer of the existing sewerage works followed in 1889.

The old system comprised four main outfalls, with subsidiary sewers along the principal streets, which in turn received the reticulation sewers of the minor thoroughfares. The four main outfalls discharged the sewage of the city into the various parts of the harbour at Blackwattle Bay, Darling Harbour, Sydney Cove, and Woolloomooloo Bay respectively. This system was designed on the principles of what is termed the "combined system." The pollution of the freshness of the harbour, by the discharge of the sewage of the city and consequent danger to public health, led to the appointment of a Commission to inquire into the best means of diverting the sewage from the harbour and otherwise disposing of same. The new intercepting system was the outcome of the labours of the Commission. The main works were carried out by the Government, and on completion were transferred, with all other existing works, to the control of the Board by Act of Parliament. The system, which is on the lines of the partially "separate system," intercepts all sewage, which heretofore was discharged into the harbour, at a level of 40 feet above high-water mark. This is termed the gravitation zone. The sewage from the low level area, *i.e.*, between high-water mark and 40 feet contour, will eventually be pumped into the gravitation sewers, and discharged into the ocean or into the sewage farm.

The system consists of two main outfalls, named the northern and southern respectively, the former discharging into the Pacific Ocean, at a point named "Ben Buckler," at Bondi, and the latter discharging into a sewage farm at "Webb's Grant," on the shores of Botany Bay. These works are of considerable magnitude and have not been constructed without considerable difficulty and outlay.

Northern Outfall.

The northern system commences at "Ben Buckler," where a large chamber was constructed in the sandstone rock. From this chamber two channels bifurcate so as to ensure a free discharge during the prevalence of either northerly, easterly, or southerly gales. From the chamber a shaft extends to the surface for ventilation and escape of air when the sea breaks into the discharge channels. The dimensions of main outfall at chamber is 8 ft. x 7 ft. 6 in., and decreases by decrements to 6 ft. 10 in. x 5 ft. 10 in. at Oxford and Liverpool Streets junction. At this point is a large chamber into which three different branches discharge, *viz.*—the northern branch, which passes under Hyde Park to Castlereagh-street, where it bifurcates, one sub-main intercepting the sewage from main outfall at Macquarie Point, and the other intercepting the sewers discharging at Queen's Wharf. 2nd. The western branch, which extends along Liverpool-street to and along Kent-street to Miller's Point, intercepting the sewage which discharged into Darling Harbour. 3rd. The south-western branch, which passes under Belmore Gardens, Benevolent Asylum, and along George-street West to Carlton-street, where it bifurcates into two sub-mains, one passing through Darlington, University Grounds, to Camperdown, Newtown, and Petersham, intercepting old city sewers and draining new areas; the other sub-main passing along George-street West by a long syphon, on account of a depression. Connected with this syphon is a scour chamber and valves for periodic cleansing. This branch extends to the Glebe and boroughs of Balmain and Leichhardt. The whole of the sewage above the 40-foot contour line, which formerly flowed into Blackwattle Bay, is intercepted by this branch and discharged into the ocean.

The work was carried through varying formations—in some instances the stratum was indurated sandstone, in others shale, clay, and water-charged drift sand. Concrete enters largely into the construction of the works, the lining of rock tunnels being principally bluestone concrete rendered with cement mortar. Wherever the outfall sewer crossed natural creeks or watercourses offset and scour valves were provided. An overflow sewer discharging into Rushcutter's Bay is connected with the main outfall to take surplus water during heavy rain storms. This sewer was carried across low-lying swampy land on arches and circular piers; the latter were constructed on the same principle as carried out in India.

Southern Outfall.

The southern main outfall commences at the inlet chamber, which is constructed on the north bank of Cook's River, near its junction with Botany Bay. The sewer is 5 ft. 6 in. in diameter, constructed of concrete, with brick lining rendered with Portland cement. In places the sewer is above the level of the adjoining land, and in others it passes through low sand-hills and swampy ground. Where natural watercourses are passed over, concrete culverts and overflow chambers and valves are provided. The outfall sewer extends to Botany Road, where the size is decreased for a short distance, to 4 ft. 6 in. x 3 ft. 6 in. Hawksley Section: From Botany Road the sewer extends along Bourke-street, through the boroughs of Waterloo, Redfern, and the City of Sydney to Nobbs-street, where the sub-mains from different districts join. This outfall drains the southern watershed of the city and boroughs of Redfern, Waterloo, Alexandria, Macdonaldtown, and Newtown.

Inlet House.

The sewage passes from the main outfall into the straining chambers of inlet house. The chambers are in duplicate and controlled by inlet valves, so that when one series is in use the other is being cleaned out. The sewage is strained by means of three circular screens; the mesh varies from 3 inches to 1 inch. The screens are worked by one central shaft, with gearing fixed on the platform at one end, and intercept all

all extraneous matter before the sewage passes into the syphon well. From the syphon well the sewage passes under the bed of Cook's River by a cast-iron syphon 3 ft. 9 in. in diameter laid in a trench and surrounded with concrete. The syphon is connected with a well in outlet house on south side of river, from which the sewage flows along a main carrier, and is distributed over the irrigation beds and settling tanks by valves. The valves are of simple construction, and the distribution of the sewage is easily controlled by the farm manager.

Sewage Farm.

The Sewage Farm is situated on a neck of land called Webb's Grant, the formation of which is raw drift sand, originally covered with low dense scrub. For agricultural purposes, to be worked at a profit, the soil is useless, but as a filter for crude sewage—this being the state in which the sewage is distributed over it—it cannot be surpassed. The farm is laid out on one side in irrigation beds, at different levels, so as to enable the manager to command the whole area. On this area the sludge, which is dredged from the inlet house, is conveyed in trucks by a small locomotive to the various beds, and is used as manure. On the other or southern side the ground is laid out in a series of filtering tanks, the number admitting of the sewage being dealt with intermittingly. At times, when circumstances admit, these tanks are cultivated, which assists in keeping the ground clean, and improves the soil as a filter. Cattle and pigs are reared and fattened on the surplus products of the farm. The styes are built in concrete, and kept clean by daily washing. Cattle and horses are also taken for agistment. The daily discharge on to the farm is 1,518,631 gallons; this is disposed of over 35 acres of land.

Western Suburbs.

The sewerage system for this district is now being carried out by the Government Sewerage Department under a special vote as regards the main ducts. The outfall works are nearly completed, and the eastern branch sewer is now in progress. This sewer drains portions of Marrickville, Petersham, and Leichhardt, and will also receive the sewage from low level system which will be pumped into it at Meeks' Road Pumping Station. The system will also discharge on a portion of the Sewage Farm area upon the western side, further resumption of land having been made for that purpose.

Rates and Charges for Water and Sewerage.

WATER RATES.

1. The following rates and charges are those which the owners and occupiers of houses, tenements, and lands shall pay in respect of water supplied by the Board, that is to say:—

For Water supplied for domestic purposes otherwise than by Measure.

- (I.) Where the premises are of the assessed annual value of twenty pounds or under, ten shillings per annum.
- (II.) Where the premises are above the assessed annual value of twenty pounds, a rate of sixpence for each pound sterling on the amount of the valuation up to three hundred pounds inclusive; fivepence for each pound on the amount of the valuation in excess of three hundred pounds up to seven hundred pounds; fourpence for each pound on the amount of the valuation in excess of seven hundred pounds up to one thousand pounds; threepence for each pound on the amount of the valuation in excess of one thousand pounds up to four thousand pounds; and twopence for each pound on the amount of the valuation in excess of four thousand pounds.
- (III.) Vacant or unimproved lands of the assessed value of thirty pounds or under shall be subject to a rate of five shillings per annum, and vacant or unimproved lands of the assessed value of over thirty pounds shall be subject to a rate of twopence for each pound sterling on the amount of the valuation.
- (IV.) The like rates as those above mentioned shall be charged on all lands, tenements, and hereditaments not included in any valuation by the Municipal Council of the City of Sydney or Redfern, or of any Borough or Municipal District, and on all lands for the time being valued by the said Municipal Council of the City of Sydney or Redfern, or by such Borough or Municipal District, at a sum less than the true value thereof.

Supply by Measure.

- (V.) The charge for water supplied by measure shall be one shilling per 1,000 gallons for all water consumed up to twenty million gallons per annum, and ninepence per 1,000 gallons for all water consumed in excess of twenty million gallons per annum.
- Her Majesty's Navy will be supplied free of charge.

For water for other than domestic purposes otherwise than by measure.

- (VI.) The charge for water supplied to gas-engines or oil-engines shall be five shillings per annum for each engine of two-horse power and under, and for every additional horse power beyond two-horse power an additional charge of two shillings and sixpence per annum for each horse power.
- (VII.) The charge for water supplied to steam boilers shall be one pound per annum for each steam boiler up to three-horse power. And for every additional horse power beyond three-horse power an additional charge of five shillings per annum for each horse power.
- (VIII.) The charge for water supplied for actuating ventilators or refrigerators shall be by special fee, according to the following scale, namely:—

Class A.—Passing 60 gals. per hour at 65 lb. pressure—	
1 nozzle,	£6 per annum.
2 "	£4 10s. per annum each.
3 "	£3 10s. per annum each.
4 "	and upwards, £3 per annum each.
Class B.—Passing 40 gals. per hour at 65 lb. pressure—	
1 nozzle,	£3 15s. per annum,
2 "	£3 " each.
3 "	£2 10s. " "
4 "	and upwards, £2 per annum each.

Supply for twelve hours only in each day.

Provided, however, that the supply of water under this By-law shall be for twelve hours only in each day, and no person having such supply shall continue to use the same for more than twelve hours in any one day

Water for trade purposes, &c.

- (IX.) The charge for water supplied for purposes of the undermentioned or other trades shall be at such rates upon such terms and subject to such conditions as may be agreed upon by the Board and the person requiring to be supplied, provided, however, that for any year or part thereof, the minimum charge for water supplied for the undermentioned trades shall be that in each hereunder case set opposite the trade, viz:—

Photography, and any like process	... ..	5s. per annum.
Tripe cleaning	... ..	5s. "
Tying purposes	... ..	5s. "
Laundries	... ..	5s. "
Dyers	... ..	10s. "
Condiment making	... ..	5s. "
Bottle washing	... ..	5s. "
Small goods (sweets)	... ..	5s. "
Waterfalls and fountains	... ..	5s. "
Shop fronts, by hose	... ..	5s. "
Organ motors and such like mechanisms	... ..	20s. "

Washing.

Washing Vehicles.

- (x) The Board may supply water for the washing of vehicles with a hose, without meter, at the rate of 5s. per annum for each vehicle.

In all cases where special fees are charged, the Board reserve to themselves the right of insisting upon a meter being fixed at any time, notwithstanding the fact that the special fee may have been paid. All special fees are in addition to the assessed annual rate of the premises on which such fees are charged, and are payable in advance. All premises on which water is used for other than domestic purposes, and upon which special fees are paid, shall be open for inspection by the Inspectors of the Board at any reasonable hour.

2. Assessed rates shall be paid half-yearly in advance, whether a meter is used or not. In the case when a meter is used, the meter account will be rendered only when it is in excess of the assessment. Cheques and post-office orders will be received in payment of rates; but if the cheque tendered by any person as payment for rates due is dishonored, the Board may cut off his service, and proceed for the recovery of the amount by warrant for distress or otherwise. Cheques and post-office orders must be crossed in favour of the Board.

3. The minimum charge for water, whether supplied through meter or otherwise, for domestic purposes and for purposes other than domestic, is the assessed annual rate. If the water is supplied by meter, and the meter account exceeds the assessment (calculated at the rate of one shilling per 1,000 gallons), then such excess shall be charged in addition to the assessment.

4. One meter may be allowed to supply several tenements when such tenements are occupied by one person or firm as a place of business or abode, and the meter account will be credited with the assessments of all such tenements. One service only will be allowed under these conditions, upon which the meter will be fixed, and all the water for such tenements must pass through such meter. Where peculiar circumstances entail a departure from the above, and two services are absolutely necessary, then there shall be a meter on each service pipe.

Building Charges, &c.

- (xi.) The charge for water supplied for building and plastering purposes, for buildings to be used either wholly or partly as dwelling-houses, shall be at the rate of one half-penny per cubic yard on the cubical contents of each building. The Board will supply water for all other buildings either by meter or at the rate above mentioned per cubic yard on the cubical contents of each building as the Board shall determine: Provided that before any water shall be used through meter for building purposes such meter shall be submitted to the Board in each case for examination, and must pass the sensitive test; and the minimum charge in each case for water so supplied through meter shall be ten shillings.

(1.) The charge for water supplied for plastering rooms only shall be two shillings and sixpence for each room, and for the building of wash-houses, water-closets, coppers and chimneys only, two shillings and sixpence each.

(2.) The charge for water supplied for making and mixing of concrete for foundations of wooden blocks, stone cubes, or other form of permanent roadway or pavement, shall be at the rate of twenty-one shillings per 1,000 square yards by superficial measurement of road surface, and for all other concrete, brickwork, or masonry, at the rate of three half-pence per cubic yard, as measured on the work.

- (xii.) Any person who maintains horses or cows may be supplied with water, without meter, from the domestic service for the sum of five shillings per annum for each animal, in addition to the assessed annual rate of the premises on which such animal is maintained or supplied with water.

- (xiii.) All lands or premises actually supplied with water by the Board, on which any one or more head of horses or cattle shall be kept or maintained, shall be liable to an extra rate or charge (beyond and in addition to the assessed annual rate of the premises) of five shillings per head for each head of horses or cattle kept or maintained on such lands or premises. And where such lands or premises are not actually supplied with water by the Board they shall be liable to an extra rate or charge (beyond and in addition to the assessed annual rate of the premises) of two shillings and sixpence per head for each head of horses or cattle kept or maintained on such lands or premises.

- (xiv.) The Board may supply water for gardens (and for such purpose may permit a hose and stand-pipe to be used) without meter, at the rate of ten shillings per annum per 1,000 square feet superficial area, or part thereof, and two shillings and sixpence for every additional 250 square feet superficial area, or part thereof, in addition to the assessed annual rate of the premises to which such garden belongs or is attached.

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SEWERAGE RATES.

1. The following rates and charges are those which the owners and occupiers of houses, tenements, or lands shall pay for or in respect of sewerage, or for or in respect of the liability of such houses, tenements, or lands to rates and charges for sewerage, that is to say:—

- (i.) Where the premises are of the assessed annual value of seventeen pounds or under, ten shilling per annum.
- (ii.) Where the premises are above the assessed annual value of seventeen pounds, a rate of seven-pence for each pound sterling on the amount of the valuation.
- (iii.) Vacant or unimproved lands of the assessed annual value of twenty pounds or under shall be subject to a rate of five shillings per annum, and vacant or unimproved lands of the assessed value of over twenty pounds shall be subject to a rate of threepence for each pound sterling on the amount of the valuation.

FOR

FOR COUNTRY DISTRICTS IN COUNTY OF CUMBERLAND.

For water supplied for domestic purposes otherwise than by measure:—

- (i.) On every house, tenement, or land of £10 assessed annual value and under, 10s. per annum.
- (ii.) On every house, tenement, or land above the assessed annual value of £10, a rate of 1s. for each pound sterling on the amount of the valuation.
- (iii.) Vacant or unimproved lands of the assessed value of £9 and under shall be subject to a rate of three shillings per annum, and vacant or unimproved lands of the assessed value of over £9 shall be subject to a rate of 4d. for each pound sterling on the amount of the valuation.
- (iv.) The like rates as those above mentioned shall be charged on all lands, tenements, and hereditaments not included in any valuation by any Borough or Municipal District, and on all lands for the time being valued by any such Borough or Municipal District at a sum less than the true value thereof.

For water supplied by measure:—

- (v.) The charge for water supplied by measure shall be one shilling per 1,000 gallons for all water consumed up to twenty million gallons per annum, and ninepence per 1,000 gallons for all water consumed in excess of twenty million gallons per annum. Her Majesty's Navy will be supplied free of charge.

Analysis.

WATER SUPPLY TABLE.

Year.	Average Daily Supply.	Total Supply for Year.	Number of Houses supplied.	Estimated Population supplied.	Average Daily Supply during year.		Mains.	
					Per House.	Per Head of Estimated Population.	Mains laid.	Mains cleaned.
	gallons.	gallons.			gallons.	gallons.	miles yds.	miles yds.
1888	8,144,169	2,072,621,623	61,718	206,246	132	27.40	53 803	4 800
1889	8,620,000	3,219,244,150	67,924	326,035	129	27.05	86 1,463	16 907
1890	8,486,034	3,097,402,486	71,501	343,204	118	24.70	75 860	7 278
1891	9,540,102	3,482,237,514	76,093	365,246	125	26.11	102 250	26 1,566
1892	12,120,152	4,439,273,890	78,926	378,886	153	32.12	89 915	29 741
1893	12,533,652	4,574,782,838	81,288	380,182	153	33.12	15 1,711	26 456

WATER RATES.

Year.	Gross Water Rates.	Cancelled.	Net Revenue.	Gross Receipts paid to Treasury.	Less Refunds, &c., by Treasury.	Net Receipts paid to Treasury.	Outstanding Accounts.	
							Rates.	Plumbers and Others.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1888	*125,762 8 0	276 4 0	125,485 10 0	90,089 0 11	957 14 0	89,131 15 5	40,791 2 6	918 10 0
1889	141,531 3 0	2,607 4 9	138,923 18 3	147,015 0 1	1,105 6 0	145,939 13 4	34,672 3 2	707 11 6
1890	149,316 0 2	3,325 10 10	145,990 9 4	158,949 17 0	60 11 1	158,889 5 11	24,691 7 0	2,067 8 6
1891	171,445 17 5	5,614 16 6	165,831 0 11	168,261 17 7	127 16 8	165,137 0 11	26,028 4 2	771 3 0
1892	160,825 3 9	4,438 16 9	155,889 7 0	163,024 16 8	204 13 4	162,820 3 4	10,168 9 1	3,120 9 3
1893	168,963 12 3	1,537 0 7	157,426 11 8	158,506 1 11	222 16 10	158,283 5 1	18,042 15 5	916 2 1

* This item is inclusive of £55,547 of arrears handed over by the City Council.

MAINTENANCE.

MANAGEMENT.

Year.	Maintenance of Mains, &c.	Wages and Expenses.	Coals.	Rents.	Total Maintenance.	President and Board Fees.	Salaries.	Stationery and Printing.	Advertising and Incidental.	Total Management.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1888	677 17 2	7,676 13 3	901 14 5	767 0 8	10,023 11 6	1,253 10 3	6,099 18 10	1,393 7 1	525 6 4	9,182 2 6
1889	3,289 3 2	13,850 5 10	1,489 13 10	1,756 10 0	20,385 12 10	1,708 12 6	12,346 15 8	933 9 11	1,193 13 7	16,182 11 8
1890	3,676 3 1	13,036 9 4	2,272 11 11	900 16 0	20,646 1 1	1,242 10 0	10,912 0 2	965 6 9	1,722 12 0	14,242 8 11
1891	5,665 6 7	14,165 6 3	2,663 6 3	1,167 9 4	23,606 8 5	1,242 10 0	11,204 3 1	948 0 9	1,290 2 1	14,634 15 11
1892	13,005 8 5	15,255 2 3	1,729 17 5	1,100 4 0	31,099 12 1	1,041 18 8	10,747 17 6	641 14 4	1,550 3 10	13,987 14 4
1893	9,498 14 6	11,107 9 7	1,635 13 2	1,101 15 10	23,343 18 0	859 3 4	10,097 16 11	660 5 8	1,390 12 8	13,798 0 7

GENERAL SUMMARY.

Year	Revenue.	Total Maintenance.	Total Management.	Total Maintenance and Management.	Interest.		Total Interest.	Depreciation	Total Expenses.
					On Loan Capital.	On Debentures.			
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1888	125,435 10 0	10,023 11 6	9,182 2 6	19,205 14 0	59,976 7 3	4,300 0 0	64,276 7 3	.....	83,482 1 3
1889	138,923 18 3	20,385 12 10	16,182 11 8	36,568 4 6	101,477 5 5	4,150 0 0	105,627 5 5	2,446 8 8	144,641 18 7
1890	145,990 9 4	20,546 1 1	14,242 8 11	34,788 10 0	105,099 19 9	4,000 0 0	109,099 19 9	3,421 15 2	147,310 4 11
1891	165,831 0 11	23,606 8 5	14,634 15 11	38,291 4 4	107,981 11 8	4,000 0 0	111,981 11 8	3,016 18 0	164,189 14 0
1892	155,889 7 0	31,099 12 1	13,987 14 4	45,075 6 5	111,860 8 2	4,000 0 0	115,860 8 2	877 12 3	161,825 6 10
1893	157,426 11 8	23,343 13 0	13,798 0 7	37,141 13 7	115,187 0 10	4,000 0 0	119,187 0 10	2,511 15 2	158,840 9 7

SEWERAGE TABLE.

Year.	Number of Houses Drained.	Estimated Population served	New Sewers Laid During the Year.		Existing Sewers.	Total Length of Sewers.	Storm-water Drains Laid.				Ventilating Shafts Erected.	Sewers Ventilated.
			By Board.	By Govt.			By Board.	By Govt.	Existing.	Total.		
1890	22,765	109,272	0.33	18.69	99.02	122.03	.77	Nil.	2.38	3.15	12,630	14.5
1891	26,884	129,043	21.53	4.46	122.03	148.02	Nil.	1.23	3.15	4.88	47,623	70.74
1892	31,402	150,729	22.50	2.42	148.02	172.94	1.47	.77	4.33	6.02	49,089	79.25
1893	36,062	179,097	4.35	5.05	177.39	182.34	.10	2.38	6.02	9.10	50,230	81.43

SEWERAGE RATES.

Year.	Gross Sewerage Rates.	Cancelled.	Net Revenue.	Gross Receipts paid to Treasury.	Loss Refund by Treasury.	Net Receipts paid to Treasury.	Amount Outstanding.	
							Rates.	Compulsory Drainage, and Others.
1890	£ s. d. *85,291 0 7	£ s. d. 3,492 13 7	£ s. d. 81,799 11 0	£ s. d. 74,180 6 7	£ s. d. 48 5 10	£ s. d. 74,132 0 9	£ s. d. 7,019 4 5	£ s. d.
1891	83,731 10 11	2,423 12 7	31,302 18 4	80,555 16 8	50 1 7	81,252 16 9	8,320 2 10	3,224 14 3
1892	89,031 18 4	1,104 10 6	87,926 18 10	86,600 1 7	110 6 1	86,579 15 6	9,597 7 4	3,560 0 2
1893	94,504 15 1	843 12 3	93,661 2 10	95,519 6 2	143 7 0	95,375 19 2	3,021 0 6	2,705 10 10

* This item is inclusive of £10,519 of arrears handed over by the City Council.

MAINTENANCE.

MANAGEMENT.

Year.	Maintenance of Sewers.	Wages and Expenses.	Sewage Farm Maintenance.	Rents.	Total Maintenance.	President and Board Fees.	Salaries.	Stationery and Printing.	Advertising and Incidentals.	Total Management.
1890.....	£ s. d. 427 16 0	£ s. d. 9,062 16 3	£ s. d. 918 2 10	£ s. d. 1,041 13 4	£ s. d. 11,450 8 6	£ s. d. 1,427 2 6	£ s. d. 7,796 17 0	£ s. d. 1,110 6 3	£ s. d. 464 19 7	£ s. d. 10,799 5 4
1891.....	1,109 19 7	12,684 8 9	329 18 7	1,000 0 0	15,621 6 11	1,242 10 0	7,180 7 0	889 7 8	475 2 0	9,787 7 11
1892.....	908 1 5	13,584 17 4	887 17 1	1,002 0 0	16,382 15 10	1,041 18 8	8,533 13 5	611 18 6	735 2 4	10,922 12 11
1893.....	511 14 6	15,035 14 6	908 8 2	1,069 13 6	17,605 10 8	850 3 4	7,270 14 11	550 4 1	806 14 3	9,486 16 7

GENERAL SUMMARY.

Year.	Revenue.	Total Maintenance.	Total Management.	Total Maintenance and Management.	Interest.		Total Interest.	Depreciation.	Total Expenses.
					On Loan Capital.	On Debentures.			
1890	£ s. d. 81,799 11 0	£ s. d. 11,460 8 5	£ s. d. 10,799 5 4	£ s. d. 22,249 13 9	£ s. d. 36,141 10 1	£ s. d. 8,635 0 0	£ s. d. 44,776 10 1	£ s. d.	£ s. d. 67,026 3 10
1891	81,302 18 4	15,024 6 11	9,787 7 11	25,411 14 10	39,674 17 4	6,820 0 0	46,494 17 4	.....	71,906 12 2
1892	87,926 18 10	16,382 15 10	10,922 12 11	27,205 8 9	45,186 19 0	6,820 0 0	52,016 19 0	220 12 10	70,543 0 7
1893	93,661 2 10	17,605 10 8	9,486 16 7	27,092 7 3	60,863 12 4	6,820 0 0	57,683 12 4	596 15 11	65,362 15 6

Information supplied to the Board as to the Water Rates and Charges by some of the Principal Cities of Australia, England, and America.

Name of City, &c.	Assessment.					Meter.
	£25 house.	£50 house.	£100 house.	£150 house.	£300 house.	Per 1,000 gals.
Adelaide.....	1 5 0	2 10 0	5 0 0	6 11 0	8 16 0	1s. to 1s. 9d.
Melbourne.....	0 12 6	1 5 0	2 10 0	3 15 0	7 10 0	1s.
Sydney.....	0 12 6	1 5 0	2 10 0	3 15 0	7 10 0	1s.
Belfast.....	1 0 10	2 1 8	4 3 4	6 5 0	12 10 0	5½d. to 10d.
Bradford.....	1 15 0	3 5 0	5 10 0	8 0 0	15 0 0	6½d. to 9d.
Dublin.....	0 14 7	1 9 4	2 18 8	4 8 0	8 16 0	4d. to 6d.
Dundee.....	1 7 1	2 14 2	5 8 4	8 2 6	16 5 0	7d. to 8d.
East London.....	1 5 0	2 10 0	5 0 0	7 10 0	15 0 0	6d. to 9d.
Edinburgh.....	0 15 8	1 11 3	3 2 6	4 13 9	9 7 6	6d.
Kent (London).....	1 8 0	2 10 0	4 0 0	6 0 0	12 0 0	10d.
Leeds.....	1 1 0	2 0 0	3 10 0	6 0 0	12 0 0	6d.
Liverpool.....	1 8 2	2 16 3	5 12 6	8 8 9	17 17 6	7d. to 10½d.
Manchester.....	1 5 0	2 10 0	5 0 0	7 10 0	15 0 0	4d. to 6d.
Nottingham.....	1 5 0	2 2 0	3 0 0	4 10 0	9 0 0	6d. to 1s.
Newcastle-on-Tyne.....	1 5 0	2 0 0	3 0 0	4 10 0	9 0 0	5d. to 1s. 2d.
Southwark and Vauxhall (London).....	1 5 0	2 10 0	5 0 0	7 10 0	15 0 0	6d. to 9d. high level 25 per cent. addition, minimum consumption 25,000 gallons per quarter.
Baltimore, U.S.A.	From 12s. 6d. for 12ft. house frontage to £2 12s. 6d. for 22ft. and over house frontage.					4d.
Brooklyn „	For 1 storey house of 16ft. frontage, 16s. 8d. 1 storey of 50ft., £3 10s. 10d., to 5 storeys of 50ft., £4 7s. 6d. Corner houses count both sides.					1s.
	Assessment.					
	£25 house.	£50 house.	£100 house.	£150 house.	£300 house.	
Boston „	1 0 10	1 0 10	1 0 10	1 5 0	1 9 2	4d. to 7d. per 100ft. Minimum charge, £3 2s. 6d. per annum.
Chicago „	From 12s. 6d. for 12ft. frontage to £6 2s. 9d. for 87ft. frontage, in addition 2s. 1d. per occupier.					4d. to 5d.
Detroit „ *	For each family, £1 0s. 10d. per annum.					2d.
	Assessment.					
	£25 house.	£50 house.	£100 house.	£150 house.	£300 house.	
Montreal, Canada	2 9 0	4 8 6	8 0 0	12 0 0	23 0 0	
New York.....U.S.A.*	From 16s. 8d. for 16ft. house frontage of 1 storey to 75s. for 50ft. house frontage of 5 storeys.					8d.
Philadelphia „						4½d.
Pittsburg..... „	From 10s. 5d. for 1 room to £2 3s. 4d. for 10 rooms.					2½d. to 10d.
St. Louis..... „	From 2s. 1d. to 4s. 2d. per room, according to number of residents.					5d. to 1s. 3d.
St. Paul..... „	From 12s. 6d. for 1 family, 4 rooms, to 33s. 2d. of 10 rooms; above this 12s. 6d. per family.					5d. to 10d.
Spring Valley (San Francisco) ...	From 32s. 6d. for buildings occupying 500 square ft. or under, to 95s. for buildings covering 2,000 square ft.					2s. 4d.
Toronto, Canada	4s. 2d. per room, and 4s. 2d. per inmate.					1s.

NOTE.—Where no amounts are specified under the above headings the required information has not been furnished.
* These denote that the information as requested has not been furnished, but compiled from Annual Reports.

INFORMATION supplied to the Metropolitan Board of Water Supply and Sewerage, Sydney—*continued.*

Revenue, Working Expenses, &c.

Names of City, &c.	Revenue.			Maintenance and Management.			Percentage of Working Expenses to Revenue.		
	1890.	1891.	1892.	1890.	1891.	1892.	1890.	1891.	1892.
Adelaide	£ 50,189	£ 59,236	£ 60,810	£ 13,004	£ 14,904	£ 15,150	24	25	25
Melbourne	193,274	200,745	188,000	26,118	27,574	30,558	13	13	21
Sydney	146,990	165,831	155,886	34,783	38,291	45,073	23	23	29
Belfast	40,150	41,372	43,309	11,608	12,825	12,558	29	31	28
Birmingham			143,183			53,470			37
Bradford	116,422	115,992		19,988	18,311		17	16	
Bristol	89,059	92,667		23,506	25,238		26	27	
Carlisle			7,521			2,016			35
Chester			12,754			6,458			51
Dublin	48,297	48,953	46,270	46,000	48,302	26,120	95	99	56
Dundee	44,045	45,863	43,935	4,717	5,378	5,045	10	11	11
Edinburgh	84,226	86,184	83,253	10,171	27,380	24,542	30	32	29
Glasgow		167,021	171,188		125,055	51,940		74	30
Leeds	92,773	97,652	102,839	18,413	19,255	21,651	20	19	21
Liverpool	234,904	241,586	240,000	76,261	85,286	87,174	32	35	36
East London	261,027	277,959		103,740	118,200		41	42	
Kent (London)	134,576	135,688	142,332	41,837	48,313	48,717	31	36	34
Lambeth		237,214	229,620		83,805	89,029	35	38	39
Southwark and Vauxhall (London)		215,230	227,464		93,754	99,469		44	44
Manchester	221,551	232,675	241,293	61,256	62,570	63,286	27	27	26
Nottingham	61,281	62,097	61,911	19,442	20,771	20,507	32	33	33
Newcastle-on-Tyne	92,493	98,335	103,585	19,979	22,557	23,687	22	23	23
Oxford			11,750			4,725			40
Portsmouth			48,706			16,681			34
Baltimore	U.S.A. 132,433	135,655	167,367	27,915	33,486	36,143	21	24	22
Boston	367,214			118,943			33		
Brooklyn	290,722			153,326			53		
Buffalo			126,002			39,054			31
Cambridge			50,208			9,687			19
Chicago	455,372		605,819	190,185		255,442	41		42
Cincinnati	134,343			12,347			9		
Cleveland		111,417	124,073		23,568	27,587		21	22
Detroit	80,807	81,037		20,676	19,914		25	24	
Montreal	Canada 112,781	161,139		24,470	33,333		21	21	
New York	U.S.A. 609,648	702,737		114,583	127,085		19	18	
Nashville			22,462			16,019			64
Newark			2,985			1,285			43
Philadelphia	491,049		523,967	203,800		165,247	42		32
Pittsburgh	125,000			26,833			16		
Providence			91,086			17,063			19
St. Louis				69,331		70,251			
St. Paul	61,358	62,143	74,000	7,816	7,694	7,304	12	12	10
Spring Valley, San Francisco	U.S.A. 315,914								
Toronto	Canada 85,455		91,955	35,860		36,510	42		40

Special Fees.

Name of City, &c.	Daths.	Building purposes.	Gardens.	Gas Engines.	Stock.	Steam Engines.	Motors.	Urinals.	Washhand Basins.	Water Closets.
Adelaide										
Melbourne										
Sydney	Nil	½d. per cubic yd. on cubical contents	10/- per 1,000 super. sq. ft.	5/- per 2 h.p.	10/-	10/- per h.p.	40/- per ½ h.p.	Nil	Nil	Nil
Belfast		2d. to 1½d. per sq. yd.		2/6 per h.p.	5/- to 10/-	20/- per h.p.		5/- to 50/-	5/- to 60/-	7/6 to £3
Bradford	3/ to 12/-	6/8 per cent. on contract	20/- to 40/-		5/-			5/-		20/-
Dublin			Special agreement	3/- to 5/- per h.p.	20/- to 40/-					
Dundee		1 per cent. on cost			8/6	30/- per h.p.		20/-		20/-
East London										
Edinburgh			10/6 to 21/-		6/-	Up to 3 h.p. 42/-				
Kent (London)										
Leeds					5/-			10/5		5/4
Liverpool		4d. in the £ on the building, or 6s. per £100 on contract	10/- per 100 sq. yds		5/-					
Manchester	10/-	4d. per sq. yd. of brick	10/- per 800 sq. yds		10/-					10/-
Nottingham		1d. to 2d. per sq. yd.		Meter only	5/-	Meter only	Not allowed.	Meter only		4/- to 12/-
Newcastle-on-Tyne										6/- to 10/-
Southwark & Vauxhall (London)										4/- to 12/-
Baltimore, U.S.A.	41/8				0/3	12/6 per h.p.				
Brooklyn	12/6	2½d. per 1,000 bricks			8/4					8/4
Boston		3½d. per 1,000 bricks				25/- per h.p.				20/10 to 41/8
Chicago	12/6	2½d. per 1,000 bricks	12/6 per 1,000 sq. feet		10/5	16/8 per h.p.		4/2	6/3	12/6
Detroit										
Montreal, Canada		3d. per 1,000 bricks			8/4	20/2 per h.p.		4/2		10/8
New York, U.S.A.*		5d. per 1,000 bricks, 1/3 per 100 yards for plastering			4/2 to 8/4	41/8 per h.p.		8/4		20/10
Philadelphia										
Pittsburgh	From 10/5	5d. per 1,000 bricks	From 33/4		10/5	14/7 per h.p.		From 6/3 to 33/2	12/6	From 12/6 to 5/4/2
St. Louis		5d. per 1,000 bricks, ½d. per sq. yard for plastering	8/9 for 25 ft. frontage		12/6	1/8 per sq. ft. of fire surface				20/10 to 41/8
St. Paul	8/4	5d. per 1,000 bricks	12/6 for 50 ft.	20/10 for 7 h.p.	8/4	16/8 per h.p.	20/10	12/6		8/4
Spring Valley (San Francisco), U.S.A.	1/8 to 3/9	6d. per 1,000 bricks		4/2 to 29/2 h.p.	1/3	4/2 to 29/2 per h.p.		5d. to 1/8		1/- to 3/6
Toronto, Canada		2½d. per barrel of lime	From 16/8 @ 1,000 feet	25/- per h.p.	4/2	29/2 per h.p.		20/10	8/4	20/10

NOTE.—Where no amounts are specified under the above headings the required information has not been furnished.

* These denote that the information as requested has not been furnished, but compiled from Annual Reports.

Analysis of Approximate Cost of Water Main Reticulation in the City of Sydney and Suburbs, and the Percentage of Revenue on Cost.

District.	1892.						
	Mileage of Mains.	Properties Liable.	Annual Revenue.	Annual Revenue per Mile.	Annual Revenue per Property	Approximate Cost.	Per Cent. on Cost.
			£ s. d.	£ s. d.	£ s. d.	£ s. d.	
Alexandria.....	8.6	1,717	1,671 19 6	194 8 0	0 17 7	6,716 18 8	24.8
Ashfield.....	32.8	2,514	3,747 7 0	114 4 9	1 9 9	30,635 0 4	12.2
Auburn.....	4.9	191	163 8 8	33 6 0	0 17 0	2,205 5 0	7.4
Balmain.....	30.7	5,425	5,495 4 9	146 8 4	1 0 2	32,105 7 0	14.0
Botany.....	3.9	265	260 9 0	66 15 2	0 19 7	3,697 8 0	7.0
Barwood.....	22.2	1,335	2,349 11 2	105 16 7	1 15 4	20,125 0 0	11.1
Campbelltown.....	5.1	211	381 11 10	74 16 4	1 16 0	4,272 17 0	8.4
Campordown.....	10.0	1,466	1,476 2 9	147 12 2	1 0 0	9,046 16 8	16.3
Canterbury.....	5.5	234	232 18 8	42 6 9	0 19 9	3,841 0 0	6.0
City of Sydney.....	144.8	23,253	75,240 19 2	519 12 0	3 4 7	144,605 14 0	52.0
Concord.....	10.5	385	592 19 5	56 9 2	1 10 9	8,999 4 0	6.5
Darlington.....	3.2	723	857 4 3	267 18 7	1 3 8	1,886 16 0	45.4
Drummoyne.....	6.3	295	392 13 8	62 6 7	1 6 7	5,061 13 6	7.7
Enfield.....	6.3	290	348 3 2	55 5 0	1 4 0	4,265 0 0	8.3
Five Dock.....	6.0	149	227 14 0	34 8 0	1 10 4	8,926 8 0	2.5
Glebe.....	21.6	3,651	4,640 9 7	214 16 7	1 5 4	16,734 2 4	27.7
Granville.....	15.4	759	1,041 10 10	67 12 4	1 7 4	16,980 0 0	6.3
Hunter's Hill.....	9.5	465	1,015 18 8	106 18 7	2 3 7	7,971 4 0	12.7
Hurstville.....	13.2	479	£20 2 11	46 19 4	1 5 9	8,434 0 0	7.3
The Islands.....	1.1	22	494 9 0	449 9 0	22 9 6	3,000 0 0	16.4
Kogarah.....	6.7	316	399 10 7	59 12 5	1 5 2	5,372 6 6	7.4
Leichhardt.....	41.0	4,301	4,127 12 3	100 18 4	0 18 0	35,341 0 0	11.7
Liverpool.....	12.8	455	1,360 10 9	106 5 0	2 18 9	10,364 16 4	13.1
Macdonaldtown.....	5.3	1,231	987 15 4	185 15 9	0 16 0	4,222 4 0	23.3
Marrickville.....	30.8	3,038	3,514 8 7	114 2 0	1 3 0	28,377 0 0	12.3
Newtown.....	25.5	4,251	5,002 7 3	196 3 2	1 3 0	26,541 12 0	18.8
North Botany.....	6.7	318	237 10 7	35 8 9	0 14 9	2,673 18 0	8.8
North Sydney.....	37.2	3,435	5,651 9 5	151 18 10	1 12 9	38,730 15 0	14.5
Paddington.....	27.4	3,912	5,767 18 2	210 10 0	1 9 4	26,800 0 0	21.5
Petersham.....	23.3	2,447	3,236 17 2	138 18 2	1 6 4	20,299 4 0	15.9
Prospect and Sherwood.....	1.15	37	50 19 6	44 5 2	1 7 4	1,512 3 0	3.3
Randwick.....	20.5	1,149	2,506 10 8	120 6 2	2 3 7	17,315 15 0	14.4
Redfern.....	23.9	4,680	12,093 15 4	506 0 0	2 11 7	22,532 7 0	53.6
Rockdale.....	20.6	989	1,160 14 5	56 6 9	1 3 4	17,877 0 0	6.4
Rookwood.....	3.2	170	270 14 1	84 12 10	1 11 9	2,362 9 0	11.4
Ryde.....	5.9	303	382 4 8	64 15 4	1 5 2	4,778 8 0	7.1
St. Peters.....	9.0	1,018	872 11 0	96 18 9	0 17 0	8,546 2 4	10.2
Strathfield.....	9.7	437	1,111 17 5	114 12 2	2 10 9	9,900 17 0	11.2
Waterloo.....	12.2	1,994	2,167 13 0	177 13 4	1 1 7	11,003 7 0	19.6
Waverley.....	18.4	1,997	3,003 14 3	163 4 9	1 10 0	14,889 5 4	20.1
Willoughby.....	11.5	338	382 9 10	33 5 2	1 2 7	7,148 10 6	5.3
Woollahra.....	24.8	2,223	4,266 12 11	172 0 9	1 18 2	19,048 10 0	22.3
Total.....	739.05	82,928	158,472 7 5	214 8 8	1 18 2	674,547 4 6	23.5

ANALYSIS of Approximate Cost of Water Main Reticulation in the City of Sydney and Suburbs and the Percentage of Revenue on Cost—*continued.*

District.	1893.						
	Mileage of Mains.	Properties Liabie.	Annual Revenue.	Annual Revenue per Mile.	Annual Revenue per Property.	Approximate Cost.	Per Cent. on Cost.
			£ s. d.	£ s. d.	£ s. d.	£ s. d.	
Alexandria.....	8.64	1,833	1,525 14 3	172 8 2	0 16 8	6,729 9 0	22.6
Ashfield.....	33.1	2,634	3,390 8 5	102 14 9	1 5 9	30,720 0 0	11.03
Auburn.....	5.1	213	154 12 6	30 6 5	0 14 6	2,302 0 0	6.7
Balmain.....	30.7	5,479	5,758 17 11	187 11 7	1 1 2	32,107 18 6	17.9
Botany.....	4.4	363	329 18 8	74 19 7	0 18 2	3,723 8 0	8.8
Burwood.....	22.6	1,419	2,033 18 9	89 19 9	1 8 8	20,311 18 0	10.0
Campbelltown.....	5.2	214	394 17 0	75 18 7	1 16 11	4,312 17 0	9.1
Camperdown.....	10.0	1,475	1,387 0 5	138 14 0	0 18 9	9,047 0 0	15.3
Canterbury.....	5.5	223	198 0 0	36 0 0	0 17 9	3,841 0 0	5.1
City of Sydney.....	146.3	23,217	72,004 13 5	492 3 4	3 2 3	144,888 0 0	49.6
Concord.....	11.8	382	494 18 0	41 1 9	1 5 11	9,416 0 0	5.2
Darlington.....	3.2	747	830 17 0	259 12 2	1 2 3	1,887 0 0	44.0
Drummoyne.....	6.8	384	409 3 3	60 3 2	1 6 6	5,366 0 0	7.6
Enfield.....	6.5	302	333 9 0	52 1 5	1 2 5	4,365 0 0	7.7
Five Dock.....	6.9	155	225 16 0	32 14 5	1 9 1	8,926 8 0	2.5
Glebe.....	21.9	3,660	4,598 2 11	209 0 0	1 5 1	16,787 0 0	26.2
Granville.....	15.9	789	1,186 18 8	74 3 7	1 10 1	16,695 0 0	7.1
Hunter's Hill.....	9.6	466	1,122 10 7	116 18 4	2 8 2	8,081 0 0	13.8
Hurstville.....	13.4	510	571 17 4	42 13 7	1 2 5	8,529 16 0	6.7
The Islands.....	1.1	24	342 14 0	519 13 0	4 5 7	3,000 0 0	11.4
Kogarah.....	6.8	339	355 7 5	52 5 2	1 0 11	5,395 0 0	6.5
Leichhardt.....	41.2	4,321	3,484 13 3	84 11 7	0 16 1	35,373 0 0	9.8
Liverpool.....	12.9	446	936 6 4	72 0 4	2 2 0	10,395 0 0	9.0
Macdonaldtown (now Erskineville) ...	5.4	1,238	983 12 3	182 3 0	0 16 0	4,255 0 0	23.1
Marrickville.....	31.3	3,352	3,244 1 4	103 12 9	0 19 5	28,777 0 0	11.2
Mosman.....	8.2	260	411 0 5	50 0 0	1 10 0	7,000 0 0	5.8
Newtown.....	25.6	4,419	4,463 9 1	174 7 0	1 0 2	26,572 0 0	16.9
North Botany.....	7.3	383	213 1 4	29 3 6	0 11 2	2,867 0 0	7.4
North Sydney.....	29.0	3,388	4,891 2 2	165 4 0	1 9 0	30,195 0 0	16.1
Paddington.....	27.0	4,090	5,131 12 10	183 1 10	1 5 1	27,110 0 0	18.9
Petersham.....	23.7	2,301	2,946 3 3	124 6 2	1 5 7	20,599 0 0	14.3
Prospect and Sherwood.....	1.2	68	61 10 0	51 5 0	0 18 0	1,512 0 0	4.0
Parramatta.....	5	17	13 7 6	26 15 0	0 15 10	850 0 0	1.5
Randwick.....	21.1	1,292	2,320 12 0	109 19 7	1 16 0	17,573 0 0	13.2
Redfern.....	23.9	4,825	9,768 12 0	408 14 0	2 0 6	22,532 7 0	43.3
Rockdale.....	20.8	1,102	1,031 6 4	49 11 7	0 18 8	18,017 0 0	5.7
Rookwood.....	3.6	186	393 8 0	105 2 2	2 2 4	2,582 9 0	15.2
Ryde.....	6.2	309	496 12 0	80 2 2	1 12 2	4,823 0 0	10.3
Richmond.....	9.0	198	357 4 8	39 13 10	1 16 0	6,000 0 0	5.8
St. Peters.....	9.2	1,089	773 6 5	84 1 0	0 14 2	8,710 0 0	8.8
Strathfield.....	9.9	514	1,029 18 3	104 0 7	2 0 0	9,990 0 0	10.3
Waterloo.....	12.4	2,028	1,926 13 0	156 3 6	0 19 0	11,108 0 0	17.3
Waverley.....	18.6	2,118	2,770 14 0	149 0 0	1 6 1	15,098 0 0	18.3
Willoughby.....	14.7	527	549 15 0	37 0 9	1 0 9	8,637 0 0	6.3
Woollahra.....	25.4	2,312	3,957 4 0	155 16 0	1 14 3	19,377 10 0	20.4
Total.....	764.5	85,611	143,786 5 7	194 12 2	1 14 7	696,390 0 6	21.7

Approximate Mileage of the various sized Mains, City of Sydney and Suburbs, &c.

	3"	4"	5"	6"	8"	9"	10"	12"	15"	18"	20"	24"	Miles.
Alexandria .....	...	5.1	...	2.5	...	1.0	...	...	...	...	...	...	8.6
Ashfield .....	...	17.1	...	11.8	...	1.2	...	2.7	.25	...	...	...	33.05
Auburn .....	...	1.8	...	3.1	...	.2	...	...	...	...	...	...	5.1
Balmain	1.2	21.2	...	7.1	...	1.2	...	...	1.4	...	...	...	32.1
Botany .....	...	2.0	...	1.1	...	1.3	...	...	...	...	...	...	4.4
Burwood .....	...	12.85	...	6.3	...	2.2	...	1.25	...	...	...	...	22.60
Canterbury .....	...	3.4	...	2.1	...	...	...	...	...	...	...	...	5.5
Campbelltown .....	...	2.1	...	3.1	...	...	...	...	...	...	...	...	5.2
Camperdown .....	.5	6.7	...	1.2	...	1.4	...	.2	...	...	...	...	10.0
City of Sydney	6.0	24.0	2.0	34.0	.5	10.0	.4	15.0	16.0	.75	4.0	1.75	114.4
Concord .....	...	5.9	...	3.8	...	.1	...	...	...	2.0	...	...	11.8
Darlington .....	.2	2.4	.4	.1	...	.1	...	...	...	...	...	...	3.2
Drummoyne .....	...	3.0	...	2.0	...	1.7	...	.1	...	...	...	...	6.8
Enfield .....	.1	4.8	...	1.2	...	.25	...	...	...	...	...	...	6.35
Five Dock .....	...	1.8	...	1.6	...	1.3	...	1.3	.9	...	...	...	6.9
Glebe	3.0	11.2	...	5.5	...	2.4	...	...	...	...	...	...	22.1
Granville .....	...	11.2	...	4.4	...	...	...	...	2.6	...	...	...	18.2
Hunter's Hill .....	...	4.5	...	1.9	...	2.5	...	.7	1.6	...	...	...	11.2
Hurstville .....	...	8.1	...	5.2	...	...	...	...	...	...	...	...	13.3
The Islands .....	.3	.2	...	.6	...	...	...	...	...	...	...	...	1.1
Kogarah .....	...	3.2	...	2.9	...	.7	...	...	...	...	...	...	6.8
Leichhardt .....	...	31.1	...	6.0	...	1.5	...	.75	1.5	...	...	...	40.85
Liverpool .....	...	4.7	...	3.2	...	4.9	...	...	.1	...	...	...	12.9
McDonaldtown (now Erskineville) .....	...	4.0	...	.6	...	...	...	.7	...	...	...	...	5.3
Marrickville .....	...	19.5	...	8.1	...	1.4	...	...	2.3	...	...	...	31.3
Mosman .....	...	3.7	...	4.0	...	.5	...	...	...	...	...	...	8.2
Newtown .....	.3	17.2	...	5.3	...	2.6	...	.6	...	...	...	...	26.0
North Botany .....	...	1.4	...	4.5	...	1.2	...	.2	...	...	...	...	7.3
North Sydney .....	...	16.75	...	9.0	...	.75	.5	.5	1.5	...	...	...	29.00
Paddington .....	.3	11.5	.15	14.0	.8	.6	.1	.25	...	...	.5	.2	28.40
Parramatta .....	...	...	...	...	...	.5	...	...	...	...	...	...	.5
Petersham .....	...	14.0	...	7.0	...	.5	...	1.6	...	.7	.1	...	23.9
Prospect and Sherwood .....	...	.3	...	.2	...	.5	...	...	.03	.2	...	...	1.23
Randwick .....	...	13.2	...	5.3	...	1.1	...	1.5	...	...	...	...	21.1
Redfern	1.0	12.6	...	6.0	...	2.2	...	.9	1.6	...	...	...	24.3
Richmond	7.95	.25	...	.8	...	...	...	...	...	...	...	...	9.0
Rockdale .....	.1	10.7	...	5.0	...	2.7	...	2.3	...	...	...	...	20.8
Rookwood .....	...	1.4	...	1.0	...	...	...	1.2	...	...	...	...	3.6
Ryde .....	...	3.9	...	1.6	.2	.5	...	.04	...	...	...	...	6.24
St. Peters .....	...	5.4	...	1.5	...	1.25	...	1.0	...	...	...	...	9.15
Strathfield .....	...	5.0	...	6.0	...	...	...	.3	...	...	...	...	11.3
Waterloo .....	.05	8.25	...	3.0	...	1.0	...	...	...	...	...	...	12.3
Waverley .....	...	12.3	...	4.8	...	.75	...	.6	...	...	...	...	18.45
Willoughby .....	...	9.8	...	4.7	...	...	.25	...	...	...	...	...	4.75
Woollahra .....	.25	12.6	...	10.0	...	2.4	...	.1	...	...	1.0	...	26.35
Totals	21.25	372.10	2.55	213.10	1.5	54.40	1.25	33.79	29.78	3.65	5.6	1.95	740.92

The above does not include Trunk or Pumping Mains.

Appendix.

MONTHLY ANALYSIS of the Sydney Water Supply; by WILLIAM M. HAMLET, Government Analyst, Government Laboratory, Sydney.

Date.	Marks or Number of Sample.	Description.	Expressed in Grains per Gallon.				Expressed in Parts per Million.				Appearance in standard 2 foot Tube.	Poisonous Metals.	General observations on character of water.	
			Total Solid Residue, dried at 220°	Chlorine as Chlorides.	Nitrogen as Nitrates and Nitrates	Phosphates from animal impurity.	Free Ammonia.	Albuminoid Ammonia.	Oxygen absorbed in 15 min.	Oxygen absorbed in 3 hours.				
1898.		SYDNEY WATER SUPPLY.												
30 Jan.	..	Near Inlet, Prospect Reservoir	0.16	2.4	Trace	None	None	.08	.38	80	Clear	None	The samples from Crown-street Reservoir and Randwick, approach very closely the maximum degree of purity obtainable in the supply; and the water generally is of its usual excellent character.	
"	"	Basin, head of canal	0.16	2.4	do	do	do	.08	.38	80	do	do		
"	"	Service Tap, Randwick	0.16	2.4	do	do	do	.05	.28	60	do	do		
24 Feb.	..	Crown-street Reservoir	0.16	2.4	do	do	do	.05	.28	60	do	do	The water maintains its usual excellent character, and ranks as a first-class drinking water.	
"	"	Crown-street Reservoir	0.15	2.10	do	do	do	.08	.36	72	do	do		
"	"	Service Tap, Randwick	0.72	2.40	do	do	do	.06	.36	72	do	do		
"	"	Near Inlet, Prospect Reservoir	0.30	2.35	do	do	do	.08	.36	80	do	do	The organic matter in this water has undergone oxidation by running through open conduits, and thence flowing into the mains; the change is well illustrated this month by the diminution in the amount of the albuminoid ammonia; whereas, the chlorine not being subject to oxidising influences, remains a fixed quantity from the time it leaves the Reservoir until it reaches the consumer. The solids at Randwick is, for some unexplained cause, more than usually charged with oxide of iron.	
"	"	Basin, head of canal	0	2.35	do	do	do	.09	.36	80	do	do		
17 Mar.	..	Crown-street Reservoir	5.88	2.35	do	do	do	.18	.35	66	do	do		
"	"	Service Tap, Randwick	4.86	2.35	do	do	do	.04	.35	60	do	do	The monthly analysis shows that no important change has taken place, the water maintaining its usual degree of excellence.	
"	"	Near Inlet, Prospect Reservoir	4.10	2.35	do	do	do	.10	.38	90	do	do		
"	"	Basin, head of canal	6.10	2.35	do	do	do	.10	.36	86	do	do		
14 April	..	Crown-street Reservoir	6.30	2.35	do	do	do	.06	.32	66	do	do	There is nothing to call for special comment beyond the fact that the water is undoubtedly of excellent quality.	
"	"	Service Tap, Randwick	6.44	2.36	do	do	do	.05	.32	66	do	do		
"	"	Near Inlet, Prospect Reservoir	6.15	2.35	do	do	do	.10	.35	73	do	do		
"	"	Basin, head of canal	6.30	2.35	do	do	do	.10	.35	73	do	do	The quality and composition of the water supplied to the City of Sydney was ascertained after a careful analysis of average samples taken at various points along the line of delivery, as well as from the chief storage Reservoir. These results indicate a water of great organic purity, fit for drinking and all household purposes.	
15 May	..	Crown-street Reservoir	6.30	2.40	do	do	do	.06	.30	70	do	do		
"	"	Service Tap, Randwick	6.02	2.40	do	do	do	.06	.30	70	do	do		
"	"	Near Inlet, Prospect Reservoir	5.06	2.40	do	do	do	.07	.35	72	do	do	The monthly analysis for July, shows that the Sydney Water Supply maintains its usual high standard of excellence as a drinking water.	
"	"	Basin, head of canal	6.00	2.40	do	do	do	.07	.35	72	do	do		
13 June	..	Crown-street Reservoir	6.16	2.35	do	do	do	.06	.35	76	do	do		
"	"	Service Tap, Randwick	6.72	2.35	do	do	do	.06	.35	76	do	do	These results indicate a water fit for drinking, and all other domestic purposes.	
"	"	Near Inlet, Prospect Reservoir	6.04	2.80	do	do	do	.08	.40	78	do	do		
"	"	Basin, at head of canal	6.04	2.30	do	do	do	.08	.40	78	do	do		
13 July	..	Crown-street Reservoir	6.02	2.4	.009	do	do	.08	.35	78	do	do	The monthly analysis for July, shows that the Sydney Water Supply maintains its usual high standard of excellence as a drinking water.	
"	..	Service Tap, Randwick	5.90	2.4	.009	do	do	.07	.32	75	do	do		
"	..	Near Inlet, Prospect Reservoir	5.90	2.4	.009	do	do	.10	.35	75	do	do		
"	..	Basin, at head of canal	5.90	2.4	.009	do	do	.10	.35	75	do	do	These results indicate a water fit for drinking, and all other domestic purposes.	
16 Aug	..	Crown-street Reservoir	5.88	2.3	.009	do	do	.10	.21	63	Clear, peaty tint	do		
"	"	Service Tap, Randwick	6.02	2.3	.009	do	do	.09	.20	60	do	do		
"	"	Near Inlet, Prospect Reservoir	6.30	2.3	.009	do	do	.10	.21	63	do	do	No change in the composition and quality of the water since last month to call for any special remark.	
"	"	Basin, at head of canal	6.44	2.3	.009	do	do	.12	.21	63	do	do		
13 Sept	..	Crown-street Reservoir	6.12	2.4	Trace	do	do	.07	.35	80	Clear and bright	do		
"	"	Service Tap, Randwick	6.44	2.4	do	do	do	.10	.36	88	do	do	The Sydney Water Supply maintains its usual standard of excellence.	
"	"	Prospect Reservoir, near Inlet	5.30	2.4	do	do	do	.08	.36	85	do	do		
"	"	Basin, at head of canal	5.88	2.4	do	do	do	.08	.34	85	do	do		
11 Oct.	..	Crown-street Reservoir	6.30	2.40	do	do	do	.09	.35	80	Clear	do	These results indicate a water of undoubted purity, suitable alike for drinking and all household purposes.	
"	"	Service Tap, Randwick	6.30	2.40	do	do	do	.07	.35	80	do	do		
"	"	Near Inlet, Prospect Reservoir	6.44	2.40	do	do	do	.08	.32	75	do	do		
"	"	Basin, at head of canal	6.16	2.40	do	do	do	.08	.32	75	do	do	The quality of the water supplied to the City of Sydney is quite up to its usual standard of excellence. The water is suitable alike for drinking and for all household purposes.	
14 Nov.	..	Crown-street Reservoir	5.61	2.4	do	do	do	.06	.36	66	do	do		
"	"	Service Tap, Randwick	5.62	2.4	do	do	do	.06	.36	67	do	do		
"	"	Prospect Reservoir, near Inlet	5.61	2.4	do	do	do	.06	.28	64	do	do	The quality of the water supplied to the City of Sydney is quite up to its usual standard of excellence. The water is suitable alike for drinking and for all household purposes.	
"	"	Basin, head of canal	5.93	2.4	do	do	do	.05	.26	61	do	do		
19 Dec.	..	Crown-street Reservoir	6.56	2.4	do	do	do	.08	.32	70	Clear and bright	do		
"	"	Service Tap, Randwick	6.02	2.4	do	do	do	.07	.32	64	do	do		
"	"	Prospect Reservoir, near Inlet	6.20	2.4	do	do	do	.08	.34	77	do	do		
"	"	Basin, head of canal	6.30	2.4	do	do	do	.10	.36	70	do	do		

METROPOLITAN BOARD OF WATER SUPPLY AND SEWERAGE—WATER REVENUE ACCOUNT ENDING 31ST DECEMBER, 1893.

REVENUE.		£	s.	d.	EXPENDITURE.		£	s.	d.
To Balance brought forward				40,703	12	11			
	Water rates	118,728	1	5	<i>Maintenance.</i>				
	Meter accounts	29,029	5	11	By Repairs to machinery				
	New mains revenue	227	7	3	Repairs to mains				
	Building supply	2,263	12	6	Repairs to buildings				
	House supply	1,348	9	1	Repairs to reservoirs				
	Drilling fees	471	0	6	Working expenses and charges				
	Special fees	568	19	2	Coals				
	Plumbers' licenses	242	10	0	Meter and tap testing account ..				
	Plumbers and others	188	19	2	Rent				
	Rent received	350	9	8	Prospect and canal maintenance ..				
	Stock account	2,317	17	6	Campbelltown ..				
	Garden account	1,164	12	6	Liverpool ..				
	Meter testing account	1,579	9	6	Wages				
	Agistment	346	10	3					
	Royalty	25	4	0	<i>Management.</i>				
	Miscellaneous receipts	111	3	10	President's salary and Board fees ..				
		158,963	12	3	Salaries				
					Stationery and Printing				
					Advertising and incidental expenses ..				
					Depreciation account				
					Interest on Debentures—				
					£80,000, twelve months, to December 1893				
					Interest on Loan Account—				
					£2,499,970, twelve months, to December, 1893, at 4% ...				
					£433,949 17s. 9d., twelve months, to December, 1892, at 3½%.				
					119,187 0 10				
					158,840 9 7				
					39,289 15 0				
					£198,130 4 7				
					23,343 13 0				
					13,798 0 7				
					2,511 15 2				
					4,000 0 0				
					99,998 16 0				
					15,188 4 10				
					Balance				
					£198,130 4 7				
					23,343 13 0				
					13,798 0 7				
					2,511 15 2				
					4,000 0 0				
					99,998 16 0				
					15,188 4 10				
					Balance				
					£198,130 4 7				

Sydney, 12th February, 1894.

MELBOURNE GREEN,
Accountant.

METROPOLITAN BOARD OF WATER SUPPLY AND SEWERAGE—SEWERAGE REVENUE ACCOUNT TO 31st DECEMBER, 1893.

REVENUE.		£	s.	d.	£	s.	d.	EXPENDITURE.		£	s.	d.	£	s.	d.	
Balance brought forward...					32,553	11	7									
To Sewerage rates		89,392	13	9				<i>Maintenance.</i>								
New sewers		1,865	9	9				By Working expenses and charges		161	2	6				
Sewerage service		977	3	2				Repairs to sewers		511	14	6				
Sale of plans		1,224	2	6				Rents		1,069	13	6				
Drainers' licenses		245	0	0				Wages		14,216	10	5				
								Inlet and outlet house expenses		679	1	7				
Agistment sewage farm	£ s. d.	114	18	6				Sewage farm maintenance		968	8	2			17,605 10 8	
Sale of produce		108	5	7												
Sale of live stock		136	15	8				<i>Management.</i>								
								President's salary and Board fees		859	3	4				
Drainers and others		359	19	9				Salaries		7,270	14	11				
Rents received		256	8	1				Stationery and printing		550	4	1				
Compulsory drainage		124	8	0				Advertising, incidental expenses, &c.		806	14	3			9,486 16 7	
Miscellaneous receipts		57	0	5				Depreciation							586 15 11	
								Interest on—								
		94,504	15	1				City Council Debentures ...		62,000	0	0—12 months at 6%	3,720	0	0	
Less—								" " "		38,000	0	0—12 " 5%	1,900	0	0	
Rates cancelled		843	12	3				Redfern Council "		30,000	0	0—12 " 4%	1,200	0	0	
					93,661	2	10									
								Loans 43 V. 11		400,000	0	0—12 " 4%	16,000	0	0	
								" 46 V. 23		100,000	0	0—12 " 3½%	3,500	0	0	
								" 46 V. 26		20,000	0	0—12 " 3½%	700	0	0	
								" 50 V. 28		250,000	0	0—12 " 3½%	8,750	0	0	
								" 52 V. 17		31,432	7	3—12 " 3½%	1,100	2	7	
										801,432	7	3				
								Sewage Construction Branch								
								loans to 31st December,								
								1892		233,129	7	8—12 " 3½%	8,159	9	6	
								Board's loan votes to 31st								
								December, 1892 ..		180,845	17	8—12 " 3½%	6,329	12	1	
								Debentures and overdrafts								
								paid		158,110	5	4—12 " 4%	6,324	8	2	
															57,683 12 4	
															85,362 15 6	
								Balance							40,851 18 11	
															£126,214 14 5	
															£126,214 14 5	

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Sydney, 12th February, 1894.

MELBOURNE GREEN,
Accountant

METROPOLITAN BOARD WATER SUPPLY AND SEWERAGE—BALANCE-SHEET—SEWERAGE, 31st DECEMBER, 1893.

DR.	£	s.	d.	£	s.	d.	Cr.	£	s.	d.	£	s.	d.
To amount advanced by Treasury—							By Government Sewerage Works to 30th November, 1889				903,062	5	9
From Loans, 30th November, 1889 ..	801,432	7	3				Sydney Municipal Council Works to 31st December, 1889	248,974	13	1			
„ Revenue, 30th November, 1889	101,629	18	6				Redfern						
				903,062	5	9	„ „ New Sewers.....	22,712	11	4			
„ Loans, to 31st December, 1892	233,129	7	8				„ „ „	7,287	8	8			
„ Revenue „ „ 1891	1,801	1	6				Randwick Sewerage Works				30,000	0	0
„ Loans „ „ 1893	58,042	9	3				Darlington Council Sewerage Works				9,571	19	5
				292,972	18	5	New Sewers (Government)				5,000	0	0
„ Waterloo Loan, 52 V. 17.....				9,578	0	0	„ (Board)				292,972	18	5
„ „ „ 53 V. 23, to 31st December, 1892	6,908	9	7				Ventilating Shafts				172,609	14	3
„ „ „ „ 1893	45	5	11				Lands				17,501	10	7
				6,953	15	6	New Buildings				340	6	8
„ General Loan, 54 V. 33	132,910	7	7				Sewage Farm Live Stock				2,707	9	6
„ „ „ „ 1893	20,693	1	0				Sundry Works.....	101	16	6	117	0	0
				153,603	8	7	„ Sowage Farm	2,768	5	1			
„ Western Suburbs Loan, 54 V. 33, to 31st Decem- ber, 1892	21,998	12	7				Flushing Hydrants.....				2,870	1	7
„ Western Suburbs Loan, 54 V. 33, to 31st Decem- ber, 1893	5,597	7	7				Working Plant and Tools.....				356	7	7
				27,596	0	2	Furniture and Fixtures				1,764	16	8
„ Macdonaldtown Loan, 53 V. 23, to 31st Decem- ber, 1892	5,590	7	11				Nozzles				1,310	6	0
„ Macdonaldtown Loan, 53 V. 23, to 31st Decem- ber, 1893	134	16	8				Stores				7	1	2
				5,725	4	7	Rates Outstanding				99	18	11
„ Paddington Loan, 53 V. 23, to 31st December, 1891.....				3,860	0	0	Accounts „				8,021	0	6
							Colonial Treasurer—				2,795	19	10
Debentures, City Council				100,000	0	0	Balance Cash Account						
„ Redfern Council				30,000	0	0	„ Trust Account				30,833	6	1
City Council Debentures and Overdraft paid by Treasury				158,110	5	4	„ Consolidated Revenue Vote, 1892				5	0	0
Contractors' Advance Account—Trust Fund				1,679	19	8	„ „ „ 1893				337	19	2
Outstanding Accounts due to Contractor				324	14	11					4,239	2	10
Rates Overpaid				1,180	6	2							
Balance as per Revenue Account				40,851	18	11							
											35,415	8	1
				1,735,498	18	0							
											1,735,498	18	0

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Sydney, 12th February, 1894.

MELBOURNE GREEN,
Accountant.

Report by Engineer on Ventilation of Sewers by McKenzie System.

Sydney, 1 March, 1892.

THE improved system of sewer ventilation by the agency of heat, as applied by Mr. McKenzie, was demonstrated by an experimental model of a reticulating system of $\frac{1}{2}$ scale, also on a section of the sewer on the Zeland Estate, Waterloo. The experiments, as carried out, were satisfactory so far as showing the power of draught caused by exhaustion and the application of same in exhausting the air from house drains and fittings, as well as from main and subsidiary sewers.

The application of heat as a factor in ventilation has been tried many years ago in England by lofty shafts with furnaces and other means, but were not generally considered a success, although there are instances where this method has been used successfully. A shaft with a coke furnace was erected at Rocdean; the effect of this was felt 3 miles away from the main shaft, the tested velocity showed at the rate of 100 feet per minute. The sewer, however, was practically sealed, as there were very few openings or junctions into it.

Ventilation by means of shafts containing a chamber, in which was a small furnace heated by a gas jet, in some cases at the top of the pillar, in others at the base, have been tried in a tentative way, and it is reported that the "extractor" is used by the London County Council, Richmond Corporation, and two Local Boards. The arrangement of the latest system, "Holman's," consists of a 6-inch shaft with a brass atmospheric burner, with a regulator and a patent burner protector, the whole enclosed in a series of ribbed cones and chambers of cast-iron so arranged as to retain the heat of the burner, in what is practically a furnace, forms a series of circuitous passages, through which the sewer air drawn from the sewer must pass, and is rendered harmless; this cone is superimposed by an outer cone of asbestos to prevent the radiation of heat. The foregoing represents the latest form of "exhauster."

Mr. Stayton, in his report to the New South Wales Government, states that the hot shafts tried in England affect the sewers for a short distance only—50 to 60 yards—and that they were rejected in Croydon recently, as they were found to be impracticable on account of the large quantity of gas consumed.

Mr. McKenzie's system consists of a shaft with a furnace placed in the base. The furnace consists of a fire-clay spherical shell perforated, and into which asbestos is loosely packed, below is placed an atmospheric blow-through burner consisting of a series of automatic blow-pipes. The chamber in which the shell is placed is also composed of fire-clay, the lining of shaft to full height is also composed of the same material, and external casing of iron annular space with asbestos packing completes the apparatus. Every precaution seems to have been taken to prevent radiation of heat. The patentee states that when the furnace is lighted the shell and asbestos is brought to a state of incandescence, and the furnace can be kept at a temperature of 1,200°. The work of the shaft in working order is stated to be 500,000 cubic feet extracted from the sewers in 24 hours, at a cost of 1s. 8d. per 24 hours at the present price of gas, viz., 5s. 6d. per 1,000 cubic feet. The work of the "Holman" extractor shaft is given at 60,000 cubic feet per 24 hours, at a cost of 6d. per 24 hours. The comparison as to the cost of extracting 50,000 cubic feet per 24 hours by the "Holman" would be as 4s. 2d. to 1s. 8d.

Mr. McKenzie states that one extractor of his system will serve effectually 1 mile of sewer 9 inches in diameter with house drains. If the shaft is capable of doing the work assigned to it the air of the mile of sewer, with lateral branches, would be changed every fifteen minutes. This would be a high state of efficiency if it could be obtained. This, however, has not yet been practically demonstrated.

From an examination of the working model, and observing the tests made, and with regard to the principles on which the system is based, I think it is an improvement on the existing system of sewer ventilation, which, although good results have been obtained from same, as shown by recent tests, it is, like all other systems, dependent upon natural forces, capable of improvement, and as sanitary science is a progressive one, I feel that if a system can be found which is not dependent upon a variable force for its effective working, such system might be tried in a tentative manner.

The patentee claims that the application of his system will result in a saving to householders as well as to the revenue of the Board; if these claims can be borne out by actual practice an important result will be attained. I would, however, point out that this system, like all others where heat is the medium of exhaust, must be carefully applied and carried out in all the details; for instance, the air inlets must be carefully proportioned, otherwise there would be a danger of the system being inoperative at the furthest limits also, if the sewer at any time became surcharged the air supply would be cut off, and the effect of the furnace would be nullified. The whole of the manholes and lampholes must be as airtight as possible; this would be more of an advantage than otherwise, especially in narrow streets. These are, however, contingencies which no doubt the patentee has provided for.

As there is every indication that the system would be an improvement, and could be successfully applied, I would suggest that a trial shaft be erected in connection with the Macdonaldtown and Newtown system of sewers. This system is not yet dealt with as regards ventilation, and is connected to the main sewer by a separate pipe, the limit of effect of the exhauster could be readily observed, and the efficiency and cost of the system be ascertained before being generally applied.

The Secretary.

J. M. SMAIL.

Further Report by Engineer on Ventilation of Sewers by McKenzie System.

23 November, 1893.

IN continuation of my former report on McKenzie system of sewer ventilation, I beg to submit the results of a prolonged system of testing in connection therewith. The time taken in the investigation was necessary in order to thoroughly investigate the efficiency of the system.

In order to have a practical test, a shaft, of neat design, was erected on the 24-inch outfall sewer in Macdonaldtown Park, with the consent of the trustees, and after some preliminary trials and alterations, incidental to all new systems, the patentee reported that the shaft was ready for testing. The tests were carried out by the officer-in-charge of ventilating shafts, comprising—anemometrical readings—temperatures of sewer and on surface, humidity of atmosphere and air, in sewer and shaft; tests for condition of sewer air *re* presence of hydrogen sulphide, also an examination by Mr. Smith as to presence of germs in air of sewer and air flowing from shaft. I have endeavoured to make the investigation as far reaching as possible, and feel confident that the efficiency of the shaft as a ventilating power and germicide has been fully thrashed out.

Area of locality dealt with.

The area traversed by the branch sewers and controlled by the shaft is about 20 acres, the sizes varying from 9 inches to 24 inches in diameter, the aggregate capacity being 9,000 cubic feet. The grades being all towards the shaft.

Condition of Sewers when shaft is not working.

I personally inspected the sewers when shaft was not working, the manholes being kept closed down for some time so as to bring the sewers into a condition of "unventilated." The outflow of air through shaft by natural ventilation, as tested by anemometer, was 11,400 cubic feet per hour—the condition of same being very offensive. This would equally apply to the air in the sewers. Test papers moistened in a solution of acetate of lead were hung in different points of the sewer. These showed conclusively that hydrogen sulphide was present to an extent dangerous to health.

Any draught which existed was close to the shaft, and points remote from same the air was quite stagnant. There would be periods when there would be no draught due to natural causes, when the temperature of sewer and atmosphere would approach equality in the absence of wind, as on a calm day.

Condition when furnace was working.

I also personally examined the sewers under conditions when shaft was working, and found a marked change, although I have no doubt the comparison would have been better if furnace had been working for a longer period prior to my inspection. The conditions of ventilation were very much improved, and the absence of any noxious smell was verified by submitting test papers, previously referred to, to exposure to sewer air; the air issuing from outlet of shaft was warm and entirely free from odour. The air currents were well defined by anemometrical observations. The humidity of sewer was considerably less after shaft had taken up the work as compared with same when shaft was not working, the humidity in the first instance varying from 86 to 87, while that in the latter varied from 89 to 100, or saturation point.

The greatest difficulty was in ascertaining the correct temperature of the furnace chamber, a suitable pyrometer not being available; after some trouble an instrument was obtained, which gave fairly correct results. On one trial at which I was present the registered temperature *over* the furnace was 700°, this, however, rapidly decreased as the outlet was approached. Midway temperature was 220°, at outlet the temperature varies from 140° to 172°.

The temperature of 700° would represent the radiant heat from furnace rather than that of the air passing up the shaft, and I do not think that the average temperature could be taken higher than 188° to 200°. This point is important in considering the shaft as a germicide.

As a means of ventilation the accompanying table shows very favourably. The limits of effect were determined after several trials, and the most remote were found to be on railway premises about 24 chains distant from shaft, the average air-flow being equal to 2,044 cubic feet per hour. This line is almost in a direct line from shaft. In other cases where the lines are more ramified the results are better.

The table also shows the number of times the air of sewers on zone under investigation is calculated to be changed. It will be observed that depth of flow of sewage on the main pipe sensibly increases the flow of air towards the shaft, thereby assisting it. The calculated period of change over 40 acres is 2.25 times in the hour or about every 26 minutes. I do not think that this could be maintained as a general thing, as at times there are retarding influences at work in sewers which would reduce this, but even if the air were changed only once in the hour the condition of the sewer air would not be unsatisfactory.

The question of minimising the consumption of gas for furnace was prominent all through the investigations, and the results shown are from an expenditure of an average of 37.5 cubic feet per hour—a small amount in comparison to work done,

As already stated, the air of the sewers dealt with was free from hydrogen sulphide and other noxious smells, and, in order to push investigation further, the air in sewer and issuing from shaft was examined by Mr. Smith, who has been engaged in a biological examination of the Board's sewers. The results show that, while furnace was working, on first test the number of organisms were reduced from 35 to 26, or nearly 26, per cent.; on second trial the reduction was from 30 to 23 organisms, or little over 23 per cent.; third trial, furnace not working, the number in sewer was two less than previously, viz., 28, and air at base of shaft showed 25, or a reduction of 3, or little over 10 per cent. That the shaft does not fulfil the conditions of a perfect germicide is placed beyond a doubt by the mere fact that the velocity of the air, due to the heated column, does not admit of an exposure of sufficient duration to destroy the whole of the germs, the minimum measured velocity entering shaft below furnace being 11.31 per second; this, however,

however, would be the same with any similar contrivance. According to an authority on the subject high temperatures are destructive of the lower fungi; the effect of heat depends on the degree of temperature, and on its duration. The temperature necessary to cause the death of the organism varies also very greatly according to the other conditions of life, and more especially according to the resisting power of the species in question. The chief difference is found between bacteria, which do not form spores, and those which are spore-bearing. The former are, as a rule, killed when in a moist state or in fluids by exposure for one or two hours to a temperature of 118° to 140° Fah. Hot air at a temperature of 248° Fah. does not completely destroy spores of mould fungi after half an hour's exposure. Another authority states that spores of bacilli are destroyed after exposure to hot air for four hours at a temperature of 220° Fah., also that the effect of passing sewer air through a heated chamber is to break up the contained gases and promote the tendency of the individual elements in their nascent state to seize upon the oxygen contained in the air, and as there is always a certain amount of humidity in the air of sewers the dilute gases all the more readily break up. That the action of the furnace on the air brought in contact with it is to break up the gases is evident from the chemical test to which the air was submitted, and the reduction of the number of germs as compared with air in sewer might indicate that same were destroyed in coming into close contact with the incandescent material, which showed by pyrometer to be at a temperature of 700° Fah. The residents in the immediate locality of the shaft complain of the smell from same when furnace is stopped, but when working the complaints cease.

As before stated, the consumption of gas was kept at a minimum in order to lighten cost of system, and, for comparison, I have had a statement of cost of various installations prepared, viz. :—

- (a) McKenzie system combined with water sprays.
- (b) Plenum vacuum system combined with water sprays.
- (c) Plenum vacuum.

The statements are on the basis of dealing with 100 acres. Capacity of sewers, 20,000 cubic feet.

- (a) It is found that it would be more economical to work the furnace in conjunction with the water sprays, as air feeds at terminal points. The first cost is estimated at £254. Repayment in fifty and fifteen years. Maintenance and gas consumption, £95 7s. 6d. per annum.
- (b) Plenum vacuum and sprays combined. First cost, £219. Repayment in fifteen years, and maintenance £26 13s. 11d. per annum.
- (c) Plenum vacuum system. First cost, £900. Repayment in fifteen years, and maintenance £95 19s. per annum.

The cost per acre per annum being (a) 19s., (b) 5s. 4d., and (c) 19s. 2d.

It is, however, pointed out that the consumption of water in connection with the spray inducts will be, with McKenzie system, 2,761,900 gallons, and with plenum vacuum and sprays, 4,419,000 gallons. If the systems were generally carried out over the area under the Board's jurisdiction the quantity of water used annually would be a serious item in periods of prolonged drought, when it would not be advisable to use the water supply for such purpose. If such contingency arose we would have for a time to depend upon the natural forces for air-feeds to exhaust shafts.

I do not see that it is possible to adopt the "furnace" shaft as a general system, as it would be impossible in some localities to obtain sites in places where it could be worked to the best advantage, without incurring considerable expense. The existing city system, with its numerous untrapped inlets, could not be adapted to it, as the limited effect under such conditions would not justify the cost. I am of opinion, however, that in the suburban areas where configuration of the ground will admit of sections of the system flowing into one outfall being grouped, as in Macdonaldtown, the system can be applied with advantage. The main outfall to Bondi presents a favourable place for the erection of shafts of this character. The ventilation of this line must be taken in hand in the near future, and the erection of exhaust shafts on same without some means of destroying the noxious gases, which must necessarily be discharged from the sewer, will, I fear, meet with much opposition from the public in the locality of same. Providing means for destroying the gases will admit of comparatively low shafts being constructed at a reduced cost, as compared with tall shafts, and obviate opposition. The same applies to the Botany outfall, but in this case the country is more open than portions of Bondi line, and the necessity for more ample ventilation is not so pressing. With the aid of the tunnel water, now utilized for inducing air into the Bondi outfall, and two shafts of same character, but in proportion to the work to be done, the Bondi sewer could be effectively ventilated.

Mr. McKenzie informs me that he has expended a considerable amount of money and time in investigating and perfecting this scheme, and has been granted patents for it in America, England, and the Colonies. The Board is no doubt aware of the preliminary trial made some time back, and the working models then shown to illustrate the system, which would give a fair indication as to the money expended. He has placed under offer to the Board the right to construct the McKenzie Combustion Ventilator in connection with sewers within the county of Cumberland, during the currency of the letters patent, with the right to all improvements which might be made to same without any charge whatever, for the sum of £100.

This sum is but a small proportion of the amount which the inventor has expended in bringing the system to its present stage, and could only be looked upon as a contribution towards expenses of investigation, and not in the light of a commercial transaction.

In conclusion, I would recommend that the system be adopted as a means of ventilating the Board's sewers, where circumstances are favourable for the erection of shafts. In some districts this system will be more economical than existing one, but conditions will be reversed in others. The amount of remuneration is recommended for favourable consideration.

The Secretary.

J. M. SMALL.

Investigation of the Composition of the Air in the Sewers of Sydney, with Special Reference to the Presence of Germs, by J. McGarvie Smith.

Sydney, 18 September, 1893.

To the Chairman of the Metropolitan Board of Water Supply and Sewerage,—

Sir,

I have the honor to furnish my report on the sewer examination undertaken on the subjoined lines laid down by yourself, viz. :—

- (a) Presence of germs in sewer air, ventilated and unventilated, if injurious or otherwise.
- (b) Examination of film or sides of sewer between maximum and minimum flow lines, moist and after exposure to draught by water sprays.
- (c) Examination of air in exhaust shafts.
- (d) Examination of air before entry to "cremating shaft" and at outlet.

The liquid refuse, faecal and other waste matters, and the surface water—often as foul as sewage proper—of our Metropolitan District are collected in a reticulated system of sewers, and discharged at two points—one, the Sewage Farm; the other, a main outlet into the ocean at Bondi.

Aware of the generation of poisonous gases in a closed sewer, the Board has sought to make provision for their dilution by periodically flushing the sewers with their own stream water and by the use of inlet and outlet shafts for ventilation. So far, this great work reflects credit on its sanitary engineers; but of very late years, and owing to the development of a comparatively new branch of physiological science, it has been discovered that the danger of sewer-poisoning and disease dissemination is not inorganic but organic—a discovery of paramount importance which has advanced sewage sanitation from the domain of chemistry to that of biology. If the dangerous elements to be controlled were solely of a chemical nature, as until recently supposed by sanitarians, the safeguards against atmospheric and water supply pollution above referred to would have been considered efficient. But the Sydney Sewerage Board finds itself in the same position as the guardians of public health in other great cities, at the present time confronted with a problem in entirely new terms. The modern revelation that zymotic diseases such as phthisis (always with us), small-pox and Asiatic cholera (against the introduction of which a seaport in these days of quick runs can hardly be guaranteed), typhoid, scarlet fever, measles, and diphtheria are caused and spread by specific germs, teaches that attempts to limit these disorders should take the direction of germ-destruction. The sewer is the inevitable receptacle of the germs of any disease prevalent in the city, and the offensive odours hitherto regarded as a chemical danger but capable of being rendered harmless by dilution are germ-products, and as such a warning evidence of the presence of germs.

To disperse the product instead of destroying its cause is analogous to the action of a doctor, who should treat the symptom in place of the disease itself. It is therefore apparent that measures for the purification of a sewer, the dangers of which are organic, must be vital, not mechanical, and only on this enlightened principle can we aim at a prevention of infectious disease, so effectual that the dangers of an epidemic are minimized beforehand. That the Board is scientifically informed, and recognises in this new aspect of public hygiene, a demand for responsible Health Authority to destroy the micro-organisms with which a sewer teems, not content itself with discharging them into the atmosphere for broadcast dissemination, is evident from its action in constructing the "cremating shaft" at Macdonaldtown Park, and requisitioning the services of a bacteriological expert to determine the danger of germs and advise upon the best means of destroying them.

In order to place the Board in possession of all the facts on which my report is based, I was careful to keep a diary of my twenty visits underground in the course of which I secured and examined no fewer than thirty-two samples of air. These notes, giving the following classified particulars, will be found detailed in the appendix :—

Size of sewer.

Condition of sewer.

Flow and silt.

Draught.

Odour.

Temperature.

Humidity.

Number and kinds of organisms per litre of air.

The method of taking the samples of sewer-air, and the processes by which the contained germs were collected, cultivated, and determined—processes involving delicate and prolonged bacteriological manipulation are now given.

Preparations.—As provision for the large number of germs to be dealt with 2,000 test-tubes were sterilized ready to be charged as required with a medium of germ cultivation, the media or "soils" selected being respectively :—

Nutrient gelatine agar.

Nutrient gelatine.

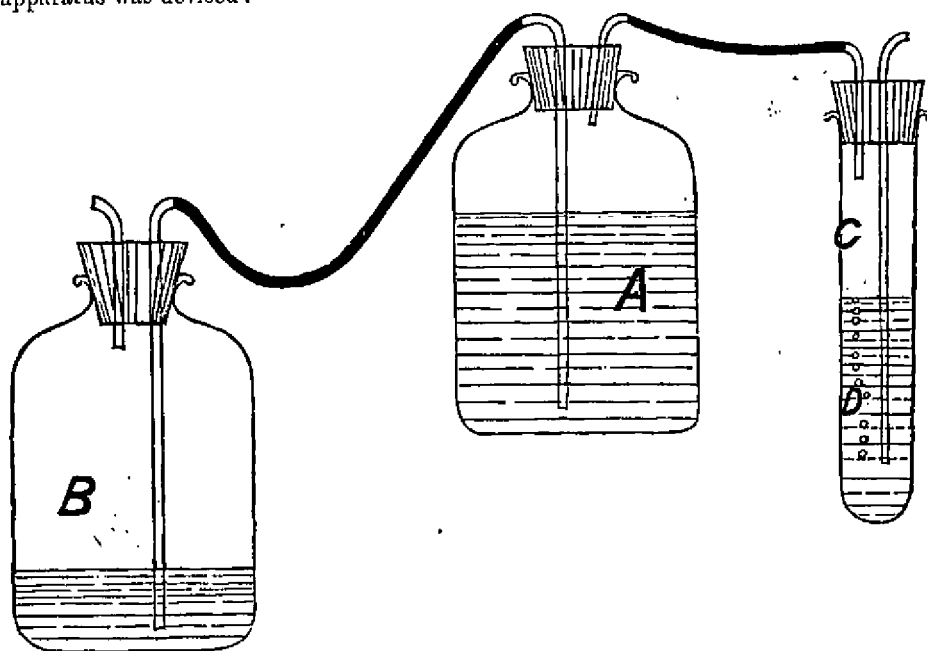
Nutrient agar agar.

Potato.

Method

Method of Sampling Sewer-air.

It was necessary that a measured quantity of air should be passed through a measured quantity of fluid, not only that all the germs in that volume of air should be retained in the fluid, but that a measured quantity of the fluid, say one cubic centimetre, should be the standard quantity for what is termed a plate-culture, and therefore equivalent to the germs contained in a litre of air. For this purpose the following apparatus was devised:—



One litre = 1,000 cubic centimetres.
 One litre = 61.029 cubic inches.
 One litre = 1.760773 imperial pint.

A and B, two litre flasks, so fitted with tubes that the water in A, when syphoned into B, draws a litre of air through a sterile solution D, measuring exactly ten cubic centimetres in the test tube C. By repeated syphonings ten litres of air are passed through C, so that the germs in one cubic centimetre of solution D will represent the number of germs contained in one litre of air. In order that the solution D should preserve alive, without multiplying, the germs present during the short time intervening between taking the sample and making the plate-culture, sterilized distilled water containing 0.6 per cent. NaCl, was used. If a nutrient medium were employed the germs would multiply too rapidly (particularly at summer temperature of 80° F. and over) for the plate-culture to yield anything like an estimate of their original number.

Cultivation.

Each sample of sewer-air was subjected to the following tests:—A tube of sterile nutrient gelatine agar, or gelatine, having been liquefied, one cubic centimetre of solution D, containing the germs in one litre of air, was thoroughly incorporated with the gelatine, and the whole poured upon a sterile glass plate (about 5 inches in diameter), allowed to set, placed in a moist chamber, and transferred to the incubator for forty-eight hours or longer, when each individual germ would have propagated itself into what is termed a colony. This process is known as a "plate-culture." A computation having been made of the number of colonies (each representing a single germ in the original fluid D), sterile tubes of nutrient agar, agar gelatine, gelatine, and potato respectively, were inoculated from isolated colonies on the plate, thus narrowing the process of germ determination into what is known as "pure cultures." On the plate germs are propagated into colonies of their kind, by pure culture individuals are isolated for examination and general classification under the microscope.

For details of my replies seriatim to the queries contained in my commission, I must refer you to the appendix to my Report.

(a) (1) Presence of germs in sewer air. (2) Ventilated and unventilated. (3) If injurious or otherwise.

(a) (1) In the diary it will be seen that ten litres of air were taken on each visit, and that the number of germs present varied between twenty-eight and two thousand two hundred and sixty per litre. The minimum sample was taken (*Tour 8*) in Bourke-street (main Botany sewer) the draught being very strong; the maximum (*Tour 2*) near the Benevolent Asylum, the draught erratic, *up and down stream*, not sufficient to deflect a candle flame or to disturb the anemometer. In the latter case the water spray was working. As an instance of the fluctuation of the number of organisms at a given spot and as evidence that the spray has no beneficial influence, I quote the results of other visits to the spot from which the maximum sample was taken:—

Tour 1: One hundred and fifty organisms; draught feeble.

Tour 6: Ninety-five organisms; water spray, 100 yards off, turned off for fourteen hours previously. Same tour, three-quarters of an hour later, the last twenty minutes of which the spray had been working, 146 organisms.

Tour 13: Three hundred and twenty-six organisms, 10 a.m., draught nil, spray off for twenty-four hours previously. Same visit 12.30 p.m., 385 organisms, draught feeble, sometimes up, sometimes down stream, spray turned on for an hour and a-half previously.

(2) The figures as to ventilation are also unsatisfactory.

Tour 4: Two hundred and thirty-six organisms; dry, ventilated, draught very strong and steady.

Tour 5: Two hundred and eighty organisms; ventilated.

Tour 7: One hundred and six organisms; ventilated, draught nil.

Tour 3: One hundred and sixty organisms, dry, *not* ventilated, very strong draught.

(3) As noted in my diary, I classified the organisms found in each sample of air, and found them to include moulds, sarcina, bacilli, micrococci, streptococci and torula. To diagnose incontestably all individual germs in a class would be a labour extending over many months, and in the case of pathogenic germs, involving the inoculation of a living subject and artificial cultivation of the disease from that subject. Nor, even if time permitted, would such a demonstration be possible, say with typhoid, because it is only pathogenic in man.

There is however no need of experiment to determine what proportion of germs found in a sewer are seeds of disease, because acknowledged facts have established the assumption that whatever infectious disease exists in a city, the specific germ of it will find its way into the sewers. The continued presence in sewer-air of any one variety of organism is of the greatest uncertainty; and the foul odour, although indicative of the presence of germs, is no proof that they are pathogenic germs, (for instance, typhoid and tubercle in cultivation have no offensive odour nor does the former liquify gelatine). But there is no possible right to assume that such a germ-focus as a city sewer (the recipient of hospital as well as general drainage) in a centre of population where phthisis is always and other communicable diseases frequently present, and the odours of which are fœtid with micro-organic products, offers hospitality to a harmless mould and refuses it to a tubercle or a typhoid bacillus.

(6) Examination of film on sides of sewer between maximum and minimum flow-lines, moist, and after exposure to draught by water sprays.

(b) As noted in diary, cultivations from the slime on the top and sides of sewer, proved in every case, to be a compact mass of micro-organisms. When recently flushed there was less slime, and when dry, the roof was in places covered with mould fungi. As a rule, the top and sides of the sewer were fairly clean.

(c) Examination of air in exhaust shafts. (d) Examination of air before entry to "Cremating shaft," and at outlet.

(c) (d) My attention having been most concentrated on the Macdonaldtown Park shaft, the air of which I have tested when the gas was not burning as well as when it was, I take these points together and offer for comparison the following samples of air from sewer and surface.

Tour 13: Three hundred and twenty-six and 385 organisms respectively; from main sewer opposite Benevolent Asylum. Do. surface, 17 organisms.

Tour 17: Fifty-four organisms from main sewer opposite Benevolent Asylum. Do. surface, 8 organisms.

Tour 18: Forty-nine organisms, main sewer, Forster-street. Do. surface, 12 organisms.

Tour 19: Thirty-seven organisms Inlet House, Botany. Do. surface, immediately above the delivery point of sewer 31 organisms. Do. surface, between Inlet House, Botany, and man-hole north of it, 7 organisms.

The "Cremating Shaft" at Macdonaldtown Park is 20 ft. high, with a 9 in. flue leading into the sewer beneath. In the flue at the base of the shaft is fitted a circular gas burner, consuming about 36 ft. of gas per hour.

Tour 14: Thirty-five organisms, in sewer 60 ft. from shaft; draught 15,752 cubic feet per hour.

Tour 14: Twenty-six organisms; at top of shaft gas burning for nineteen hours prior.

Tour 14: Eighteen organisms; surface 100 yards from shaft.

Tour 15: Thirty organisms; in sewer leading to shaft; draught 16,599 cubic feet per hour.

Tour 15: Twenty-three organisms; top of shaft gas burning.

Tour 15: Eleven organisms; surface about 100 yards from shaft.

Tour 16: Twenty-eight organisms; in sewer, 60 ft. from shaft, draught very slight.

Tour 16: Twenty-five organisms; base of shaft, gas not burning.

Tour 16: Nine organisms; surface about 100 yards from shaft.

From the figures of Tours 14, 15, and 16 it will be seen that the "Cremating Shaft" failed to destroy the germs in the air which passed through it, the loss sustained being rather less than the proportion of one-third.

General Remarks.

While desirous of fully acknowledging that the Sydney system of sewers has been designed and executed on the most favourable terms of sanitary engineering as then understood, it is to me, as a bacteriologist, an added cause of gratulation that the Board, which has already done so much, should recognise that further safeguards than chemical and mechanical ones are necessary to cope with the dangers of sewage exhalations. The bacteriological investigations of the composition of the air in the sewers made by the Board's instructions fully endorses its view, and although the tentative effort at germ destruction made in the Macdonaldtown Park shaft is not calculated to achieve the desired result, a more effectual use of heated air would, in my opinion, do so. The general conditions of the sewers is that they are heavily charged with micro-organisms and the foul odour characteristic of some of them.

With little or no draught, an average humidity of say 80° (saturation being 100), and a temperature of 75° to 86° F., the sewers present ideal conditions for the growth of micro-organisms, and those sewers which are never flushed, having on sides and crown a film of filth which is found to be chiefly organic matter, can only be regarded as huge culture chambers. Cultures made from the various samples of sewer-air taken from the top of the shaft prove that the germs are carried out into the atmosphere, and this may be taken as typical of the many exhaust shafts throughout the city. Koch and others having abundantly demonstrated the longevity of germs, their dissemination by air-currents, and their infectiousness by inhalation, the dangers to public health of closed channels pervading a city and in which the germs of all zymotic diseases present in that city collect, multiply and are discharged into the atmosphere, are manifest, while in the event of any epidemic such a method of distribution would tend to spread the particular disease to an alarming extent. Every exhaust shaft discharges its quantum of germs, putrefactive and pathogenic, but to close these shafts and force the sewer-air to the Bondi outlet, a distance of only one mile and a-half from the centre of the city, would be a doubtful improvement, for the moist north-east winds and the winds prevailing during the summer months (the season most favourable to the growth of micro-organisms) would merely blow the germs back over the city and its environs. The latter plan would certainly ensure a more general and equitable distribution of disease, but what is needed is not any scheme for germ dispersion, but an effectual mode of germ destruction. In flushing the sewers with

their

their own stream the deposit of bacterially-fecund filth above the flow level cannot be avoided; I therefore recommend (1) flushing frequently with sea or fresh water, especially in the summer; (2) the closing of all exhaust shafts; (3) the construction, at intervals, of reverberatory furnaces. These furnaces, burning coke or coal, should have a grate area equal to the volume of air to be treated, and a horizontal hearth or flue, say 40 to 60 feet long, leading to a stack high enough to cause the required draught. It is only by means of such a furnace that the ascending germs would be kept in a heated zone sufficiently long to cause their destruction, together with their products. The first cost of construction would be the only considerable outlay, as one man provided with a light cart could attend to the firing of all the furnaces needed, and I know of no other method to be applied to sewer-air, at once so economical and efficient, for the prevention of the spread of zymotic diseases and the safeguarding of the city from epidemics.

I have the honor to be,

Sir,

Yours obediently,

J. McGARVIE SMITH.

APPENDIX.

Tour No. 1.—7th December, 1892.—Main Sewer opposite Benevolent Asylum.

Entered main sewer by man-hole in street opposite Carter's Barracks, and travelled this line of sewer for a distance of 400 yards to a spot opposite the Benevolent Asylum where I obtained samples of sewer-air. The water spray in man-hole 100 yards down stream working.

Size of sewer.—5 ft. 6 in. x 4 ft. 6 in. oviform.

Condition.—A "wet sewer," sides and crown wet and coated with a thick film of slime. This sewer is never flushed.

Flow and silt.—16 inches.

Draught.—Very slight and erratic in its course, sometimes against and sometimes with the stream. Candle flame deflected not more than 20°.

Odour.—Very foul.

Temperature.—Not taken. (On surface, 87° F.)

Humidity.—Not taken.

Number of germs per litre of sewer-air.—150, comprising bacilli, micrococci, torula, sarcina, and mould fungi.

Tour No. 2.—12th December, 1892.—Main Sewer opposite Benevolent Asylum.

Entered sewer by man-hole in Benevolent Asylum enclosure and obtained samples of sewer-air and film from sides of sewer from same place as those taken on 7th December. Water spray in man-hole 100 yards down stream working.

Size of sewer.—5ft. 6in. x 4ft. 6in. oviform.

Condition.—Sides and crown wet and coated with thick film of slime.

Flow and silt.—Flow, 11 inches; silt, 6 inches.

Draught.—Very feeble, sometimes against and sometimes with the stream, candle-flame deflected not more than 20°.

Odour.—Very foul.

Temperature.—Not taken. (85° F. on surface).

Humidity.—Not taken.

Number of germs per litre of sewer-air.—2,260, comprising bacilli, micrococci, torula, sarcina, streptococci, and mould fungi.

Made cultivation from film from sides of sewer, which proved to be a compact mass of organic matter, comprising bacilli, micrococci, torula, sarcina, and mould fungi.

Tour No. 3.—10th January, 1893.—Sewer in Wattle-street.

Entered sewer by man-hole in Wattle-street, off George-street, a "dry sewer" not ventilated and obtained samples of sewer-air.

Size of sewer.—6ft. x 4ft.

Condition.—Sides and crown dry and clean, man-hole showing height of last storm-water.

Flow and silt.—6 inches.

Draught.—Very strong, candle-flame at right angles.

Odour.—Very foul.

Temperature.—Not taken. (On surface 82° F.)

Humidity.—Not taken.

Number of germs per litre of sewer-air.—160, comprising bacilli, micrococci, and mould fungi.

Tour No. 4.—10th January, 1893.—Sewer in Boundary-street, Darlington.

Entered sewer by man-hole in Boundary-street, rear of "Britannia Hotel," Darlington.—A "dry sewer" ventilated.

Size of sewer.—4 ft. x 3 ft.

Condition.—Sides and crown dry and clean; man-hole showing height of last storm-water.

Flow and silt.—14 inches.

Draught.—Very strong and steady.

Odour.—Very foul.

Temperature.—Not taken. (On surface, 82° F.)

Humidity.—Not taken.

Number of germs per litre of sewer-air.—236, comprising bacilli, micrococci, and mould fungi.

Tour

Tour No. 5.—10th January, 1893.—Sewer in Ivy and Boundary Streets.—“Ventilated Sewer.”

Entered sewer by man-hole in Ivy and Boundary Streets, and took samples of sewer-air.

Size of sewer.—4 ft. 6 in. x 3 ft.

Condition.—Sides and crown dry and clean.

Flow and silt.—20 inches.

Odour.—Very foul.

Temperature.—Not taken. (On surface, 82° F.)

Humidity.—Not taken.

Number of germs per litre of sewer-air.—280, comprising bacilli, micrococci, and mould fungi.

Tour No. 6.—12th January, 1893.—Main Sewer opposite Benevolent Asylum.

Entered sewer by man-hole in Benevolent Asylum enclosure, and took samples of sewer-air from same place as those taken on 7th and 12th December. Water spray in man-hole 100 yards down stream turned off for fourteen hours prior to taking sample.

Size of sewer.—5 ft. 6 in. x 4 ft. 6 in. oviform.

Condition.—Sides and crown wet, and coated with a thick film of slime.

Flow and silt.—15 inches.

Draught.—Very feeble and erratic; sometimes against and sometimes with the stream. Candle flame deflected not more than 20°.

Temperature.—Not taken. (On surface 79° F.)

Humidity.—Not taken.

Number of germs per litre of sewer-air.—95, comprising bacilli, micrococci, torula, sarcina, and mould fungi.

Remained in sewer and took samples of sewer-air from same place as previous samples three-quarters of an hour later with the water spray (situated in man-hole 100 yards down stream), turned on for twenty minutes prior to taking the sample.

Draught.—Very feeble and erratic, sometimes with and sometimes against the stream, and no stronger than when taking sample with water spray stopped. Not strong enough to be registered by the anemometer.

Odour.—Very foul.

Temperature.—Not taken. (On Surface 79° F.)

Humidity.—Not taken.

Number of germs per litre of sewer-air.—146, comprising bacilli, micrococci, torula, sarcina, and mould fungi.

Tour No. 7.—17th January, 1893.—Sewer in Abercrombie and Hudson Streets, Redfern.—“Ventilated Sewer,” Bondi line.

Entered sewer by man-hole in Abercrombie and Hudson Streets, and took samples of sewer-air

Size of sewer.—4 ft. 6 in. x 3 ft.

Condition.—Sides damp, covered with slight film.

Flow and silt.—14 inches.

Draught.—Nil.

Odour.—Very foul.

Temperature.—78° F.

Humidity.—81°.

Number of germs per litre of sewer-air.—106, comprising bacilli, micrococci, and mould fungi.

Tour No. 8.—17th January, 1893.—Bourke-street Sewer, main Botany line.

Entered sewer by man-hole in Bourke-street, and took samples of sewer-air.

Size of sewer.—5 ft. 6 in.

Condition.—Sides and crown dry and clean.

Flow and silt.—13 inches and very rapid.

Draught.—Very strong.

Odour.—Not very offensive.

Temperature.—75° F.

Humidity.—78°.

Number of germs per litre of sewer-air.—28, comprising bacilli and micrococci.

Tour No. 9.—8th February, 1893.—Bourke and Chelsea Streets Sewer.

Entered sewer by man-hole in Bourke and Chelsea Streets, and took samples of sewer-air.

Size of sewer.—3ft. x 2ft.

Condition.—Sides and crown damp but clean.

Odour.—Foul.

Temperature.—78° F.

Humidity.—85°.

Number of germs per litre of sewer-air.—37, comprising bacilli and micrococci.

Tour No. 10.—8th February, 1893.—Main Sewer at Deep Den.

Entered sewer by man-hole in vault, and took samples of sewer-air.

Size of sewer.—7ft. 6in. x 6ft. 2in.

Condition.—Sides and arch clean.

Flow and silt.—Flow 20 inches, silt 10 inches.

Draught.—Slight.

Temperature.—79° F.

Humidity.—86°.

Number of germs per litre of sewer-air.—48, comprising bacilli, micrococci, and mould fungi.

Tour No. 11.—17th February, 1893.—Macquarie-street Sewer.

Entered sewer by man-hole in Macquarie-street North, and took samples of sewer-air.

Size of sewer.—3ft. 6in. x 2ft. 4in. oviform.

Condition.—Sides and arch dry and covered with mould fungi.

Flow and silt.—5½ inches.

Draught.—Nil; candle flame upright.

Odour.—Very foul.

Temperature.—77° F.

Humidity.—80°.

Number of germs per litre of sewer air.—34, comprising bacilli, micrococci, and mould fungi.

Diagnosed bacillus fluorescence, micrococcus rosaceus, and yellow bacterium.

Tour No. 12.—17th February, 1893.—Main Sewer, Woolloomooloo.

Entered main sewer by man-hole in Palmer and Riley Streets, and took samples of sewer-air.

Size of sewer.—8 ft. x 5 ft. 6 in.

Condition.—Arch and sides (of stone) clean; the arch is flushed by every small downpour of rain.

Flow and silt.—18 inches.

Draught.—Nil; candle flame upright.

Odour.—Very foul.

Temperature.—Not taken.

Humidity.—Not taken.

Number of germs per litre of sewer-air.—29, comprising bacilli and micrococci.

Tour No. 13.—27th February, 1893.—Main Sewer opposite Benevolent Asylum.

Entered sewer by man-hole in Benevolent Asylum enclosure at 10 a.m., and took samples of sewer-air and film from sides of sewer from same place where those of 7th and 12th December and 12th January were taken. Water spray situated in man-hole 100 yards down stream stopped for 24 hours prior to taking samples.

Size of sewer.—5 ft. 6 in. x 4 ft. 6 in.

Condition.—Sides and crown wet, and covered with thick film of slime.

Flow and silt.—16 inches.

Draught.—Nil; candle flame upright.

Odour.—Foul.

Temperature.—82° F.

Humidity.—82°.

Number of germs per litre of sewer-air.—326, comprising bacilli, micrococci, torula, sarcina, and mould fungi. Diagnosed yellow sarcina, mycoides, yellow bacterium, orange sarcina, bacillus fluorescence, micrococcus cinnabareus, and pink torula.

Re-entered sewer at 12:30 p.m., and from the same place, visited at 10 a.m., took samples of sewer-air. The water spray situated 100 yards down stream having been *turned on* one and a half hours prior to taking this sample.

Draught.—At times nil, sometimes with and sometimes against the stream; not strong enough to be registered by anemometer.

Odour.—Foul.

Temperature.—75° F.

Humidity.—82°.

Number of germs per litre of sewer-air.—385, comprising bacilli, micrococci, torula, sarcina, and mould fungi.

Made cultivations from film taken from sides of sewer, which proved to be a compact mass of organic matter, comprising bacilli, micrococci, torula, sarcina, and mould fungi.

Air in Carter's Barracks.

Took samples of air from the surface in Carter's Barracks, about 100, in direct line from man-hole in Benevolent Asylum enclosure.

Weather.—Cloudy, no wind.

Temperature.—86° F.

Humidity.—36°.

Number of germs per litre of air.—17, comprising bacilli, micrococci, and mould fungi.

Tour No. 14.—14th March, 1893.—"Cremating Shaft" in Macdonaldtown Park.

"Cremating shaft" in Macdonaldtown Park is 20 feet high, having a 9-inch flue leading into the sewer beneath, in the flue at the base of the shaft is fitted a circular gas burner, consuming 36 feet of gas per hour.

Took samples of sewer-air coming from top of "Cremating Shaft." The gas in shaft having been alight for 19 hours prior, and still burning.

Temperature of air coming from top of shaft.—162° F.

Number of germs per litre of sewer-air passed through burner.—26, comprising bacilli, micrococci, and mould fungi.

Sewer leading to "Cremating Shaft" in Macdonaldtown Park.

Entered sewer by man-hole in street, about 60 feet from "Cremating Shaft," and took samples of sewer-air, gas in shaft still burning.

Size of sewer.—2 ft. 6 in. (circular).

Condition.—Sides and top clean.

Flow and silt.—5 inches.

Draught.—15,752 cubic feet per hour by anemometer.

Odour.—Not very offensive.

Temperature.—74° F.

Humidity.—86°.

Number of germs per litre of sewer-air.—35, comprising bacilli, micrococci, and mould fungi.

Air

Air in Macdonaldtown Park.

Took samples of air in Macdonaldtown Park about 100 yards from "Cremating Shaft."

Weather.—Fine.

Temperature.—82° F.

Humidity.—50°.

Number of germs per litre of air.—18, comprising bacilli, micrococci, and mould fungi.

Tour No. 15.—21st March, 1893.—"Cremating Shaft," Macdonaldtown Park.

Took samples of sewer-air from top of "Cremating Shaft," *gas in shaft burning.*

Temperature of air coming from top of shaft.—172° F.

Velocity of air in shaft.—18,194 cubic feet per hour by anemometer.

Number of germs per litre of sewer-air coming from shaft.—23, comprising bacilli, micrococci, and mould fungi.

Diagnosed micrococcus rosaceus, yellow sarcina, and yellow bacterium, 11 colonies liquefying the gelatine.

Sewer leading to "Cremating Shaft," Macdonaldtown Park.

Entered sewer by man-hole about 60 ft. from base of "Cremating Shaft," and took samples of sewer-air; *gas in shaft still burning.*

Size of sewer.—2 ft 6 in. circular.

Condition.—Top and sides clean.

Flow and silt.—4½ in.

Draught.—16,599 cubic feet per hour by anemometer.

Odour.—Not very offensive.

Temperature.—76° F.

Humidity.—86°.

Number of germs per litre of sewer-air.—30, comprising bacilli, micrococci, and mould fungi.

Diagnosed yellow sarcina, bacillus fluorescence, 14 colonies liquefying the gelatine.

Air in Macdonaldtown Park.

Took samples of air in Macdonaldtown Park, about 100 yards from "Cremating Shaft."

Weather.—Fine and clear, slight wind.

Temperature.—80° F.

Humidity.—52°.

Number of germs per litre of air.—11, comprising bacilli, micrococci, and mould fungi, 5 colonies liquefying the gelatine.

Tour No. 16.—11th April, 1893.—"Cremating Shaft," Macdonaldtown Park.

Took samples of sewer-air from "Cremating Shaft," *gas in shaft not burning.*

Odour.—Very foul.

Temperature.—79° F. } On surface.

Humidity.—25°.

Number of germs per litre of sewer-air.—25, comprising bacilli, micrococci, and mould fungi, 17 colonies liquefying the gelatine.

Sewer leading to "Cremating Shaft," Macdonaldtown Park.

Entered sewer by man-hole in street about 60 feet from "Cremating Shaft," and took samples of sewer-air, *gas in shaft not burning.*

Size of sewer.—2 ft. 6 in. circular.

Condition.—Sides and top clean.

Flow and silt.—5 inches.

Draught.—Very feeble, not sufficient to be registered by anemometer.

Odour.—Very foul.

Temperature.—78° F.

Humidity.—85°.

Number of germs per litre of sewer-air.—28, comprising bacilli, micrococci, and mould fungi, 20 colonies liquefying the gelatine.

Air in Macdonaldtown Park.

Took sample of air in Macdonaldtown Park about 100 yards from "Cremating Shaft."

Temperature.—79° F.

Humidity.—25°.

Number of germs per litre of air.—9, comprising bacilli, micrococci, and mould fungi, three colonies liquefying the gelatine.

Tour No. 17.—17th May, 1893.—Main Sewer opposite Benevolent Asylum.

Entered sewer by man-hole in Benevolent Asylum enclosure and took samples of sewer-air from same place as those taken on 7th and 12th December, 12th January and 27th February.

Size of sewer.—5ft. 6in. x 4ft. 6in.

Condition.—Sides and top wet and covered with thick film of slime.

Flow and silt.—14½ inches.

Draught.—Very slight in direction of man-hole 100 yards distant which was open.

Odour.—Foul.

Temperature.—66° F.

Humidity.—81°.

Number of germs per litre of sewer-air.—54, comprising bacilli, micrococci, torula, sarcina, and mould fungi.

Air

Air in Benevolent Asylum enclosure.

Took sample of air from surface within 50 yards of man-hole in Benevolent Asylum enclosure.
Weather.—Fine, no wind.
Temperature.—66° F.
Humidity.—26°.
Number of germs per litre of air.—8, comprising bacilli, micrococci, and mould fungi.

Tour No. 18.—31st May, 1893.—Main Sewer in Forster-street.

Entered sewer by man-hole in Forster-street, and took samples of sewer-air.
Size of sewer.—5 ft. 6 in. x 4 ft. 6 in.
Condition.—Sides and top of sewer clean.
Flow and silt.—18 inches.
Draught.—Feeble but steady in direction of man-hole 100 yards distant, which was open.
Odour.—Foul.
Temperature.—66° F.
Humidity.—89°.
Number of germs per litre of sewer-air.—49, comprising bacilli, micrococci, and mould fungi

Air in Forster-street.

Took samples of air from surface in Forster-street, about 60 yards from man-hole, entered to take sample of sewer-air.
Weather.—Cloudy with slight rain.
Temperature.—63° F.
Humidity.—78°.
Number of germs per litre of air.—12, comprising bacilli, micrococci, and mould fungi.

Tour No. 19.—5th July, 1893.—Main sewer near Inlet House, Botany.

Entered sewer by man-hole north of Inlet House, Botany, and took samples of sewer-air.
Size of sewer.—5 ft. 6 in. circular.
Condition.—Sides and top of sewer damp; marks of last flushing on sides.
Flow and silt.—9 inches.
Draught.—Very strong in direction of stream.
Odour.—Foul.
Temperature.—58° F.
Humidity.—85°.
Number of germs per litre of sewer-air.—37, comprising bacilli, micrococci, torula, sarcina, and mould fungi twenty-five colonies liquefying the gelatine.

Sewer and Inlet House, Botany.

Took samples of air in Inlet House immediately above delivery point of sewer.
Odour.—Foul.
Temperature.—58° F.
Humidity.—83°.
Number of germs per litre of air.—31, comprising bacilli, micrococci, sarcina, torula, and mould fungi, twenty-three colonies liquefying the gelatine.

Air between Inlet House and man-hole north of it, Botany.

Took samples of air between Inlet House and man-hole north of it, strong wind blowing across line of sewer.
Temperature.—58° F.
Humidity.—40°.
Number of germs per litre of air.—7, comprising bacilli and micrococci, three colonies liquefying the gelatine.

Notes by Engineer on a Biological Examination of Sewer Air conducted by Mr. J. McGarvie Smith.

21 November, 1893.

In carrying out the biological investigation of sewer air approved of by the Board, Mr. Smith's attention was directed to certain sections of the old and new systems which could be taken as fair samples of both, and kept within the limits fixed by the Board.

I accompanied Mr. Smith on several of his tours, and had opportunity of observing the state of sewer with regard to odour and temperature, and with respect to some of the notes of observations on the character of the air I do not agree, as the term "foul" would not, in my opinion, apply, in a comparative sense, to the air found in the sewers at time of observation, although I am prepared to admit that there is room for improvement.

The number of tests made, and after-work in the cultivation and examination of the germs, necessitated an amount of careful work in preliminary preparation and in the laboratory to obtain the results recorded in the report. The extent of laboratory investigation was under the Board's observation during their visit. I am not aware of any similar record being in existence in connection with any other sewerage system.

The results vary in remarkable degree with regard to the old and new systems. For instance, in the old outfall sewers in Macquarie-street and at Woolloomooloo Bay the number of germs per litre were thirty-four and twenty-nine respectively; whereas in the south-west branch of main Bondi outfall, new system, the number per litre ranged from 2,260 (on one occasion) to fifty-four. In the former the sewers are large and convey not only the sewage from low-lying zone but all the storm-water from the drainage area, the effect of rainstorms being to thoroughly sweep the sides of the sewer, and, being near the outlets, have the beneficial effects of the winds when blowing in at the mouth of the sewer. In the latter the sewers only take a small proportion of the storm-water and the whole of the sewage above 40 feet contour, the sewage under such circumstances not being so diluted. The comparison would indicate that at certain periods flushing by clean water would be beneficial. The quantity and periods of flushing would vary according to circumstances and locality. In the branch under consideration, viz., S.W. branch of Bondi outfall, the conditions are, if anything, worse than in any other section, as it receives the discharge from Prince Alfred Hospital, Benevolent Asylum, and from two large breweries, the effluent water from the latter being very often offensive and at a high temperature. The brewery effluent might account for the increased number of germs as compared with other sections.

The action of the water spray referred to can be explained by the fact that it is off an old main on low-level supply, and the pressure fluctuates considerably during the day, and as the work done by water spray is in proportion to the pressure, it is quite possible that, at certain periods, the air is not quite so diluted as at others. The practical proof of the beneficial effects of the induced current of air is to be found with the experience of the men working in the sewer—the condition of the air when spray is not working is found to be very different than when in operation. The difficulty on this line has been to obtain positions for high outlet shafts which would induce a greater draught, the surface openings of manholes not being available owing to complaints from the public. This section is capable of improvement as regards flushing, and, owing to the investigations, provision is being made for fixing of flushing appliances.

The other sections, some on the old system, show fairly well; others, especially the Bondi and Botany outfalls, very well, the number of organisms in the latter being not more than forty-eight and twenty-eight respectively. This favourable result I attribute to the aerating action of the wind, which has more direct effect on same than on sections more remote, together with greater scouring power, due to increased flow; this has the effect of clean sweeping side-walls and preventing the accumulation of slime and filth, which Mr. Smith has shown to be veritable breeding-grounds for micro-organisms.

The many tests made at Macdonaldtown indicate (as referred to in another report) that the furnace shaft, in addition to the draught power, accounts for a reduction in the number of organisms between inlet and outlet points.

The practical lessons to be learned from this investigation are—

- (a) *Preventing as far as possible accumulation of slime and other germ-breeding material on sides of sewers.*—This can be effected by flushing by water in the smaller, and a combination of flushing and sweeping sides by mechanical means in the larger arterial branches. This will be carried into effect by increasing the present means for flushing by provision of stop-boards, which has been found by experience to be not only the best for results, but more economical than complicated flushing valves. An experiment was tried by fixing adjustable brushes to sides of maintenance trucks to cleanse sides of sewer between maximum and minimum flow-lines; the apparatus was found to be effectual. The water for flushing purposes must be obtained from the mains as it can be spared; to institute an installation of sea-water flushing would incur an expense on the rates for pumping plant, mains and tanks, which would make it prohibitive, and, as a sanitary measure, salt water is not considered a good flushing medium for sewers.
- (b) *Reduction of temperature.*—This is a question which cannot be brought within arbitrary limits, as local causes will at times interfere with the object aimed at. As the temperature of the sewers rarely exceed 70° a reduction of same will greatly contribute towards prevention of germ-breeding, this can best be obtained by inducing motion to the air in the sewers, and the system now carried out tends in this direction.
- (c) *Destruction of germs by heat as far as practicable.*—This question presents considerable difficulties if the destruction of all pathogenic germs is to be insisted upon. One of the principal authorities on this subject states that the effect of heat depends on the degree of temperature and on its duration.

“Continued

"Continued action on relatively low temperatures produces the same result as a short action of high temperature. The temperature necessary to cause the death of the organisms varies also very greatly according to the other conditions of life, and more especially according to the resisting power of the species in question. The chief difference is found between bacteria which do not form spores and those which are spore-bearing; the former are, as a rule, killed when in a moist state or in fluids, by exposure for one or two hours to a temperature of 48° to 60° C., when they are dry the temperature must, as a rule, be continued for a longer time. Even spore-forming bacteria may be killed by these relatively low degrees of temperature if the heat is applied on repeated occasions, and if, in the intervals between its application, the organisms are placed under the most favourable conditions of existence, so that any spores that are present may sprout and form bacilli. If the latter are killed by the subsequent application of heat before new spores are formed, we may be certain that after the heat has been applied five or six times no living spores exist, and all the adult organisms are destroyed. . . .

"It is much more difficult to kill quickly the spores of the mould fungi. Hot air at a temperature of 120° C. does not completely destroy them after half an hour's exposure. They are not certainly killed unless they are exposed to a temperature of 110 to 115° C. for an hour and a half." *Flügge*.

To collect the sewer air at points and expose same to the highest temperature before referred to, which is equal to 218° F. for half an hour, would seriously interfere with the question of ventilation, and it is open to argument if the destruction of any pathogenic germs would be attained. This uncertainty, and the attendant expense, would place it beyond practical limits in dealing with a large sewerage system, in the light of combining a ventilating shaft with a germicide.

The same authority states where a dry zone exists the conditions are most favourable for the detachment and carrying away of the bacteria of the soil by currents of air. It is only in that case that this most important mode of transport comes into play. If this statement can be applied to the interior of the sewers it follows, by parity of reasoning, that if the walls of sewers are moist bacteria will not be detached and carried into the atmosphere, and if, on the other hand, they could be brought into the condition of dry soil the dispersion of germs by air-currents would ensue. As the walls of sewers are never in an absolutely dry state there is no danger of germs being detached and dispersed into external atmosphere. The only means by which bacteria would be detached would either be by flushing or sweeping sides of sewer. In either case they would be carried away by the flow to the outfall entangled in the water.

With regard to recommendations made by Mr. Smith, the first I fully concur with, the second I think unnecessary, and the third I consider would be found more expensive and difficult to work than is anticipated, as one man could not possibly attend to the furnaces if carried out on the lines suggested.

The investigations carried out by Mr. Smith will form an important addition to the question of sewer ventilation, and the results of same will form a basis indicating where improvements can be made in the study of this important branch of sanitation. As the whole of the samples were taken personally at considerable inconvenience and risk, the laboratory work in making the numerous cultivations entailed a considerable amount of patient, laborious work which, had not Mr. Smith entered into the work *con amore*, could hardly be covered by a fixed fee. No investigation of the subject on the same scale exists in any reports or literature of sanitary works. I would, therefore, recommend Mr. Smith for a favourable consideration with regard to a fee for this work.

The Secretary.

J. M. SMAIL.

Memorandum on Mr. J. M. Smail's Notes on the Biological Examination of Sewer Air.

Sir,

Sydney, 12 February, 1894.

In the report of my investigations of the composition of the air in the sewers of Sydney, with special reference to the presence of germs, which I had the honor to render you on commission in September last, I furnished evidence by analysis of twenty-three samples of air, that the sewers are heavily charged with micro-organisms. On this it was my duty to inform the Board that germs are the direct agents for the propagation of zymotic diseases; that the germs of any such diseases present in a city must find their way into the sewer; that phthisis is always, and other communicable diseases frequently, present in Sydney; and that in the event of an epidemic, the sewer in its present condition would act as a huge culture chamber. I carefully examined the ventilating appliances in use in the sewers, including the tentative "crematory shaft" (reported by Mr. Smail ready for testing) in Macdonaldtown Park. I found that the water sprays do not appreciably affect the air current in the sewers, and that the exhaust shafts serve no other purpose than to discharge germ-laden exhalations into the streets. The Macdonaldtown shaft has claims as a ventilator, but none as a germicide. It induces a draught by heated air, but fails to provide a heated zone of high enough temperature and long enough duration to destroy diseased germs. As the Board is doubtless aware, the problem of safeguarding the public health from sewer dangers is a biological, not a mechanical one, and the most complete system for the dispersion of sewer air would only succeed in disseminating the contained germs. The object of sewer ventilation should be to draw the air to convenient points, where it may be safely discharged into the atmosphere through a furnace in which germs and other products perish. To ensure effectual accomplishment of this vital and only safeguard at the smallest outlay and with the least disturbance of the existing conditions of the sewer, I recommend:—

1. More frequent flushing with water to prevent accumulation of bacterially-framed filth.
2. The closing of all exhaust shafts.
3. The construction at intervals of reverberatory furnaces with a grate area equal to the volume of air to be treated, having a horizontal hearth providing a heated zone sufficiently long to ensure the absolute destruction of ascending germs, together with their products, and a stack high enough to cause the required draught.

The condition of the air in the Sydney sewers disclosed by my investigation is naturally disquieting to the Board. I should have been glad to confer with any other bacteriological expert or experts whom it might have consulted, but I must confess astonishment that my report should have been officially submitted to a gentleman, who, however, proficient in his own profession of engineering, could not be expected to advise on a biological matter. It would not occur to Mr. Smail to defer to me on a point of engineering, and with every respect to his judgment in his own department, neither should I think of consulting him in a question of physiological chemistry. It would be easy to reply to his notes seriatim where, not being an expert in this subject, his errors are precisely what one would expect, but I content myself at present with remarking that Mr. Smail's desideratum is germ dispersion not germ destruction, although he advocates on Mr. M'Kenzie's behalf what he deprecates on mine.

It is obvious that as long as the Board was unaware that the air of the sewers teems with micro-organisms, some of which are infectious by inhalation, its responsibility to the public was in this respect less than it now is. It has now before it a practical suggestion to minimise the present health danger and the contingent danger of epidemics. In requesting it to submit the whole matter to the Board of Health, I am actuated only by a sense of its importance to the health of Sydney, I have no personal interest except as a citizen and a scientist on the matter, no patent to push, nor profit to seek.

I have, &c.,

J. MCGARVIE SMITH.

Alleged Dissemination of Pathogenic Germs from Board's Ventilating Shafts.

DURING the past week several paragraphs and articles have appeared in the daily papers in connection with a biological investigation of the air of the Metropolitan sewers, which was undertaken by Messrs. Smith and Pound at the request of the Board. The latter gentleman only carried out a portion of the investigation; the report was finally submitted by the former. The report was forwarded to me in the usual official routine, and upon which I submitted certain notes of conclusions drawn from the results of the investigations. The report with notes were ordered by the Board to be printed as an Appendix of the Annual Report to be laid before Parliament.

The statements in the papers are identical with the confidential report furnished to the Board, and the use of such report without the cognisance of same was, in my opinion, highly improper. The report was submitted by Mr. Smith on or about 15th September, 1893. My notes on same were submitted on 21st November, and, as before stated, the report was ordered to be printed.

The report contained three recommendations, viz. :—

- (a) Flushing with sea or fresh water, especially during the summer. This I fully concurred with as far as the use of fresh water. The use of salt water would entail the installation of pumping plant and reticulation mains with the necessary staff to attend the same. This would become a serious charge upon the rates without achieving any corresponding benefit. The use of salt water for sewer flushing is not recommended. The question, which cropped up in England, was submitted to two eminent professors of chemistry, and they reported against the use of such water on the following grounds, viz. :—

“As to its use for flushing sewers.” Its use is inadvisable,—

1. Because the solvent action of salt water on organic matter is very inferior to that of fresh water.
2. Because where organic matter is in a state of solution in fresh water the addition of brine (sea water) will effect the precipitation of the organic impurities.
3. Because (it follows as a consequence of 1 and 2) if salt water be used for flushing, the quantity of suspended matter will be increased and the deposit in the sewers will be likewise increased.
4. Because salt water has an energetic action on metals and cements.
5. Because the sulphates, which are present in large quantity in sea water, are certain to be reduced by fermentative action whilst from the resulting any acid will generate sulphuretted hydrogen. Thus the nuisance arising from flushing sewers with sea water may be considerable.

I would point out that at present fully 50 per cent. of the maintenance staff are employed in removing silt from the city sewers, and it is therefore obvious that any further deposit brought about by an expensive installation of sea-water flushing would mean an increase in the expense of maintenance and interest. There is ample fresh water for sewer-flushing purposes where required in the larger arterial branches, but experience has shown that no amount of flushing will remove the heavier silt. The principal object, as I understood Mr. Smith when investigating the sewer-air question, was the removal of the film of slime and filth which adhered to the sides of the sewers between maximum and minimum flow line. Every attention is given to this recommendation and additional flushing points are being provided. I would however point out, to prevent misapprehension, that provision for flushing is always a part of the design of a properly-constructed system; as a matter of fact every working manhole on reticulation branches is a flushing station; on the main lines they are not required so frequently, as the increased volume gives a velocity sufficient to keep solid matter in suspension on the move, except where heavy silt, such as triturated road metal, &c., passes into the old city sewers. The whole system is divided into sections and placed in charge of gangs, the number in each varying according to the work to be done, so that it will be seen that this portion of sewer maintenance is adequately attended to.

- (2.) The second recommendation was that all exhaust shafts should be closed.

This recommendation I could not concur in, as I considered there was nothing disclosed in the report to justify such a drastic departure from a system which has hitherto been adopted in all properly devised sewerage schemes and is scientifically correct.

The recommendation, as well as terms of report, states the ventilating shafts are means for disseminating germs and are calculated to be a fruitful source of spreading disease in the event of an epidemic. The special diseases mentioned in report are phthisis, smallpox, Asiatic cholera, typhoid, scarlet fever, measles, and diphtheria.

The only shaft dealt with was the experimental one at Macdonaldtown Park, fitted with combustion chamber, and it appears that the sweeping denouncement of shafts in general is based on observations at same. It will be as well to give briefly the results as contained in the report, but it will be necessary to point

point out that the conditions of draught at Macdonaldtown shaft and others erected in the city and suburbs are not analogous.

Tour 14: Germs in air issuing from shaft, per litre, 26; bacilli, micrococci, and mould fungi; gas burning.—Germs in air in sewer leading to shaft, per litre, 35; bacilli, micrococci, and mould fungi.

Tour 15: Germs in air issuing from shaft, per litre, 23; gas burning.—In sewer, 30: bacilli, micrococci, and mould fungi.

Tour 16: Germs in air issuing from top of shaft, per litre, 25; gas not burning.—Air in sewer, per litre, 28; germs same character as 14 and 15.

Tour 14: Air in Macdonaldtown Park, number of germs per litre, 18.

Tour 15: Number of germs per litre, 11.

Tour 16: Number of germs per litre, 9. Character of germs is given as bacilli, micrococci, and mould fungi, same as sewer shaft.

The list of names of germs given looks formidable, but in no case are they specially referred to as dangerous, and text books on the subject do not class them as such. The character of the germs found in the air of the park is given in same terms as those found in the air of shaft and sewer, and by parity of reasoning it must be concluded that the air of the park is no better than that of shaft or sewer except in the number of organisms being less.

Until the question as to whether the issuing of germs from the various shafts is inimical to public health has been settled beyond a doubt, I consider it would be extremely unwise to take the drastic steps recommended. The principle laid down in carrying out the new sewerage system is motion for water and air—no resting place for either—and this is but carrying out natural laws and using natural means for dealing with the question.

The system of ventilating sewers by shafts attached to buildings has been carried out in a desultory manner in connection with sewerage works in England and other places, but this is now becoming more common, the various authorities erect them wherever they can.

From returns furnished by town clerks of twenty-five British and American cities and towns, with populations varying from 1,110,000 to 25,000 the systems carried out are as follows:—

10 have surface openings and ventilating shafts.

15 surface ventilation only—that is, openings at crown of roadway.

The absence of legislative power precludes the authorities making the system general; the consensus of opinion, however, is that it is the best means of dealing with the difficulty.

The closing of the shafts to prevent dispersion of germs, leads up to a question which has occupied the minds of biologists for some considerable time, and as this is a matter which is beyond the domain of the engineer, I would refer to opinions expressed by persons who are considered authorities on the subject.

The largest number of germs which was found in what might be termed a bad section of the system, viz., the South Western branch, was 2,260 per litre, or 2.26 per c.c. Assuming the germs are not pathogenic—nothing is shown to the contrary—what possible danger would arise if they were dispersed in the air. Take a case of water supply, which if contaminated is more likely to cause dangerous conditions to be set up in connection with enteric fever or Asiatic cholera than presence of germs in the air. At Zurich, where the water supply is kept under biological observation, this is limited to determining the number of bacteria per cubic centimetre of water, the differentiation according to species being, for the purpose of water supply, both unnecessary and unreliable, unless an abnormal number of bacteria in conjunction with an unfavorable chemical analysis points to probable contamination. The cultivation of bacteria is conducted, according to Professor Koch's method, modified by Professor Cramer, of Zurich. The average number of bacteria in the water as distributed, in an average of four years, is 31 per cubic centimetre or 31,000 per litre. When being cultivated the bacteria is counted every day from their first appearance and the counting is stopped when the gelatine begins to liquefy.

Now there is a great difference between 2,260 and 31,000 per litre, if this is permissible in potable water there must be some cause underlying this standard. Professor Koch has stated a permissible limit of 100 germs to the cubic centimetre. Flüge, in his work on micro-organisms, states, in connection with the over-estimation of the danger of air germs:—"On the whole too great a rôle was formerly ascribed to the air in the spread of saprophytic and infective germs. By the experience obtained in bacteriological work and in surgical practice it has become evident that bacteria but seldom enter nutrient substrata from quiescent air; that even a simple cover, which keeps off the vertically falling particles of dust form, even in impure air, an extremely efficient protection, and that the entrance of bacteria occurs far more frequently from unclean objects, unintentional contaminations, &c., than from air germs. On the other hand, dusty air in active movement offers an excellent opportunity for the spread of bacteria, and it is remarkable in what numbers they may be deposited on a cool object—on nutrient materials placed in ice—along with the water vapour condensed at the time; but even then the pathogenic bacteria forms only a minute fraction as compared with the saprophytic. In fact, in the open air the dilution of the pathogenic germs soon becomes so very great that a direct infection is a rare occurrence; it is only from the air within dwellings and in the neighbourhood of the sick that infection occurs at all frequently." He further states "that neither the points of view nor the methods for the investigation of the air are at the present time so precise that it is possible to make definite statements as to the local and seasonable differences in the number of air germs, or that well-founded conclusions can be drawn as to the part played by the air in the spread of one or other of the infective diseases."

In the recent report of the Royal Commission on the Water Supply to the Metropolis of London the Committee refers to the question of microbes in water, stating that the water question has passed from the domain of chemistry into that of biology, for the next step in advance was the comparatively recent discovery that the matter to the presence of which drinking water owed its occasional power of disseminating infectious diseases was not, merely organic but living matter, consisting of microscopical vegetable organisms, known generally as microbes or bacteria, and divided by specialists according to their form

form into bacilli, spirilla, cocci, sheptococci, and the like. These microbes are not only infinite in variety and number but are ubiquitous. The air we breathe, the food we swallow, the water we drink teem with them. They swarm within our own bodies, and this to such an extent that it is said that six different species are invariably inside the human mouth while many other species are to be found there with more or less frequency. Fortunately the vast majority of these microbes are perfectly innocuous, many of them indeed are not only innocuous but serve useful necessary purposes, for it is by them that the breaking up of dead matter, animal or vegetable, and its reduction into inorganic substances is effected, and consequently by them that the purification of water or other media from organic matter is brought about. Many of them, moreover, act as actual preventives of infectious diseases.

There are however certain microbes that form exceptions to this general rule of innocuity, and that are capable of setting up more or less serious disease when introduced into the living body. These pathogenic microbes are given off from the bodies of animals or human beings already suffering from the special disease to which they respectively give rise, and, should they by any means find their way into the system of other animals or human beings that are capable of suffering from such diseases, communicate to them the infection. That this is the manner in which infection spreads from individual to individual has been established beyond all possible doubt for some diseases, and it is believed from analogy that what has been ascertained for some infectious or contagious diseases is probably due for the whole class. Now some of these pathogenic microbes, though their normal habitat is the living body, can maintain their existence for a longer or shorter period outside it, and can even multiply in water, or, if desiccated, can be carried, either themselves or their spores, in the air, and gain access to the body in the act of inspiration or otherwise.

The next question with which we have to deal is the alleged existence in rivers of numerous conditions which lead to the destruction or elimination of such pathogenic microbes as may have found their way into them. The natural habitat of pathogenic bacteria is the interior of the living body; when they pass from this into the outer air or water they are in an unnatural medium, in which they can only maintain their existence and power of multiplication for a limited period, during which they undergo more or less rapid attenuation or loss of virulence, and become generally weakened. Meantime the ordinary water bacteria, by which, if in the river, they are surrounded in innumerable multitudes, being in their natural habitat, thrive and multiply, and become more and more likely to obtain the mastery in the struggle between themselves and their weakened pathogenic adversaries. For it appears to be the generally accepted doctrine of bacteriologists that the pathogenic organisms and the ordinary river bacteria, to which the decomposition of organic matter is due, are naturally antagonistic, and that these latter undoubtedly exert an influence in diminishing the vitality of the typhoid bacillus, either actually consuming it or, as is more probable, giving rise to projects that interfere with its growth.

It is this antagonism of the non-pathogenic to the pathogenic bacteria that supplies an explanation of the otherwise unintelligible fact as to which all the bacteriological witnesses seem to agree, that pathological bacteria will live longer in distilled water, or in water that has been previously sterilised, that is, from which all other bacteria has been removed, than in ordinary river water. . . . It is found that exposure to direct sunlight destroys these bacteria, and even such a tempered amount of light as is present under ordinary conditions in Thames water injuriously affects their vitality. How important a germicidal influence is exercised by light is shown in the statement made by Dr. Sims Woodhead, "that in the laboratory we are compelled to keep all our pure cultures which are under favorable conditions of growth in a dark cupboard, otherwise they would die out rapidly, becoming weaker and weaker. The same, of course, must be the case where, as in water under the open air, organisms are exposed to light. . . ."

There remains the question of the dose of bacilli required for the production of disease. The general tendency of evidence, says Professor Odling, is to show that it wants a very considerable dose of a pathogenic organism to produce its characteristic. Similarly Professor Ray Lankester says:—It appears probable that any infection produced by these organisms must be by a certain volume—a certain number—that is to say, that one typhoid bacillus passing into, even arriving into the intestine would not be able to hold its ground. Again there is little doubt that Dr. Sims Woodhead in his statement that small doses of cholera bacillus, introduced into the alimentary canal of a man or animal, are destroyed so rapidly by the secretions, or it may be by actual contact with the living cells of the stomach and intestine, that no symptoms are produced in healthy individuals, however a very large dose of the bacilli with the accompanying poison may alter the secretion and paralyze the cells, so that the organism is enabled to grow in the nutrient medium contained in the alimentary canal, and an attack of cholera may result; and he further states that he is led to believe that the two organisms "that is, the microbes of typhoid fever and of cholera" act in somewhat the same fashion as regards the infection of the human body. There is, however, he elsewhere states, not nearly so definite knowledge in this matter, as regards cholera and typhoid fever, as there is in regard to anthrax and other diseases that can be inoculated directly into the tissues. The report further states that bacteriology is in its infancy, and, though the results obtained by experts in the science, in regard to the persistence or destructibility of pathogenic microbes deserve full consideration, as possessing a high degree of probability, it would be rash as yet to assign to them such a position of absolute certainty as would enable us to dispense with the evidence of experience.

With regard to the influence of light in pathogenic microbes, Professor Buchner demonstrated in a lecture delivered before the Munich Medical Union towards the close of 1892, that typhoid and cholera bacilli freely distributed in water, were destroyed by direct sunlight in from one to two hours. The disinfecting activity of light was so powerful that, for instance, water which contained in a cubic centimetre 100,000 germs of the bacillus colicomm was found, after one hour's action of direct sunlight, to be completely germ free.

Mrs. Percy Frankland, in an article in the *Sanitary Record* on "How Cholera may be spread in reference to cholera bacilli," states, *inter alia*, that "we have learnt that these cholera bacilli are very sensitive to a dry atmosphere, and it is possible that the action of the sun's rays (which is now known to have a most prejudicial effect upon micro-organisms), together with the dryness of the air, which usually prevails in the summer months, might combine to reduce their vitality or even destroy them. In the *Sanitary Record* of 9th September, 1893, it is stated that Dr. Rüger, in his interesting paper on the Hamburg Cholera Outbreak, clinches his argument from the experiment made on himself, in which he swallowed 100,000 bacilli from a pure culture without any bad effect, by a reference to the experience of the

the men who follow their calling on or beside the river Eibe at Hamburg, according to the Eldefeld doctor, among the thousands of beer brewery workmen, sailors, harbour labourers, boatmen and fishermen who pursue their avocations on the river itself or its banks, who use its water freely for drinking, cooking and washing, hardly any were attacked by cholera, and these people, who are inconsiderately reckless, who pay no attention to disinfection of the hands, and who are deplorably deficient in the matter of cleanliness, enjoyed immunity from the disease."

Dr. Ravenez sums up the question of microbes as follows:—By microbes we are to understand all the inferior beings belonging to animal or vegetable life whose presence has been revealed by the microscope as existing in a great number of diseases common to both the lower animals and man, and present also in certain organic products such as wine, beer, milk, eggs, &c.

These are the bad microbes, the pathogenic microbes, those which interest us chiefly from a hygienic point of view. But as we have already said, there are good and beneficial microbes; useful microbes. Of those are the ferocious Phagocytes, those who feed on the bad microbes; and there are those who find their way into our food, and are the ferments of different digestions, and without which our own digestion would be difficult of accomplishment. As Dr. Mounet so well says:—"Nothing that is made here below, nothing that is destroyed escapes from the incessant and inevitable action of the microbe. Without this infinitesimal creature life on this globe would be untenable and impossible. It weighs down the balance between life and death."

It is in this struggle against the pernicious pathogenic microbe that the conditions are attained which insure the prosperity of the individual and the species; it is in this struggle that the conditions are arrived at which are most favourable to man's development and preservation. The earth which in common supports us all; the water we drink and which enters largely into the composition of our food, which is used for our ablutions, and is the chief factor in cleansing our houses and streets; the air we breathe, which we absorb through the tegument of our skin, which bathes us so to speak and penetrates each orifice; the food we eat, be it animal or vegetable; our covering, whether fixed as the roof and walls which surround us or portable as our clothing—all these indispensable accessories of life are polluted by swarming microbes. The discovery of the microbe, its morphology, the study of the extraordinary rôle which this infinitesimal being plays has revolutionised biological science, particularly hygiene. This last is no longer a collection of common-place precepts based on vague ideas. It is an exact science, conceived, built up, and extended by Pasteur.

I have dealt at some length with this subject, because it bears upon the question at issue, and it is necessary to produce evidence to show that, even if pathogenic germs found their exit at the shafts, they would be transferred to a condition of life under which they would not be allowed to exist. It would appear that there is no resting-place except the dark cupboard of the laboratory. If they pass into the air they are either eaten up or become so attenuated that they cease to exist. If they find their way into water—and this is shown to be the only way in which human beings can be infected with cholera or typhoid bacilli—the water bacteria exert an influence over them for the good. It has also been shown that sunlight is inimical to the existence of the "unfriendly" germ. A leading bacteriologist has stated "that in the laboratory they are compelled to keep all pure cultures in a dark cupboard; otherwise they would die out rapidly, becoming weaker and weaker."

If we take Mr. Smith's analogy of the sewer, being a huge culture chamber, being dark and having favourable conditions for cultivation of germs, according to the above statement, to carry the analogy to its logical conclusion, directly the germs were exposed to the light, by having their exit from the shaft, they would die out. What then becomes of the germs which are having or are to have such dire effect on the public health.

Again, the largest number of germs which was found at one time only, after five different trials, was 2,260 per litre; and $\frac{1}{1000}$ gives—say, 3 per cubic centimetre—the highest number at any other time was 326 per litre—to get the number per cubic centimetre the germ would have to be divisible; in other words, with one exception the number is so small that they cannot be reckoned by the standard of cubic centimetre. It has been before stated that the water supply at Zurich is distributed, containing 31 germs per cubic centimetre, or 31,000 per litre; Koch's limit being 100 per cubic centimetre, or 100,000 per litre. There is also evidence that it takes a considerable dose of pathogenic germs to be injurious. If the foregoing be true, and it is in statements of bacteriologists of repute, what possible chance of danger is there, even supposing a few unfriendly germs did find their way into the atmosphere?

Moreover the sewers and branches leading to the shafts are never in a state of absolute dryness; and there is the probability that if germs are passing in the air, they would become entangled in the moist periphery of pipes and sides of sewer.

The foregoing is the theoretical aspect of the question, and the conclusion arrived at by the Royal Commission for Water Supply to London will apply in this case; it is as follows:—"Bacteriology is still in its infancy; and though the results obtained by experts in the science, in regard to the persistence or destructibility of pathogenic microbes, deserve full consideration as possessing a high degree of probability, it would be rash as yet to assign such a position of absolute certainty as would enable us to dispense with the evidence of experience. This must still be our main guide." This statement I think will be found to fit the present case notwithstanding the dogmatical assertions which have lately appeared in the public press. As a matter of fact, in the question of purification of water, the foregoing Commission states that on the bacteriological aspect of the question they could not make positive or dogmatical assertions, seeing that at present experts in the science of bacteriology are themselves avowedly holding their judgment in suspense. There does not appear to be any suspending of judgment in assertions which have appeared—the public have been informed that disease germs are being spread—if such is the case every cause must have an effect. We will now see what, in the light of experience, this effect has been on the public health, the preservation of which I will assume is the object of the statements in the public prints.

The erection of the ventilating shafts was commenced in 1890, after very careful tests and consideration. The first section operated upon was a notoriously ill-ventilated one, so much so that one of the workmen on opening a branch drain on the section was struck down with a severe form of tonsillitis. The manholes at the time were all closed down with close covers, and on removal the gas from same was overpowering; the system was not carried out by either the Government or the Board, but was taken over on passing of the Act. After the shafts were erected and systematic flushing instituted the improvement was decidedly marked. During the years 1890-3, the erection of shafts, with other adjuncts,

was

was proceeded with. The total number of shafts erected is 1,136. If Mr. Smith's assumption is correct, that the shafts are discharging disease germs into the city to the danger of public health, it is only reasonable to expect an increase, rather than a decrease, in our death-rate from enteric fever. The medical officer has furnished me with the following return:—

CITY OF SYDNEY—DEATHS FROM ENTERIC FEVER.

Year.	Population.	Deaths.	Rate per 10,000.
1883	112,980	77	6.82
1884	118,645	100	8.43
1885	122,175	93	7.61
1886	123,645	69	5.58
1887	122,770	46	3.75
1888	119,590	50	4.18
1889	116,480	59	5.07
1890	113,470	43	3.79
1891	109,090	29	2.66
1892	107,730	19	1.76
1893	106,380	15	1.41
Suburbs, 1892	.....	.....	2.00
„ 1893	.....	.....	1.00

DEATH-RATE FROM PHTHISIS IN THE METROPOLIS.

Year.	Rate per 10,000.	Year.	Rate per 10,000.
1888	16.8	1891	14.3
1889	14.1	1892	12.0
1890	14.7	1893	11.6

COMPARATIVE DEATH-RATES OF THE CITIES OF SYDNEY, MELBOURNE, AND ADELAIDE.

	Area in Acres.	Population.	Density per Acre.	Total Deaths, exclusive of Hospitals.	Rate per 10,000.	Deaths from Typhoid Fever.	Rate per 10,000.
Melbourne... ..	2,300	66,391	28.8	925	139.4	19	2.8
Adelaide	3,632	39,073	10.7	826	211.1	17	4.3
Sydney	2,226	106,380	47.3	1,679	157.7	15	1.4

At end of December the zymotic death-rate for month was .9 per 10,000, the lowest rate for years past.

The state of the air in the sewers needs no better testimony than that not one single case of sickness arising through sewer gas among the men employed in the sewers has been reported during the year. There is one man in the service who has been working for over twenty years in connection with the sewers, and who has not been on the sick list once. It will be seen from the returns that the death-rate for enteric fever has been gradually *decreasing* since the Board commenced operations in 1890; in the suburbs the rate in 1893 is reduced by half of that in 1892. The death-rate from phthisis also shows a gradual decrease. It will also be seen that the zymotic death-rate of Sydney is the lowest of the three cities given in table.

The figures quoted show that the operations of the Board, both in water supply and sewerage, have not had the baneful effects which have been attributed to them. The influence on the health of the city and suburbs is all the other way, and while such good results can be shown I fail to see the necessity of abolishing one of the means by which they are obtained.

The returns show that there was not the slightest ground for the statement that the shafts were disseminators of disease germs, or, if disease did pass out of them into the atmosphere, Nature's scavengers, "the friendly microbes," performed their appointed *rôle*.

I think it will be found that the report, if anything, shows the air of the metropolitan sewers not to be the dangerous element it is supposed to be; but, at the same time, as stated in my notes on the report, there is still room for improvement, and remedial measures are being taken in connection with same.

Until it can be proved beyond a doubt, from a biological standpoint, that the ventilation of sewers, as at present carried out, is inimical to public health, I consider it would be unwise and a waste of public money to alter the system to accord with opinions which have been shown to be founded on such debatable grounds. I maintain that there is no cause for alarm, and the attempt to raise the microbe bogie is calculated to do more harm than good.

(3.) The third recommendation was the construction of reverberatory furnaces at intervals. This I could not concur with. A study of the topography of the city and suburbs and plans of the old city system would be sufficient to convince an engineer of the unpracticability of the recommendation.

As germicides they would no doubt act locally, but as ventilators I question the utility. The question was discussed in England as far back as 1844, and later, in 1866, by Sir John Bazalgette and Colonel Haywood, and found to be entirely unsuitable.

Take the old city system, which is analogous to the London system at the time (1866), comprising 70 miles of sewers of various sizes, ramifying in all directions—up courts, lanes, and narrow tortuous streets—with innumerable “dead-ends.” Connected to these sewers are at least 9,000 untrapped house connections with the rain-water pipes connected direct to same; the length of house drainage aggregating 102 miles, or a total of 172 miles. In addition to these there are the main branches constructed by the Government, which intercept the old city branches. Now the furnaces to be of utility as ventilators must cause an air-movement in or about 182 miles of sewers of all sizes with innumerable angles and bends. Experience has demonstrated that furnaces connected with the system under such conditions have only a local effect, and would, therefore, as means for ventilation, not be worth the cost of construction, land, and maintenance, which would form a considerable item.

As germicide I consider, with the evidence adduced, they are not necessary.

I would also point out the adoption of them would necessarily entail an alteration of the existing house-drainage system carried out before the inception of the Board in very much quicker time than is adopted at present. This is a question upon which the property owners might take serious objection to.

As public attention has been drawn to the matter, and as it has resolved itself into one of a biological character, I think it would be advisable to submit Mr. Smith's report to the Board of Health for them to express an expert opinion as to whether the air discharged from the Board's ventilating shafts is dangerous to the public health as alleged; this is the only point of import to be inquired into.

J. M. SMAIL, 12/3/94.

The Secretary.

Influence of the Board's operations upon the Health of the Metropolis.

THE number of deaths occurring during the past year of 1893 is greatly in excess of the number for 1892; but, notwithstanding this fact, the influence of the Board's operations has been very marked during the past year.

The increase in the death rate is due to the severe epidemic of measles which raged during August, September, and October, and to the prevalence of scarlet fever during the whole year. These two diseases, with their sequelæ in the form of respiratory diseases, were the chief causes of the increase in the death rate; but as they cannot be ascribed to any defect in a water and sewerage system they may be regarded as accidental and beyond the influence of the Board's working.

There was also a slight increase in the number of deaths from diphtheria; but this disease, according to late authorities, is so peculiar in its distribution that its causes "should not be sought for primarily in any high development of civilisation, such as sewers, but rather in some condition associated with a more primitive form of life."—(Longstaff.) Water has never been demonstrated as conveying infection.

Diarrhœal diseases also show a slight increase in the number of deaths due to them. Building sites made of town refuse and damp soils are the most productive causes of these diseases, and although high temperature of the air has long been observed to be associated with a high diarrhœal mortality, still Mr. Ballard has shown that the temperature of the soil is the essential point. "The essential cause of diarrhœa lies ordinarily in the superficial layers of the earth, where it is intimately associated with the life processes of some micro-organism not yet isolated."—(Ballard.)

It is vain to hope that typhoid fever will ever be completely avoided, but during the past few years the disease has been so modified in its course that only 76 deaths occurred during the past year in the metropolis from this disease, and although it was very prevalent in the city during the month of December no deaths were registered for this disease. Although drainage defects tend to promote the existence of typhoid fever, it is often difficult to disassociate their influence from that of co-existent hygienic defects, such as want of personal cleanliness and impurity of soil. The extension of the Board's operations to the various suburbs has been attended with excellent results, the death rate from typhoid fever in 1892 being 2 as against 1 for 1893 per 10,000 of the population. A reference to the Table D will sufficiently show how marked has been the influence for good of all lately undertaken sanitary works in this city. If it were true that the air was laden with pathogenic germs which, floating over the city, were likely to cause disastrous epidemics, it would be reasonable to expect an increase rather than a decrease in our death rate from enteric fever.

Phthisis, which increases rapidly on damp soils, did not cause so many deaths last year as in former years, and there has been a marked decrease in the death rate from this disease ever since the institution of the present water and sewerage systems. Through the courtesy of Drs. Gresswell and Whittell I have been able to subjoin Table G, from which it will be seen how favourably with regard to the density of population the death-rate of Sydney compares with Melbourne and Adelaide, and in how much better a condition our city is than the others as regards typhoid fever being a factor of the death-rate.

At the commencement of the year 1893 the zymotic death rate of the city stood at 3 per 10,000 of the population, but it fell at the end of January to 1·4, and at the end of February stood at 1·5. At the end of March the prevalence of scarlet fever raised it to 1·6, but it fell again at the end of April to '8, and at the end of May to '7. At the end of June, owing to the spread of diphtheria, it rose to 1·8, and at the end of July it again fell to 1·4. During August the epidemic of measles made its appearance. The death rate at the end of this month rose to 2 per 10,000, and at the end of September, when the epidemic was at its height, the rate rose to 8. At the end of October it fell to 6·4, and at the end of November to 2·4. At the end of December, 1893, the zymotic death rate stood at '9 per 10,000, the lowest zymotic death rate for some years past. With regard to the presence of germs in the sewers, all sewers contain them, but fortunately, where pathogenic or unfriendly microbes exist, there are also present phagocytes or friendly microbes, which resist the attacks of the former. Protracted exposure of pathogenic microbes to the influence of light and air tends to destroy most, if not all, of them, and it is highly probable that mere diffusion of a virus in the atmosphere renders it inert. Consequently there is no need for alarm; in fact the state of the air in the sewers needs no better testimony than that not one single case of sickness arising through sewer gas among the men employed in the sewers has been reported to me during the past year.

Putting aside, therefore, the uncontrollable epidemics, it is safe to say that the Board's operations have greatly improved the national health, and also in the case of the epidemics themselves these operations have limited the area of the diseases.

THEO. M. KENDALL.

APPENDIX A.—METROPOLIS.

DEATHS due to the Epidemics of Measles and Scarlet Fever, and their Sequela.

	1892.	1893.	Excess for 1893.
Measles	2	435	433
Scarlet fever	43	145	102
Respiratory diseases.....	545	716	171
			706

Deaths from all Causes.

Year.	Population.	Deaths under - -				Total Deaths.	
		One Year.		Five Years.		Number.	Rate per 10,000.
		Number.	Rate per 10,000.	Number.	Rate per 10,000.		
1888	333,551	2,128	63.4	3,080	91.1	6,818	189.2
1889	351,470	2,323	66.09	4,273	121.1	6,431	182.9
1890	370,357	1,854	50.6	2,516	67.9	5,591	150.9
1891	389,655	2,175	55.7	2,821	72.4	6,418	169.8
1892	406,480	1,830	45.0	2,412	60.0	5,512	135.6
1893	411,710	1,966	47.7	3,161	76.7	6,481	156.8

Deaths due to Preventable Diseases.

	1888.		1889.		1890.		1891.		1892.		1893.	
	No.	Rate per 10,000.	No.	Rate per 10,000.	No.	Rate per 10,000.	No.	Rate per 10,000.	No.	Rate per 10,000.	No.	Rate per 10,000.
	Diphtheria	139	4.1	183	5.2	149	4.02	179	4.5	123	3.08	130	3.1
Enteric Fever	182	5.7	209	5.9	143	3.8	109	2.7	80	1.9	76	1.8
Diarrhoea	353	10.5	384	10.9	263	7.1	283	7.3	297	7.8	305	7.4
Total	674	20.2	771	21.6	555	14.9	566	14.5	500	12.28	511	12.3

TABLE D.

CITY OF SYDNEY.—DEATHS FROM ENTERIC FEVER.

Year.	Population.	Deaths.	Rate per 10,000.
1883	112,080	77	6.82
1884	118,645	100	8.43
1885	122,175	93	7.61
1886	123,645	69	5.58
1887	122,770	46	3.75
1888	119,590	50	4.18
1889	116,400	59	5.07
1890	113,470	43	3.79
1891	109,090	29	2.66
1892	107,730	19	1.76
1893	106,380	15	1.41

DEATH RATE FROM PHTHISIS
IN THE METROPOLIS.

Year.	Rate per 10,000.
1888	16.8
1889	14.1
1890	14.7
1891	14.3
1892	12.0
1893	11.6

MORTALITY from Enteric Fever during the years 1892 and 1893 per 10,000 of the population.

Month.	City.		Suburbs.	
	1892.	1893.	1892.	1893.
January .....	.4	.09	.2	.2
February	0	.1	.1	.1
March .....	.2	.09	.4	.2
April .....	.1	.09	.4	1.5
May .....	.09	.1	.2	.2
June .....	.0	.1	.04	.1
July .....	.09	0	.1	.09
August	0	0	0	0
September .....	.09	.1	.1	.09
October	0	.1	.1	.09
November .....	.09	.1	.1	.09
December .....	.1	0	.1	.3
	1.76	1.41	2.04	1.9

TABLE G.—COMPARISON of Death-rate of the Cities of Sydney, Melbourne, and Adelaide.

Area in Acres.	Population.	Density per Acre.	Total Deaths exclusive of Hospitals, &c	Rate per 10,000.	Deaths from Typhoid Fever	Rate per 10,000.	Cities.
2,300	66,391	28.8	925	139.4	19	2.8	Melbourne.
3,632	39,073	10.7	826	211.1	17	4.3	Adelaide.
2,226	106,880	47.3	1,679	157.7	15	1.4	Sydney.

Annual Report of Assessor's Branch.

Sir,

22 February, 1894.

I have the honor to submit my report for 1893.

The year has been one of depression almost without precedent in the history of the Colony, and during which period financial and commercial institutions and individuals have suffered alike. Property values in both the city and suburbs have depreciated in a very marked degree, while every description of building—warehouses, mercantile offices, pretentious mansions, and the humblest of dwellings—are unoccupied and idle on all sides. From authentic sources reports are heard that even where properties have been offered at rentals reduced by as much as from 30 to 40 per cent. they remain untenanted; hence the effect of the depression on all classes of property holders may be readily understood.

Notwithstanding the foregoing it must be gratifying to the Board that the receipts for the year exceeded those of the previous one by £8,146 6s. 11d.; also, that the amount of outstanding rates decreased by £5,670 17s. Whilst reviewing the circumstances consequent upon such depressed times these results cannot be accepted but with satisfaction.

The following is a summary of the work performed during the year.

Rate Notices.

219,547 notices were served during the year, being an increase of 11,340 over the number during 1892, and covers those for new mains, new sewers, and final notices for payment of rates.

New Mains and New Sewers.

3,979 properties became liable for rating during the year, namely, 646 from new mains and 3,333 from new sewers. It will be seen that there is a large decrease in the number of properties that become liable from new mains, and the reduction may be accounted for by the stoppage of funds required for reticulation works. The Richmond district water supply was placed under the control of the Board in June last.

New Assessments.

3,198 new buildings were assessed during the year, or 1,120 less than in 1892. This decrease can only be taken as further evidence of the depression, as many of the buildings were well advanced towards completion in 1892 but were not assessed by us till 1893.

Building Fees.

The amount received in payment of building fees for the year was £2,263 12s. 6d., as against £2,925 16s. for 1892, being a decrease of £662 3s. 6d.

Recovery of Rates.

The receipts for the year amounted to £254,025 8s. 1d., and the arrears outstanding on the 31st December amounted to £29,775 17s. 10d., and in which is included the sum of £7,858 9s. 5d. due on meters, the readings of which were only taken at the end of the year, and consequently could not be recovered till after the accounts had been rendered in January; £3,928 2s. 10d. due on churches and charitable institutions, for which no steps have as yet been taken to recover; and £2,311 10s. due by the Government on the 31st December. 27,089 final notices were served and 4,875 summonses issued, being a decrease of 4,737 and 769 respectively.

Summonses Issued.

Balmain Court	...	...	...	...	...	385
Central Court	...	...	...	...	...	649
District Court	...	...	...	...	...	233
Glebe Court	...	...	...	...	...	397
Liverpool Court	...	...	...	...	...	8
Newtown Court	...	...	...	...	...	1,067
North Sydney Court	...	...	...	...	...	318
Paddington Court	...	...	...	...	...	526
Parramatta Court	...	...	...	...	...	88
Redfern Court	...	...	...	...	...	491
Ryde Court	...	...	...	...	...	67
Water Police Court	...	...	...	...	...	646
Total	...	...	...	...	...	4,875

Properties rated to 31st December, 1893.

Water.

						Estimated supplied with water.
City and Suburbs	...	...	...	...	85,038	81,288
Campbelltown	...	...	...	...	214	171
Liverpool	...	...	...	...	445	129
Richmond	198	193

Sewerage.

City and Suburbs	39,655	Connected to Sewers. 36,062
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SPECIAL

ASSESSOR'S REPORT—*continued.*

SPECIAL FEES :—Stock, Gardens, &c.

Fees were paid for 9,745 head of stock, or 435 less than the number paid for in 1892. This decrease is to a great extent due to the fact that so many persons have had no work for their horses that they have been compelled to turn them out in the country to avoid the expense of stable keep.

Fees were paid for 1,594 gardens, being an increase of 259 for the year.

Richmond.

The receipts for the portion of the year from the time the Board took control of the supply, amounted to £358 7s. 4d., leaving £41 7s. 11d. outstanding on the 31st December, as shown by the following statement:—

						£	s.	d.
Rates	...	...	...	...	...	135	10	9
Meters	...	...	...	...	...	81	18	2
New Mains	...	...	...	...	...	163	5	11
House Supply	...	...	...	...	...	2	18	10
Stock	...	...	...	...	...	21	0	0
Gardens	...	...	...	...	...	0	10	0
Special Fees	...	...	...	...	...	4	5	0
Building Fees	...	...	...	...	...	3	15	10
Total						£413	4	6
Amount of Receipts	...	...	...	...	...	358	7	4
Rates Cancelled or Removed	...	...	...	...	...	13	9	3
Outstanding	...	...	...	...	...	41	7	11
Total						£413	4	6

H. J. BEAUMONT,
Assessor.

House to House Inspection, 1892 and 1893—Districts Completed by Waste Water Inspectors.

Districts.	Water Service.					Sewerage Service.				
	Rated.		Connected to 31st Dec., 1892.	Connected during 1893.	Total Connected to 31st Dec., 1893.	Rated.		Connected to 31st Dec., 1892.	Connected during 1893.	Total Connected to 31st Dec., 1893.
	1892.	1893.				1892.	1893.			
Bourke Ward	1,195	1,212	982	22	1,004	1,182	1,199	922	50	972
Brisbane Ward	1,308	1,313	1,114	16	1,130	1,235	1,250	954	51	1,005
Cook Ward	6,020	6,068	5,911	53	5,964	5,867	6,068	5,634	311	5,945
Denison Ward	4,232	4,270	4,153	40	4,193	3,559	3,600	3,480	87	3,567
Gipps Ward	1,905	1,909	1,670	19	1,689	1,739	1,752	1,486	69	1,555
Macquarie Ward	2,100	2,120	1,888	16	1,904	2,060	2,062	1,825	73	1,898
Phillip Ward	2,463	2,491	2,393	37	2,430	2,377	2,404	2,324	77	2,401
Ashfield	2,514	2,589	2,039	111	2,150	.....	.....	.....	.....	.....
Burwood	1,335	1,415	963	70	1,033	.....	.....	.....	.....	.....
Camperdown	1,466	1,473	1,397	26	1,423	24	759	11	500	511
Canterbury	234	237	39	15	54	.....	.....	.....	.....	.....
Concord	385	385	171	33	204	.....	.....	.....	.....	.....
Darlington	723	735	713	12	725	723	725	720	1	721
Drummoyne	295	368	150	50	200	.....	.....	.....	.....	.....
Enfield	284	291	153	23	176	.....	.....	.....	.....	.....
Fivedock	149	166	22	12	34	.....	.....	.....	.....	.....
Glebe	3,651	3,654	3,513	27	3,540	46	46	12	22	36
Granville	745	757	308	71	379	.....	.....	.....	.....	.....
Homebush	63	65	21	10	31	.....	.....	.....	.....	.....
Hurstville	479	500	159	81	240	.....	.....	.....	.....	.....
Kogarah	316	345	153	39	192	.....	.....	.....	.....	.....
Marrickville	3,038	3,223	2,712	137	2,849	.....	.....	.....	.....	.....
Newtown	4,251	4,302	4,177	95	4,272	776	2,326	413	1,382	1,795
North Sydney	3,435	3,811	2,620	189	2,809	.....	.....	.....	.....	.....
Paddington	3,912	4,036	3,840	134	3,973	3,395	3,965	3,369	142	3,511
Petersham	2,447	2,585	2,031	119	2,150	.....	98	14	67	81
Prospect and Sherwood	37	58	29	6	35	.....	.....	.....	.....	.....
Redfern	4,680	4,694	4,539	61	4,600	3,950	4,098	2,682	138	2,820
Rockdale	989	1,050	260	103	363	.....	.....	.....	.....	.....
Rookwood	170	165	18	14	32	.....	.....	.....	.....	.....
St. Peter's	1,018	1,117	690	55	745	.....	.....	.....	.....	.....
Strathfield	374	462	171	33	204	.....	.....	.....	.....	.....
Willoughby	338	458	68	82	150	.....	.....	.....	.....	.....
Woollahra	2,223	2,289	2,179	60	2,239	1,494	1,668	1,279	136	1,415

H. J. BEAUMONT,
Assessor

ASSESSOR'S REPORT—continued.

SUMMARY of Properties Liab and Notices Delivered during 1893.

Ward or Borough.	No. of Properties Liab.								No. of Notices Delivered during 1893.										Total.
	No. of Properties liab, 1st January, 1893.		New Houses on Old Mans becoming liab during Year.		Properties becoming liab through		Total No. of Properties liab, 31st December, 1893.		Water and Sewer- age Rates.	New Houses on Old Mans and Sewers.	New Mans, including Notices to Connect.	New Sewers, including Notices to Connect.	Second Notices to Connect with Sewers.	Demand Notices for Payment of Sewerage Expenses.	Stock Notices.	No. of Final Notices Issued.	No. of Distress Notices Issued.		
	Water.	Sewer- age.	Water.	Sewer- age.	New Mans	New Sewers	Water.	Sewer- age.											
Bourke Ward	1,195	1,182	17	17	..	..	1,212	1,109	2,413	17	..	..	..	..	36	609	3	3,168
Brishane Ward	1,908	1,235	11	15	..	..	1,319	1,350	2,748	11	..	..	..	..	102	800	15	3,679
Cook Ward	6,020	5,867	88	88	..	..	6,108	5,955	12,067	88	..	..	..	..	694	1,966	66	14,881
Denison Ward	4,232	3,559	36	36	2	5	4,270	3,609	8,562	36	4	10	..	14	436	1,312	27	10,401	
Fitzroy Ward	3,662	3,393	24	24	..	3	3,686	3,420	7,305	24	..	6	..	..	306	1,144	39	8,824
Gipps Ward	1,994	1,729	16	13	..	..	2,010	1,752	3,932	16	..	..	..	..	72	815	15	4,850
Macquarie Ward	2,109	2,060	21	20	..	..	2,121	2,080	4,235	21	..	..	..	..	165	722	3	5,146
Phillip Ward	2,463	2,377	28	24	..	2	2,491	2,403	4,897	28	..	4	..	12	256	787	25	6,009	
Alexandria	1,776	1,155	49	30	8	45	1,833	1,239	3,643	49	16	60	440	13	299	564	12	5,137	
Ashfield	2,525	..	86	..	25	..	2,634	..	5,003	86	60	..	..	..	283	836	34	6,352
Auburn	190	..	8	..	15	..	213	..	373	8	30	..	..	..	28	94	2	535
Balmain	5,621	..	126	..	2	..	5,749	..	11,153	126	4	..	..	..	482	1,484	70	13,271
Bankstown	6	..	..	..	..	..	6	..	12	..	..	..	..	..	..	1	..	11
Botany	288	..	28	..	47	..	363	..	613	28	94	..	..	..	17	70	4	820
Burwood	1,332	..	63	..	24	..	1,419	..	2,705	63	48	..	..	..	192	268	14	3,200
Campbelltown	194	..	10	..	10	..	214	..	410	10	20	..	..	..	16	161	..	567
Camperdown	1,450	24	25	15	..	760	1,475	799	2,910	25	..	1,520	357	..	306	521	31	5,670	
Canterbury	215	..	7	..	1	..	223	..	452	7	2	..	..	..	42	65	4	572
Cecil Hill	..	..	1	..	..	..	1	..	1	1	..	..	..	..	..	..	..	2
Concord	351	..	16	..	12	..	382	..	723	16	24	..	..	..	54	171	7	995
Darlington	736	723	11	11	..	..	747	734	1,476	11	..	..	..	..	115	156	3	1,761
Drummoyne	302	..	37	..	45	..	384	..	631	37	90	..	..	..	40	123	3	979
Enfield	276	..	14	..	6	..	296	..	574	14	12	..	..	..	67	101	1	750
Erskinvill	1,213	412	25	21	..	1	1,238	434	2,447	25	..	2	92	..	101	269	6	2,941	
Five Dock	126	..	0	..	20	..	165	..	271	9	40	..	..	..	35	65	3	423
Glebe	3,621	46	39	2	..	36	3,660	84	7,246	39	..	72	30	..	526	734	18	8,065	
Granville	739	..	29	..	21	..	789	..	1,513	29	42	..	..	..	86	238	11	1,979
Guildford	12	..	1	..	..	..	13	..	26	1	..	..	..	..	..	8	..	30
Homebush	64	..	1	..	1	..	66	..	127	1	2	..	..	..	7	21	..	168
Hoxton Park	..	..	1	..	..	..	1	..	1	1	..	..	..	..	..	..	..	2
Hunter's Hill	449	..	14	..	3	..	466	..	919	14	6	..	..	..	52	74	6	1,070
Hurstville	452	..	52	..	6	..	510	..	890	52	12	..	..	..	67	237	12	1,279
Islands	21	..	3	..	..	..	24	..	46	3	..	..	..	..	..	..	..	49
Kogarah	310	..	26	..	3	..	339	..	632	26	0	..	..	..	45	130	5	844
Leichhardt	4,042	..	269	..	10	..	4,321	..	8,321	269	20	..	..	..	565	1,415	69	10,659
Liverpool	423	..	7	..	16	..	445	..	872	7	30	..	..	..	29	276	..	1,214
Marrickville	3,162	..	161	..	29	..	3,352	..	6,287	161	68	..	..	..	421	1,042	45	8,024
Mossman	..	..	52	..	8	..	60	..	227	52	16	..	..	..	26	88	1	410
Newtown	4,309	776	110	50	..	1,500	4,419	2,326	9,065	110	..	3,000	885	..	597	1,136	20	14,622	
North Botany	326	3	19	..	38	..	383	3	677	19	76	..	..	..	20	93	..	885
North Sydney	3,398	..	189	..	51	..	3,688	..	7,039	189	102	..	..	..	328	1,243	41	8,902
Paddington	3,986	3,395	104	89	..	481	4,090	3,965	8,031	104	..	962	1	4	450	1,082	59	10,693	
Parramatta	..	..	..	..	17	..	17	..	26	..	84	..	..	..	..	..	..	54
Petersham	2,143	..	132	5	20	105	2,301	116	4,906	132	62	210	..	..	251	638	18	6,227
Prospect and Sherwood	29	..	1	..	38	..	63	..	100	1	76	..	..	..	16	35	1	235
Randwick	1,198	87	81	8	13	98	1,292	143	3,404	81	26	190	..	..	118	761	24	4,410
Redfern	4,763	3,950	72	73	..	75	4,823	4,090	9,497	72	..	150	116	44	514	1,270	32	11,695	
Rockdale	992	..	79	..	81	..	1,102	..	2,000	79	62	..	..	..	143	310	30	2,673
Rookwood	180	..	5	..	1	..	186	..	356	5	2	..	..	..	9	72	9	455
Ryde	297	..	10	..	2	..	309	..	604	10	4	..	..	..	80	90	6	803
St. Peter's	1,025	..	54	..	10	..	1,089	..	2,080	54	20	..	..	..	273	275	20	2,731
Strathfield	338	..	52	..	8	..	448	..	802	52	16	..	..	..	42	174	1	1,087
Waterloo	1,992	1,761	30	20	6	54	2,028	1,825	3,997	30	12	168	362	..	325	787	31	5,652	
Waverley	2,017	491	101	18	..	2	2,118	606	4,052	101	..	4	..	..	225	755	23	5,100
Willoughby	888	..	48	..	91	..	927	..	890	48	182	..	..	..	180	263	13	1,586
Woolahra	2,214	1,494	69	79	1	166	2,312	1,739	4,467	69	2	332	56	36	298	690	25	6,003	
Total	82,506	85,609	2,546	663	646	3,333	85,007	89,056	109,332	2,546	1,292	6,000	1,845	128	9,747	27,089	993	219,547	

HERBERT J. BEAUMONT,
Assessor.

ASSESSOR'S REPORT—continued.

STOCK AND GARDENS.

Ward or Borough.	Stock.						Gardens.					
	1892.			1893.			1892.			1893.		
	No. of Stock Registered.	Amount of Fees Paid for the Year.	Amount Outstanding on 31st Dec., 1892.	No. of Stock Registered.	Amount of Fees Paid for the Year.	Amount Outstanding on 31st Dec., 1893.	No. of Gardens Registered.	Amount of Fees Paid for the Year.	Amount Outstanding on 31st Dec., 1892.	No. of Gardens Registered.	Amount of Fees Paid for the Year.	Amount Outstanding on 31st Dec., 1893.
	£ s. d.	£ s. d.		£ s. d.	£ s. d.		£ s. d.	£ s. d.		£ s. d.	£ s. d.	
Bourke Ward.....	35	7 7 6	0 5 0	36	7 0 0	1 0 0	6	4 10 0	1 0 0	9	2 15 0	3 10 0
Brisbane Ward.....	114	22 10 0	.....	102	24 17 6	.....	2	1 10 0	.....	2	1 10 0	.....
Cook Ward.....	796	145 0 0	.....	694	156 15 0	2 17 6	8	7 0 0	.....	19	7 10 0	.....
Denison Ward.....	579	121 0 0	.....	436	103 10 0	1 10 0	3	1 10 0	.....	1	0 10 0	.....
Fitzroy Ward.....	410	79 0 0	.....	392	69 5 0	2 15 0	61	45 15 0	0 10 0	61	51 10 0	1 15 0
Gipps Ward.....	53	4 12 6	.....	72	17 12 6	.....	5	2 10 0	.....	5	2 0 0	0 10 0
Macquarie Ward.....	215	42 0 0	.....	165	37 7 0	0 19 0	3	1 0 0	0 10 0	3	.....	1 10 0
Philip Ward.....	321	69 5 0	.....	256	58 0 0	.....	2	2 10 0	.....	2	1 10 0	1 0 0
Alexandria.....	291	63 17 6	.....	299	67 7 6	1 10 0	5	2 0 0	0 10 0	5	2 0 0	.....
Ashfield.....	209	41 10 0	0 15 0	203	65 2 6	0 2 6	104	53 15 0	0 10 0	110	72 17 6	1 10 0
Auburn.....	7	1 12 6	.....	28	5 5 0	.....	.....	.....	.....	1	0 5 0	.....
Balmain.....	453	93 5 0	1 12 6	432	95 7 6	4 0 0	59	39 5 0	.....	70	46 10 0	.....
Bankstown.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Botany.....	9	2 5 0	.....	17	3 12 6	.....	2	0 15 0	.....	2	1 0 0	.....
Burwood.....	265	48 17 6	0 7 6	192	41 17 6	1 2 6	56	31 15 0	1 10 0	71	40 10 0	1 0 0
Campbelltown.....	17	4 5 0	.....	16	2 10 0	1 10 0	4	2 0 0	.....	4	1 10 0	0 10 0
Campersdown.....	246	56 17 6	.....	306	68 2 6	2 5 0	7	4 0 0	.....	8	2 17 6	1 0 0
Canterbury.....	38	6 2 6	.....	42	7 7 6	.....	.....	.....	.....	.....	.....	.....
Cecil Hill.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Concord.....	59	8 2 6	.....	54	10 7 0	0 5 0	2	1 19 0	.....	3	2 5 0	.....
Darlington.....	139	29 7 6	.....	115	25 7 6	0 10 0	.....	.....	.....	.....	.....	.....
Drummoyne.....	32	5 15 0	.....	40	7 10 0	0 2 6	5	2 10 0	.....	7	4 15 0	.....
Enfield.....	44	8 15 0	.....	57	10 12 6	0 15 0	4	3 10 0	.....	6	4 5 0	.....
Erskineville.....	84	16 17 6	0 15 0	101	22 17 6	.....	4	2 5 0	.....	4	2 10 0	.....
Five Dock.....	6	0 17 6	.....	35	5 17 6	0 15 0	.....	.....	.....	1	0 5 0	.....
Glebe.....	613	123 5 0	0 10 0	526	117 0 0	3 15 0	76	43 15 0	1 0 0	94	51 0 0	4 10 0
Granville.....	54	10 17 6	.....	86	18 10 0	0 5 0	7	3 10 0	.....	8	4 10 0	.....
Gullford.....	2	0 10 0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Homebush.....	7	0 17 6	.....	7	1 5 0	0 5 0	.....	.....	.....	.....	.....	.....
Hoxton Park.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hunter's Hill.....	40	0 15 0	.....	52	8 0 0	.....	6	4 10 0	.....	10	6 0 0	.....
Hurstville.....	69	9 7 6	0 2 6	67	9 2 6	0 15 0	2	0 5 0	.....	5	3 0 0	.....
Islands.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Kogarah.....	43	7 7 6	.....	45	8 10 0	0 10 0	5	8 0 0	.....	8	7 10 0	2 10 0
Leichhardt.....	575	106 15 0	2 5 0	565	117 12 6	1 10 0	64	42 0 0	0 10 0	74	44 17 6	3 5 0
Liverpool.....	28	4 12 6	1 0 0	29	3 17 6	3 5 0	1	0 10 0	.....	5	2 10 0	.....
Marrickville.....	457	91 7 6	0 5 0	421	96 12 6	4 15 0	101	66 5 0	1 0 0	123	75 2 0	0 15 0
Moseman.....	.....	.....	.....	26	6 10 0	.....	.....	.....	.....	3	4 10 0	.....
Newtown.....	565	117 12 6	0 10 0	597	127 15 0	0 15 0	27	20 10 0	0 10 0	30	18 15 0	1 0 0
North Botany.....	10	2 5 0	.....	20	3 15 0	.....	1	0 5 0	.....	4	1 5 0	.....
North Sydney.....	361	72 17 6	0 2 6	338	62 6 3	1 2 6	126	82 5 0	2 15 0	160	93 15 0	4 5 0
Paddington.....	510	98 15 0	0 5 0	450	98 12 6	3 7 6	53	84 10 0	.....	63	38 10 0	2 15 0
Parramatta.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Petersham.....	284	62 17 6	0 6 0	251	53 12 6	0 5 0	113	74 15 0	1 10 0	134	74 0 0	7 0 0
Prospect and Sherwood.....	.....	.....	.....	46	2 5 0	.....	.....	.....	.....	.....	.....	.....
Randwick.....	135	26 0 0	.....	118	27 7 0	0 15 0	63	47 0 0	1 10 0	90	63 15 0	3 0 0
Redfern.....	616	124 12 6	0 10 0	514	119 17 6	0 15 0	21	12 10 0	.....	18	11 0 0	.....
Rockdale.....	94	18 2 6	.....	143	24 10 0	0 10 0	26	19 10 0	.....	39	27 2 6	2 0 0
Rookwood.....	.....	.....	.....	9	1 2 6	.....	1	0 5 0	.....	1	0 15 0	.....
Ryde.....	57	11 17 0	.....	80	17 15 0	0 15 0	.....	.....	.....	2	1 10 0	.....
St. Peter's.....	214	43 10 0	.....	273	58 12 6	0 2 6	4	1 10 0	.....	5	3 0 0	.....
Strathfield.....	29	5 0 0	.....	42	7 10 0	.....	26	26 5 0	.....	41	33 15 0	.....
Waterloo.....	425	82 2 0	0 2 6	325	76 5 0	0 7 6	12	6 0 0	.....	13	7 0 0	.....
Waverley.....	261	49 0 0	0 5 0	225	48 7 6	2 0 0	104	59 15 0	8 0 0	118	63 5 0	15 15 0
Willoughby.....	5	0 17 6	.....	130	15 10 0	.....	1	0 10 0	.....	2	0 5 0	0 10 0
Woollahra.....	318	58 7 6	4 0 0	298	66 12 6	1 10 0	148	125 5 0	1 0 0	156	132 0 0	6 5 0
Totals.....	10,180	2,012 15 0	13 7 6	9,745	2,109 8 9	51 0 0	1,335	919 10 0	23 5 0	1,594	1,027 17 6	65 15 0

HERBERT J. BEAUMONT,

Assessor.

ASSESSOR'S REPORT—continued.

SUMMARY of Rates, Fees, &c., for Water.

Ward or Borough.	No. of Properties liable.	Water Rates.	Meter Accounts.	New Mans.	House Supply.	Stock.	Gardens.	Special Fees.	Building Fees	Revenue for 1893.	Less Rates cancelled or removed.	Net Revenue.	Arrears from previous years.	Total Water Rates receivable to 31st December, 1893.
		£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Bourke Ward	1,212	10,431 8 0	3,134 15 3		190 3 10	9 0 0	6 5 0	73 12 6	19 13 11	18,775 19 3	217 19 2	13,558 0 1	2,558 5 0	16,116 5 1
Brisbane Ward	1,319	7,290 3 7	1,633 1 10		44 17 2	25 2 6	1 10 0	41 15 0	36 18 9	9,023 8 10	34 17 7	8,938 11 3	1,122 17 0	10,061 8 3
Cook Ward	6,108	7,605 7 10	640 16 2		37 0 2	107 0 0	7 15 0	13 12 5	87 9 8	8,569 1 3	32 1 7	8,526 19 8	724 7 8	9,251 7 4
Denison Ward	4,270	6,566 16 4	5,358 10 4	1 14 8	98 0 4	108 15 0	0 10 0	34 7 6	42 0 2	12,211 0 4	146 6 5	12,064 12 11	2,093 10 7	14,158 4 6
Fitzroy Ward	3,658	6,932 15 6	590 10 9		35 17 11	78 10 0	53 15 0	16 12 6	39 13 8	7,745 15 3	25 3 0	7,720 12 3	1,094 15 3	8,815 1 6
Gipps Ward	2,010	4,325 10 1	1,907 0 6		28 5 7	18 5 0	2 10 0	12 10 0	18 4 8	6,310 14 10	28 15 2	6,281 19 8	817 2 7	7,099 2 3
Macquarie Ward	2,181	8,416 9 1	656 12 0		129 10 10	40 17 6	1 10 0	84 7 6	70 0 1	9,399 7 0	36 0 7	9,313 6 5	1,104 4 0	10,417 10 5
Phillip Ward	2,491	3,911 15 1	1,550 6 4		33 13 5	63 15 0	2 10 0	11 7 6	38 1 4	5,618 8 8	187 17 6	5,430 11 2	1,360 19 11	6,791 11 1
Alexandria	1,833	1,310 7 4	104 6 6	0 17 3	10 4 7	73 2 6	2 10 0	8 5 0	24 19 7	1,624 12 9	18 7 2	1,606 5 7	164 14 4	1,770 19 11
Ashfield	2,634	3,229 17 0	156 4 11	15 10 6	21 18 4	68 10 0	85 2 6	4 17 6	80 13 5	3,662 14 2	20 18 0	3,641 15 8	335 13 1	3,980 13 9
Auburn	213	150 8 3	1 6 0	8 0 2	2 12 1	5 5 0	0 5 0		1 8 0	169 5 3	5 3 9	164 1 6	32 8 3	196 9 9
Balmain	5,479	4,516 12 5	1,264 13 0	0 10 7	35 4 3	109 10 0	48 5 0	14 10 0	101 2 11	6,090 8 11	27 14 8	6,062 14 3	696 8 4	6,759 2 7
Bankstown	6	6 4 2								6 4 2	0 17 6	5 6 8	0 7 0	5 13 8
Botany	363	232 14 4	88 6 0	2 16 6	4 4 1	3 12 6	1 0 0	0 7 6	4 3 10	337 3 9	7 13 9	329 10 0	50 2 11	379 12 11
Burwood	1,419	1,664 8 8	63 15 11	2 18 2	13 3 3	45 2 6	42 5 0	1 17 6	70 10 1	2,269 1 1	7 10 0	2,261 11 1	160 10 4	2,421 11 5
Camppbelltown	214	298 15 9	87 3 0	5 18 9	6 19 9	4 0 0	2 0 0	1 0 0	2 0 6	406 17 9	5 3 2	401 14 7	77 10 6	479 11 1
Campertown	1,475	1,276 10 9	97 13 0	10 6 5	10 6 5	74 12 6	4 7 6	1 12 6	23 7 10	1,453 11 1	10 7 9	1,443 3 4	379 2 3	1,822 5 7
Canterbury	223	189 3 9	19 15 6	20 16 3	1 7 11	7 7 6			3 3 6	253 14 5	20 12 0	211 2 5	41 0 8	252 2 4
Cecil Hill	1	5 0 0			5 0 0					10 0 0	10 0 0			
Concord	352	393 16 2	93 10 4	1 14 5	4 4 2	12 5 0	2 5 0		15 14 7	523 9 8	3 5 6	520 4 2	62 15 4	582 19 6
Darlington	747	709 14 9	121 6 6	2 0 0	2 0 0	23 12 6		0 15 0	9 9 9	871 17 6	3 18 3	868 0 3	49 7 11	917 8 0
Drummoyle	884	380 2 9	21 17 3	6 6 2	12 8 8	8 10 0	5 5 0		22 11 4	430 1 2	3 1 0	427 0 2	20 7 11	450 8 1
Ebelfield	296	364 3 0	26 2 9	8 1 0	7 10 1	13 5 0	4 5 0		10 13 8	374 0 0	3 14 4	370 11 8	27 12 3	398 3 11
Erskineville	1,233	324 9 3	156 2 9		7 2 8	23 7 6	3 0 0	1 2 6	12 3 11	1,027 8 7	5 10 0	1,022 18 7	73 11 0	1,095 9 7
Five Dock	156	201 19 5	46 4 5	3 13 3	3 18 7	0 12 6	0 5 0	0 5 0	2 18 8	265 10 10	13 11 11	247 4 11	12 18 2	260 3 1
Glebe	3,660	3,920 18 5	699 3 2		20 12 0	133 17 6	57 0 0	5 2 6	67 16 2	4,904 10 6	23 4 9	4,881 6 9	331 0 4	5,207 6 5
Greenville	789	654 16 1	498 11 3	6 3 4	5 5 3	20 2 6	8 0 0	1 5 0	3 1 8	1,196 5 1	11 13 1	1,185 12 0	199 18 5	1,384 10 5
Guildford	13	24 1 8	0 0 8		0 3 8				1 15 0	26 7 0	2 5 0	24 2 0	14 10 0	38 12 0
Homebush	66	60 3 6	144 8 0	1 3 10	1 13 9	1 10 0				208 19 1	1 4 10	207 14 3	19 15 11	227 10 2
Hoxton Park	1	0 7 6			0 12 6					1 0 0		1 0 0		1 0 0
Hunter's Hill	409	729 19 0	424 18 7	2 7 4	4 5 1	11 10 0	6 0 0	2 15 0	10 5 9	1,191 1 6	34 17 0	1,156 4 6	268 14 0	1,424 18 0
Hurstville	519	404 17 4	150 6 8	0 12 9	12 10 8	10 17 6	3 0 0	0 10 0	24 15 6	616 11 9	7 3 10	609 7 11	54 12 1	664 0 0
Islands	24	213 0 2	121 16 0	5 15 4	7 0 0			1 5 0		341 16 6		341 16 6	231 1 5	622 17 8
Kogarah	389	329 2 11	20 17 3	1 5 10	7 0 0	9 12 6	10 0 0		23 17 2	401 16 8	5 6 4	396 9 4	38 11 5	435 0 9
Leichhardt	4,321	3,204 14 0	164 15 2	2 2 9	51 10 11	126 17 6	49 12 6	9 18 9	197 1 2	3,866 12 9	25 11 0	3,841 1 9	345 9 2	4,186 10 11
Liverpool	445	481 1 3	256 19 0	5 2 6	7 10 6	7 2 6	2 15 0	0 5 0	1 12 8	962 8 5	5 13 2	956 16 3	369 9 6	1,318 4 9
Marrickville	3,352	3,038 5 9	175 13 9	5 15 10	43 9 6	107 0 9	82 12 6	7 10 0	150 4 7	3,608 12 2	39 5 5	3,569 6 9	376 1 0	3,945 7 9
Mosman	60	203 13 7	4 15 4		10 10 11	6 10 0	4 10 0		19 1 8	258 1 6	1 11 5	256 10 1		256 10 1
Newtown	4,419	4,155 6 7	239 3 3		27 11 0	142 17 6	23 5 0	13 5 0	104 5 9	4,755 14 1	40 1 4	4,715 12 9	239 12 10	5,055 5 7
North Botany	383	193 10 0	13 11 6	2 12 6	4 8 8	3 15 0	1 5 0	0 12 8		224 15 11	4 17 6	219 18 5	21 6 4	241 4 9
North Sydney	3,583	4,441 3 9	579 18 11	11 1 4	36 17 2	73 5 0	103 0 0	69 5 0	123 13 1	5,443 4 3	67 8 8	5,375 15 7	606 12 10	5,981 8 5
Paddington	4,090	4,530 19 2	576 11 0		31 11 1	110 5 0	43 15 0	5 10 0	99 8 1	5,397 10 4	18 1 6	5,379 8 10	416 17 2	5,796 6 0
Parramatta	17	6 13 9		5 19 3						12 13 0		12 13 0		12 13 0
Petersham	2,301	2,842 5 11	85 1 9	3 8 8	31 1 2	58 2 6	90 5 0	6 5 0	135 11 2	3,232 1 2	20 13 10	3,211 7 4	133 13 5	3,415 0 9
Prospect and Sherwood	68	43 8 9	3 1 9	11 1 11	0 1 3	2 5 0		1 1 0		65 19 8	1 17 7	64 2 1	4 15 5	68 17 6
Randwick	3,292	2,051 0 9	178 15 0	2 11 2	97 6 2	29 2 5	75 0 0	2 10 0	97 11 6	2,533 17 1	14 16 5	2,519 0 8	254 0 0	2,773 0 8
Redfern	4,825	4,574 2 9	5,201 9 6		17 13 7	123 17 6	11 10 0	15 5 0	38 6 10	9,956 16 2	63 16 6	9,922 10 8	637 6 7	10,160 6 3
Rockdale	1,162	859 5 10	129 12 6	13 0 4	16 2 0	26 7 6	32 2 6	1 7 6	46 13 6	1,145 17 5	34 7 9	1,111 9 8	175 18 7	1,287 8 5
Rockwood	186	221 16 7	165 18 9	3 3 0	0 12 1	1 2 6	0 15 0	2 0 0		302 8 2	1 5 9	301 2 5	103 13 1	404 15 6
Ryde	360	235 11 11	212 2 4	2 1 2	3 3 1	19 2 6	1 10 0		2 13 4	523 4 4	3 1 0	520 3 4	63 13 5	586 16 9
St. Peters	1,069	717 12 1	40 15 9	1 14 5	3 13 3	59 10 0	3 0 0	2 2 6	25 9 6	833 17 6	8 8 1	825 9 5	66 4 2	921 13 7
Strathfield	448	1,490 7 0	172 1 6	1 10 3	26 8 10	7 10 0	40 15 0		110 18 7	990 7 10	6 13 6	983 9 4	34 8 8	1,017 17 7
Waterloo	2,923	2,696 6 7	172 1 6		5 6 5	50 17 6	7 0 0	4 2 6	22 1 8	2,037 18 4	11 7 0	2,026 10 10	268 0 0	2,294 10 10
Waverley	2,118	417 9 9	77 11 8		30 16 8	57 7 6	85 5 0	2 10 0	95 10 8	3,030 17 11	33 4 2	3,006 13 9	227 18 11	3,234 12 8
Willoughby	527	2,596 6 7	172 1 6		18 14 6	15 17 6	0 15 0		16 12 3	607 17 0	9 16 9	598 0 3	108 8 2	706 8 5
Woolahra	2,312	3,581 6 11	342 18 5	0 11 3	65 6 6	73 12 6	145 0 0		105 4 8	4,319 7 9	43 7 11	4,275 19 10	397 10 0	4,673 9 10
Sundry Plumbers and others										3,396 13 11	27 12 3	3,369 1 8	3,155 13 7	6,524 15 3
Total	55,697	£118,728 1 5	£20,029 5 11	£227 7 3	£1,348 9 1	£2,817 17 6	£1,164 12 6	£487 12 2	£2,263 12 6	£158,963 12 3	£1,537 0 7	£157,420 11 8	£22,288 18 4	£179,715 10 0

HERBERT J. BEAUMONT,
Assessor.

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Ward or Borough.	Summary of Sewerage Rates.										General Summary of Rates, Fees, &c. for Water and Sewerage.					
	No. of Properties liable.	Sewerage Rates.	New sewers.	Sewerage service.	Revenue for 1893.	Less rates cancelled or removed.	Net Revenue for 1893.	Arrears from Previous Years	Total sewerage rates receivable to 31st Dec., 1893.	Gross Total water and sewerage rates receivable to 31st Dec., 1893.	No. of Summonses issued.	Amount sued for during 1893.	Amount paid without Summonses.	Total paid during 1893.	Arrears to 31st December, 1893.	
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	
Bourke Ward	1,199	14,478 8 11		395 9 8	14,733 18 7	194 17 10	14,539 0 9	2,007 14 4	16,596 15 1	32,713 0 2	72	1,232 16 4	29,870 1 0	30,902 17 4	1,810 2 10	
Brisbane Ward	1,250	9,225 13 11		73 9 9	9,299 3 8	135 11 9	9,163 11 11	766 13 10	9,930 5 9	19,991 14 0	124	1,980 17 4	16,087 0 10	17,148 7 2	2,843 6 10	
Cook Ward	6,955	8,856 19 1		42 15 19	8,899 14 11	22 15 3	8,876 19 8	545 7 9	9,422 7 5	18,073 14 9	963	1,900 4 5	16,465 9 6	17,455 13 11	2,518 0 10	
Denison Ward	3,000	7,319 0 7	7 9 1	114 18 7	7,941 3 3	157 10 2	7,783 18 1	993 16 1	8,747 14 2	22,905 18 8	181	714 10 10	19,505 18 4	20,220 15 2	2,655 3 6	
Fitzroy Ward	3,420	7,315 2 6	12 13 6	30 10 6	7,358 6 6	19 6 8	7,338 19 10	611 5 10	7,950 5 8	16,475 13 2	218	706 9 7	13,897 19 1	14,608 19 8	2,071 13 6	
Gipps Ward	1,752	4,867 0 0		31 13 4	4,898 18 6	31 10 3	4,867 3 5	367 1 0	4,784 4 5	11,834 6 8	99	607 13 4	10,128 12 10	10,826 6 2	1,007 0 6	
Macquarie Ward	2,090	10,868 2 8		200 6 0	11,068 9 2	94 9 3	10,973 19 11	1,214 15 2	12,188 15 1	22,606 5 6	137	1,306 1 5	19,151 9 11	20,458 1 4	2,148 4 2	
Phillip Ward	2,408	5,453 12 6	0 7 6	45 17 5	5,499 17 5	13 7 7	5,486 9 10	938 7 0	6,424 17 7	13,216 8 8	152	476 1 8	10,817 14 11	11,293 16 7	1,922 12 1	
Alexandra	1,230	932 9 4	15 0 2	7 7 5	934 16 11	9 17 0	944 10 11	23 14 1	968 14 0	2,729 13 11	110	112 3 8	2,501 6 6	2,613 9 1	126 4 10	
Ashfield										3,989 18 9	133	183 0 0	3,540 1 11	3,723 1 11	357 11 10	
Auburn										196 9 0	24	18 0 0	168 3 11	179 13 1	16 16 8	
Balmain										6,750 2 7	345	332 11 3	5,758 19 5	6,091 10 8	607 11 11	
Bankstown										5 13 8			4 19 9	4 19 9	0 13 11	
Botany										370 12 11	21	48 16 2	224 16 1	333 12 3	46 0 8	
Burwood										2,392 1 6	70	91 12 6	2,128 13 10	2,220 6 4	141 15 1	
Campbelltown										479 11 1			328 2 5	328 2 5	161 8 8	
Campersdown	799	423 11 0	258 18 3	5 4 0	1,087 18 9	29 5 1	1,067 8 8	1,150 8 7	2,217 12 3	4,074 17 10	99	93 15 4	3,356 12 4	3,450 7 8	624 10 2	
Centerbury										250 2 4	9	12 18 9	213 0 2	225 18 11	33 3 5	
Cecil Hill																
Concord										537 19 6	26	21 10 5	510 11 4	532 1 9	55 17 9	
Darlington	784	854 2 9		2 3 4	856 6 1	1 6 3	854 19 10	37 5 4	892 5 2	1,809 11 8	86	70 12 6	1,655 19 6	1,726 11 6	83 0 2	
Drumoyne										459 8 1	35	45 1 7	385 10 6	431 1 1	28 7 6	
Enfield										398 3 11	12	7 16 6	306 15 10	374 11 19	23 12 1	
Enskmeville	434	355 16 8	1 7 6	7 4 8	354 8 10	4 17 4	359 11 6	3 10 10	368 2 4	1,403 11 11	46	79 18 2	1,202 15 5	1,272 13 7	99 18 4	
Five Dock										290 3 1	14	16 13 9	211 5 2	227 18 11	32 4 2	
Glebe	84	129 6 4	33 12 5	1 2 1	164 0 10	1 15 0	162 5 10	11 6 10	173 12 8	5,380 18 9	80	168 3 0	4,911 18 11	5,080 1 11	300 16 10	
Granville										1,334 10 5	50	43 18 8	1,186 6 9	1,259 5 6	154 5 0	
Goldford										38 12 0			21 12 8	21 12 8	16 19 4	
Hoadbush										227 10 2	2	5 14 0	199 14 7	199 8 7	28 1 7	
Hoxton Park										1 0 0			1 0 0	1 0 0		
Hunter's Hill										1,424 18 6	31	45 11 10	1,210 5 10	1,255 17 8	169 0 10	
Hurstville										664 0 0	26	19 15 8	591 11 2	611 6 10	52 13 2	
Islands										622 17 8			462 5 6	462 5 6	160 12 8	
Kozarah										435 0 9	27	22 15 3	364 10 10	387 6 1	47 14 8	
Lolchhardt										4,188 10 11	232	226 7 7	3,099 13 5	3,026 1 0	289 9 11	
Liverpool										1,816 4 9	9	16 7 9	820 11 9	836 19 6	479 5 3	
Marrickville										3,945 7 9	233	230 3 10	3,448 13 4	3,678 17 2	271 10 7	
Mosman										256 10 1	14	22 11 9	46 8 7	69 0 4	127 9 0	
Newtown	2,320	1,955 0 0	512 11 2	13 11 1	2,781 2 3	35 13 6	2,745 8 9	23 18 10	2,769 7 7	7,774 13 2	214	317 7 9	7,068 12 10	7,386 0 7	388 12 7	
North Botany	3	0 2 8			6 2 8	3 0 0	3 2 8	23 3 6	29 6 2	267 10 11	18	24 10 4	195 17 2	220 16 6	46 14 5	
North Sydney										5,981 8 5	224	310 10 3	5,194 6 7	5,443 6 10	436 2 7	
Paddington	3,905	4,918 8 10	224 1 4	39 11 3	5,173 1 5	14 12 4	5,158 9 1	319 8 0	5,477 17 1	11,274 3 1	229	445 16 3	10,209 5 6	10,653 1 9	621 1 4	
Parramatta										12 13 0	1	0 11 0	0 11 0	0 11 0	12 13 0	
Petersham	110	107 8 4	97 4 5	0 19 3	205 12 0	0 7 8	205 4 4		205 4 4	3,629 5 1	130	156 8 5	3,047 8 11	3,047 8 11	272 10 2	
Prospect & Sherwood										68 17 6	3	6 19 6	55 9 9	62 9 3	6 8 3	
Randwick	743	808 6 0	122 13 5	5 7 1	936 6 0	6 1 8	930 4 10	7 10 6	937 15 4	8,770 16 0	120	246 10 10	2,073 2 0	8,220 1 10	499 14 2	
Redfern	4,098	5,623 10 0	67 4 1	23 10 2	5,714 4 3	18 9 11	5,695 14 4	377 12 6	6,072 6 9	16,634 13 0	210	457 19 7	14,539 13 6	15,081 13 1	1,552 19 11	
Rockdale										1,287 8 3	25	47 7 1	1,024 15 5	1,072 2 6	915 5 9	
Rookwood										499 15 6	13	8 12 3	291 4 6	299 16 3	199 18 10	
Ryde										586 16 9	31	44 10 6	480 15 5	531 11 11	55 4 10	
St. Peters										921 18 7	49	32 17 9	854 3 8	857 1 5	34 12 2	
Strathfield										1,017 17 7	31	53 15 6	900 8 0	954 4 0	63 18 7	
Waterloo	1,825	1,492 8 7	67 6 5	6 5 3	1,565 14 2	3 16 8	1,561 17 7	41 7 0	1,603 4 7	3,897 15 5	113	114 3 0	3,502 17 9	3,617 0 9	286 14 8	
Waverley	506	828 14 2	3 6 6	4 2 4	836 3 0	8 15 10	827 7 2	56 7 10	883 15 0	4,118 7 8	146	191 10 1	3,024 13 2	3,816 8 3	301 10 5	
Willoughby										766 8 5	70	66 3 11	605 11 1	571 15 0	134 13 5	
Woolahra	1,739	2,173 8 5	142 0 0	24 13 6	2,340 1 11	13 0 5	2,327 1 6	71 16 10	2,398 18 4	7,072 8 2	126	354 0 11	6,391 9 9	6,655 10 10	416 17 4	
Sundry Plumbers, Drainers, and others, &c.					2,269 8 5	2 5 0	2,267 3 5	3,569 9 2	5,827 12 7	12,352 7 10	18	379 16 10	8,042 16 1	8,422 12 11	3,929 14 11	
Less Repayments to Loans and Votes for sale of Stores, &c.														250,758 11 6		
Totals	39,655	59,392 13 9	1,865 9 9	377 3 2	94,504 16 1	843 12 3	93,661 2 10	13,157 16 6	106,818 19 4	286,634 9 4	4,875	12,445 10 3	244,813 1 8	254,025 8 1	29,775 17 10	

ASSESSOR'S REPORT—continued.

SUMMARY OF ARREARS on 31st December, 1893.

Ward or Borough.	House Properties.		Vacant Land.		Churches & Charities.		Government.		Municipal.		Meters.	Total.		Increase on Previous Years.		Decrease on Previous Years.		
	Water.	Sewerage.	Water.	Sewerage.	Water.	Sewerage.	Water.	Sewerage.	Water.	Sewerage.	Water.	Water.	Sewerage.	Water.	Sewerage.	Water.	Sewerage.	
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	
Bourke Ward	404 19 6	588 18 9	137 11 6	199 13 0	11 6 0	13 2 6	201 7 7	282 13 7	2 12 6	3 1 3	075 3 8	1782 10 9	1087 9 1	.....	.....	624 16 9	920 5 3
Brisbane Ward	302 0 7	337 6 10	233 15 1	320 3 11	35 2 0	48 4 2	38 11 6	2 17 9	15 18 9	.....	488 5 9	1113 13 8	678 11 8	.....	.....	8 3 4	88 2 2
Cook Ward	233 3 0	317 3 5	36 5 10	63 10 5	152 18 9	156 2 3	.....	.....	.....	.....	251 14 11	674 3 3	586 16 1	.....	.....	50 4 4	3 11 8
Denison Ward	260 0 2	359 8 7	84 2 1	108 1 4	94 11 3	131 11 0	4 12 6	292 5 5	.....	.....	1417 7 2	1860 13 2	796 6 4	.....	.....	223 17 5	197 9 9
Fitzroy Ward	334 6 9	421 15 10	34 3 1	27 14 10	91 13 9	78 18 0	651 18 0	236 5 0	.....	.....	181 9 3	1293 11 4	764 13 8	280 16 1	153 7 10	.....	.....
Gipps Ward	79 7 6	108 13 7	98 17 1	162 14 10	53 18 7	51 5 10	6 7 6	7 17 7	.....	.....	436 10 0	675 0 8	328 11 10	.....	.....	142 1 11	38 9 2
Macquarie Ward	575 10 10	748 1 8	92 7 9	122 8 9	227 12 11	213 5 6	.....	.....	.....	.....	171 18 10	1067 12 2	1083 15 0	.....	.....	34 16 10	130 19 8
Phillip Ward	141 13 9	212 18 3	33 13 5	41 5 10	141 1 0	228 17 4	5 2 0	230 6 4	.....	.....	759 19 3	1101 9 5	817 8 2	.....	.....	260 10 6	120 13 7
Alexandria	50 13 11	22 19 1	11 11 6	0 19 4	7 15 0	0 16 2	.....	.....	.....	.....	27 12 10	96 18 3	24 13 7	.....	.....	.....	.....
Ashfield	109 6 9	.....	10 5 1	.....	94 10 8	.....	1 16 0	.....	0 18 0	.....	35 18 10	252 15 10	.....	.....	.....	59 16 4	.....
Auburn	71 5 8	.....	0 5 0	.....	2 17 8	.....	.....	.....	.....	.....	1 18 4	10 16 8	.....	.....	.....	15 11 7	.....
Balmain	84 13 5	.....	12 0 10	.....	105 18 6	.....	1 12 6	.....	.....	.....	467 0 2	661 5 5	.....	.....	0 6 11	33 10 5	.....
Bankstown	0 13 11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0 13 11	.....	.....	.....	.....	.....
Botany	1 15 9	.....	3 10 10	.....	7 6 5	.....	.....	.....	.....	.....	.....	32 18 8	46 0 8	.....	.....	4 2 3	.....
Burwood	77 13 8	.....	5 2 8	.....	37 6 6	.....	3 5 6	.....	1 15 0	.....	.....	14 5 8	139 8 7	.....	.....	19 4 3	.....
Campbelltown	107 13 10	.....	0 19 9	.....	21 8 7	.....	2 0 0	.....	6 1 3	.....	.....	12 10 0	149 3 8	71 7 2	.....	260 10 8	649 4 6
Canterbury	51 16 1	15 18 10	8 3 0	3 11 11	20 6 6	482 8 4	.....	.....	.....	.....	.....	38 6 0	118 11 7	501 19 1	.....	7 12 3	.....
Cecil Hill	4 4 2	.....	0 16 8	.....	18 13 7	.....	5 9 0	.....	.....	.....	.....	3 14 6	38 3 5	.....	.....	.....	.....
Concord	10 10 8	.....	16 15 5	.....	10 11 3	.....	.....	.....	.....	.....	.....	17 15 10	55 12 9	.....	.....	7 2 7	.....
Darlington	11 5 0	15 18 2	0 5 0	0 6 8	4 2 0	18 17 1	.....	.....	.....	.....	.....	30 19 6	40 12 3	36 1 11	.....	2 15 10	2 3 5
Drummoyne	16 19 0	.....	1 11 0	.....	3 2 6	.....	.....	.....	.....	.....	.....	6 12 0	28 4 6	.....	1 16 7	.....	.....
Enfield	4 15 5	.....	.....	.....	6 17 8	.....	.....	.....	.....	.....	.....	11 4 0	22 17 1	.....	.....	4 15 2	.....
Erskineville	37 6 10	11 8 3	3 10 4	1 7 0	7 8 6	.....	3 7 8	.....	.....	.....	.....	25 4 8	73 9 11	16 13 5	0 18 11	7 12 7	.....
Five Dock	23 11 6	.....	1 14 9	.....	1 19 5	.....	.....	.....	.....	.....	.....	14 3 6	31 9 2	.....	8 11 0	.....	.....
Glebe	73 6 5	1 11 6	8 10 10	1 19 1	90 16 1	.....	0 8 9	.....	.....	.....	.....	116 15 0	287 10 3	3 10 7	.....	41 15 1	7 16 3
Granville	43 6 10	.....	6 15 1	.....	17 15 1	.....	1 3 6	.....	.....	.....	.....	84 7 6	153 3 0	.....	.....	45 6 5	.....
Guildford	.....	.....	16 13 4	.....	.....	.....	.....	.....	.....	.....	.....	0 6 0	16 19 4	.....	2 9 0	.....	.....
Homebush	0 1 7	.....	1 17 6	.....	.....	.....	.....	.....	.....	.....	.....	16 17 6	27 16 7	.....	8 0 8	.....	.....
Hoxton Park	19 7 3	.....	7 4 2	.....	15 7 6	.....	1 4 11	.....	.....	.....	.....	123 12 0	166 15 10	.....	.....	160 18 2	.....
Hunter's Hill	16 2 2	.....	10 2 7	.....	4 5 5	.....	.....	.....	.....	.....	.....	21 8 0	51 18 2	.....	.....	2 11 5	.....
Hurstville	.....	.....	.....	.....	.....	.....	40 15 0	.....	.....	.....	.....	119 17 8	100 12 8	.....	.....	120 8 6	.....
Islands
Kogarah	13 18 6	11 7 4	16 7 7
Leichhardt	101 8 8	.....	9 9 7	.....	79 10 5	.....	0 12 6	.....	0 8 9	.....	.....	63 4 0	255 8 11	.....	.....	87 10 0	.....
Liverpool	157 13 5	.....	5 9 2	.....	18 7 0	.....	246 3 2	.....	3 12 6	.....	.....	44 15 0	476 0 3	.....	117 10 9	.....	.....
Marrickville	104 7 10	.....	22 16 7	.....	84 13 2	.....	11 11 8	.....	.....	.....	.....	38 17 4	292 11 7	.....	.....	111 4 5	.....
Mosman	12 13 3	.....	23 10 2	.....	0 8 5	.....	194 2 11	.....	0 15 0	.....	.....	69 17 2	235 15 0	.....	187 9 9	.....	.....
Newtown	100 14 3	64 0 11	12 2 5	2 11 11	109 13 3	13 15 7	6 4 11	6 16 2	.....	.....	.....	6 15 0	28 5 0	.....	7 2 2	63 5 9	.....
North Botany	17 15 2	18 3 0	3 7 6	0 5 8	.....	.....	.....	.....	.....	.....	.....	169 8 11	476 2 1	.....	.....	123 13 3	4 14 10
North Sydney	149 4 6	.....	65 17 1	.....	60 2 8	.....	41 8 11	.....	.....	.....	.....	149 17 6	352 2 3	361 10 7	.....	4 9 11	67 17 5
Paddington	121 18 4	161 0 7	12 14 5	19 7 2	63 12 6	49 2 11	2 14 6	0 10 9	1 5 0	1 9 2	.....	.....	12 13 0	.....	12 13 0	.....	.....
Parramatta	9 4 8	3 8 9
Petersham	94 17 4	3 15 5	7 15 1	.....	115 19 8	.....	12 18 6	1 9 8	7 8 9	.....	.....	19 19 8	258 18 7	5 5 1	77 0 2	5 5 1	.....
Prospect and Sherwood	5 7 3	5 7 3	0 11 10
Randwick	169 3 6	45 18 6	64 7 9	31 15 4	34 6 3	3 5 0	92 6 0	.....	1 5 10	.....	.....	41 6 0	402 15 4	82 18 10	150 5 4	75 8 4	.....
Redfern	382 3 10	171 16 0	60 19 7	72 0 9	60 14 0	49 14 8	4 7 3	190 10 0	.....	.....	.....	809 9 4	1066 8 0	484 1 5	429 11 5	100 0 0	.....
Rockdale	57 12 7	.....	4 17 4	.....	7 9 3	.....	.....	.....	.....	.....	.....	142 11 7	212 10 9	.....	.....	30 12 6	.....
Rookwood	6 19 10	.....	.....	.....	104 14 2	.....	.....	.....	.....	.....	.....	88 4 10	199 18 10	.....	.....	91 5 9	.....
Sydney	15 13 8	.....	.....	.....	8 0 10	.....	.....	.....	.....	.....	.....	20 5 9	54 5 10	.....	.....	9 7 7	.....
St. Peters	20 7 4	.....	0 18 4	.....	0 19 6	.....	.....	.....	.....	.....	.....	3 3 0	33 19 2	.....	.....	32 5 0	.....
Strathfield	21 4 2	.....	5 15 5	.....	9 10 8	.....	.....	.....	.....	.....	.....	.....	.....	.....	20 2 10	.....	.....
Waterloo	47 17 0	.....	1 7 3	.....	48 11 0	27 8 2	.....	.....	0 3 4	.....	.....	119 9 0	217 4 8	62 4 6	12 17 5	33 3 0	.....
Waverley	134 14 0	32 7 4	13 6 4	1 11 11	52 18 6	17 6 10	.....	.....	4 10 0	0 17 6	.....	26 4 0	231 12 10	52 3 7	.....	13 8 10	4 4 3
Willoughby	31 17 8	.....	66 10 10	.....	5 14 7	.....	.....	.....	.....	.....	.....	20 14 6	134 3 5	.....	20 15 3	.....	.....
Woollahra	80 17 1	51 3 6	9 0 6	4 2 6	102 14 0	50 10 0	5 7 0	.....	.....	.....	.....	83 4 10	301 3 4	105 16 0	.....	33 19 2	91 15 8
Totals	4722 3 3	8741 19 11	1274 12 8	1181 12 9	2201 12 0	1636 10 4	1534 6 9	1269 3 3	47 4 6	5 7 11	7858 9 5	17726 9 3	7834 14 2	1561 14 9	459 4 8	2885 10 9	2230 17 11	

HERBERT J. BEAUMONT,
Assessor.

ASSESSOR'S REPORT—continued.

WASTE WATER INSPECTORS' REPORT FOR 1893.

Ward or Borough.	Inspections.	Special Inspections.	Re-inspections where Notices have been served.	Total No. of Inspections and Re-inspections.	Notices served to pay Special Fees or Fix Meters.								Total Notices Served.	Taps Repaired.	No. of Informations.	Amount of Fines.	
					Stock.	Cartens.	Bakeries.	Engines.	Laundries.	Photography.	12 bedrooms and over.	Sundries.					Breach of By-laws.
Bourke Ward	327	100	28	455	7	1		1		5		8	19	41			£ s. d.
Brisbane Ward.....	1,371	168	85	1,624	36		1	11			1	3	50	102	1	2	0 5 0
Cook Ward	6,054	505	240	6,808	240						1	1	130	382		7	6 5 0
Denson Ward		415	40	455	118			2				5	1	126		6	
Fitzroy Ward	1,049	292	80	1,420	81			4	5			1	25	116	4	24	2 10 0
Gipps Ward	1,036	94	100	2,166	24			1	12		4	1	93	135		3	0 5 0
Macquarie Ward		221	33	254	43		2	2	1	3		3	22	76	2	2	
Phillip Ward		241	31	272	53				1			2	5	61		3	1 10 0
Alexandria	496	337	77	910	111			1	1			1	2	116	1	23	5 10 0
Ashfield	2,426	239	92	2,807	124	4		1	1	1		2	4	137	6	1	
Anburn	80	2	21	103	14									14			
Balmain	2,492	376	94	2,962	126		1			3		2	24	156	2	6	0 12 6
Bankstown																	
Botany		5	1	6	3								2	5			
Burwood		272	17	289	40								2	43	1	3	
Campbelltown																	
Camperdown	1,432	305	153	1,890	123		3					2	10	138	2	13	2 5 0
Canterbury		41	14	55	8									8			
Cecil Hill																	
Concord		45	11	56	12									12			
Darlington.....		90	21	111	22								2	21		1	1 0 0
Drumoyne	370	48	25	443	32								2	34			
Enfield		43	15	58	12							1		13		1	
Erskineville	1,203	157	90	1,450	58		1					2	3	61		10	2 0 0
Five Dock	146	0	23	169	23							1	1	25			
Glebe	1,718	427	122	2,267	111	1	1					4	13	130	4	8	1 0 0
Granville	770	48	64	882	49	1						1		51	5		
Guildford		1		1													
Homebush.....		11	2	13	1									1			
Hoxton Park																	
Hunter's Hill		32	10	42	11				2			1		14		1	1 0 0
Hurstville		44	17	61	14		1							16			
Islands																	
Kogarah		37	23	60	19								1	20		1	
Leichhardt	1,316	560	108	1,984	167		2		1			5	8	183	2	5	2 10 0
Liverpool																	
Marrickville		605	241	846	138	1	2		1			1		143	1	31	3 0 0
Mosman																	
Newtown	2,500	718	206	3,424	201	1		1		1		12	4	220	2	32	1 15 0
North Botany		13		13	4									4			
North Sydney	29	494	34	567	86	1			3	1		1	2	91	22	12	1 5 0
Paddington	504	420	100	1,024	100	1	1		2			2	16	122	11	22	3 10 0
Parramatta																	
Petersham	183	350	34	547	60		1						3	54	3	2	
Prospect and Sherwood.....	75		19	94	9									9			
Randwick		106	17	123	21							1		22		9	2 12 6
Redfern	357	445	103	805	161		1	1				4	7	174	2	15	5 0 0
Rockdale	195	96	45	336	40		1						3	44	1		
Rookwood	162	6	22	190	12									12			
Ryde		35	16	51	16									16		1	0 15 0
St. Peters	1,064	91	80	1,241	75									75	9	2	
Strathfield	406	44	21	471	17									17	1		
Waterloo		247	62	309	76							2	3	81		4	1 10 0
Waverley		233	53	336	61								3	64	4	11	2 5 0
Willoughby	420	28	47	495	81									81			
Woollahra	2,304	279	144	2,728	104	8	1					2	32	147	1	10	0 15 0
Total	31,330	9,458	2,985	43,773	2,934	19	19	25	30	15	7	71	501	8,621	87	278	40 0 0

HERBERT J. BEAUMONT, Assessor.

Annual Report of Stores Branch.

Sir,

Central Store Yard, Crown-street, 23 January, 1894.

I have the honor to submit the following particulars of the work done in this branch during the past year.

Annual Contracts.

These were satisfied as under :—

Article.	Contractor.	Rate.	Value.
			£ s. d.
Building material	Wales and Dawson	1 per cent. under schedule ...	200 12 4
Cartage	W. Codnor	21 " " " "	333 17 0
Coal	B. Byrnes	Quoted prices	1,825 2 7
Iron castings	G. and C. Hoskins	{ £10 5s. } per ton	302 10 6
Iron pipes	Pope, Maher, & Co.	£7 10s. "	3,464 6 10
Lead	Gibson, Battle, & Co.	£11 15s. "	199 11 6
Stores, general	Briscoe, Drysdale, & Co ..	20½ per cent. under schedule..	1,040 10 0
Timber	T. Allen (cancelled in July) ..	12 " " " "	96 9 2
Do	Ritchie Brothers (from August) ..	18 " " " "	73 15 7
Uniforms	W. Henderson & Co.	Quoted prices	162 8 8

Tenders were invited for cement but the lowest offer, 11s. 1½d. per cask, was not approved by the Minister: our wants were therefore purchased in the open market at a saving of £25 8s. 8d. on that offer.

Stock-taking.

This was conducted as usual by the Examiner of Accounts in September, and showed the actual stock in hand to be worth £39,000 or £104 in excess of the value standing in the books to the debit of this branch.

Colonial Manufactures.

Importation of iron-pipes, special castings, and valves has ceased. Local foundries now supply all the wants of the Board as they arise. Such supplies for the past year amounted in value to £3,766 17s. 4d.

Freight.

£333 17s. was paid for cartage and £107 3s. 3d. for trainage of goods on issue from the various store yards to works.

Issues.

During the year 3,603 orders for goods were honored—each order had an average of 3½ items, giving a total of 12,610 issue transactions on stock.

Sale of Condemned Stores.

Formerly this was effected by auction, but during 1893 tenders were invited by advertisement, and the following sales resulted :—

	£	s.	d.
Cast iron, at 42s. 6d., 55s., and 57s. 6d., per cwt...	49	5	0
Wrought iron	1	2	6
Scrap brass, at 3½d. per lb...	24	10	0
„ gunmetal, at 4½d. per lb.	30	4	6
„ India-rubber, at 1d. per lb.	2	5	0
Total	107	7	0

Tenders to purchase further quantities of brass and gunmetal were rejected as offering insufficient value, and for like reason there are now 200 tons of scrap iron awaiting sale.

Old pipes, &c., taken out of ground.

The work of overhauling old material taken out of the ground on replacement by new and fettling and recoating those selected as suitable for reissue, was formerly done by men under the Inspector of pipe-laying; those men were discharged in June, and the work since done by store labourers in slack moments of routine duties; 23 tons were thus treated to the saving of about £23 had special labour been employed on the work.

Manufacture by Board's Operatives.

Such urgent works as rough carpentering and smithy jobs that cannot be scheduled nor delayed by the formalities of contract labour must necessarily be done by mechanics in the Board's employ, to whom raw material valued at £236 7s. 3d. was issued, and goods made therefrom to the value of £523 16s., the increased cost representing the amount of wages spent on the work.

Statement

COMPTROLLER OF STORES REPORT—*continued.*

Statement of Receipts and Issues.

The total value of goods received during the year was £13,969 5s. 11d., and the issues from stock amounted to £13,461 0s. 1d. as set forth in detail on the annexed tables. This is exclusive of goods delivered for obvious economy direct to works in progress and accounted for separately by the Board engineer.

ABSTRACT.

Description.	Balance on hand 31st December, 1892.	Receipts.	Issues.	Balance on hand 31st December, 1893.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
A. Water pipes	24,472 18 9	6,124 16 3	5,663 9 4	25,244 13 1
B. Stop valves	3,267 3 6	262 1 6	560 4 9	2,844 0 6
C. Special castings	10,554 16 10	995 16 2	1,495 2 7	9,997 17 3
D. General stores.....	1,903 11 3	6,586 12 0	5,742 3 5	2,747 5 3
Total.....	40,198 10 5	13,969 5 11	13,461 0 1	40,833 16 1

The difference of £126 19s. 11d. between the sum of receipts and 1892 balance, and the sum of issues and 1893 balance, is due to variations in prices of goods received, the goods issued in the year being priced out at a uniform rate.

SUMMARY A.—WATER PIPES.

Description.	Balance last Report, 31/12/92.		Received.		Issued.		Balance on hand, 31/12/93.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
3-inch, cast iron	No. 159	£ s. d. 56 4 9	No. 121	£ s. d. 38 16 1	No. 74	£ s. d. 25 12 2	No. 206	£ s. d. 69 8 8
4 " "	1,004	428 11 5	9,647	4,889 18 8	6,753	3,520 7 4	3,898	2,142 3 2
5 " "	11	5 17 4					11	5 17 4
6 " "	12,868	9,910 16 9	423	293 8 9	2,102	1,621 14 0	11,189	8,582 11 6
8 " "	2,316	2,618 13 6			9	18 2 8	2,307	2,608 7 0
9 " "	760	1,293 13 6	226	345 16 0	63	106 4 8	923	1,530 4 10
10 " "	860	1,357 4 9			40	68 5 3	820	1,288 19 6
12 " "	858	2,314 19 0	238	478 1 9	85	171 14 2	1,011	2,576 17 8
15 " "	558	2,098 3 7	11	39 9 2	23	83 6 1	546	2,051 6 8
18 " "	103	540 19 0	3	14 5 0	3	15 10 6	108	539 13 6
20 " "	167	893 12 4	5	25 0 10	2	10 18 6	170	907 14 8
24 " "	80	674 6 3			2	15 14 0	78	658 12 3
24½ " wrought iron	Feet. 515	486 12 8					Feet. 515	486 12 8
30 " cast iron	144	130 13 0					144	130 13 0
36 " "	974	1,624 3 4					974	1,624 3 4
42 " "	22	41 7 4					22	41 7 4
Total on charge by Number.....	19,749	22,190 2 5	10,674	6,124 16 3	9,156	5,663 9 4	21,267	22,961 16 9
Total on charge by Footage.....	1,655	2,232 16 4					1,655	2,232 16 4
Total values		24,472 18 9		6,124 16 3		5,663 9 4		25,244 13 1

SUMMARY B.—STOP VALVES.

Description.	Balance last report, 31/12/92.		Received.		Issued.		Balance on hand, 31/12/93.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
3-inch	5	£ s. d. 7 2 6	17	£ s. d. 24 4 6	16	£ s. d. 22 16 0	6	£ s. d. 8 11 0
4 "	130	274 12 6	59	116 10 9	92	186 14 0	97	190 7 3
6 "	144	513 0 0	20	56 0 0	34	95 4 0	130	365 3 6
8 "	21	92 2 9	1	4 7 9	3	13 3 3	19	83 7 3
9 "	79	397 19 3	11	52 9 3	24	118 17 9	66	339 8 9
10 "	14	89 19 0			1	6 8 6	13	83 10 6
12 "	84	287 14 6	1	8 9 3	9	76 3 3	26	217 11 3
15 "	17	249 18 0			2	23 8 0	15	213 16 0
18 "	11	214 18 3					11	214 18 3
20 "	7	161 7 0					7	161 7 0
24 "	2	63 15 6					2	63 15 6
30 "	4	280 1 10					4	280 1 10
36 "	4	350 2 2					4	350 2 2
42 "	1	145 0 0					1	145 0 0
24½ "	1	31 17 9					1	31 17 9
Air valves	25	91 5 0			8	12 10 0	22	78 15 0
Relief valves	3	16 7 6					3	16 7 6
Totals	502	3,267 3 6	109	262 1 6	184	560 4 9	427	2,844 0 6

COMPTROLLER OF STORES REPORT—continued.

SUMMARY C.—SPECIAL CASTINGS.

Description.	Balance Last Report, 31/12/92.		Received.		Issued.		Balance on hand, 31/12/93.	
	Quantity	Value.	Quantity.	Value.	Quantity.	Value.	Quantity	Value.
	No.	£ s. d.	No.	£ s. d.	No.	£ s. d.	No.	£ s. d.
Bends	964	1,936 1 8	149	84 7 7	287	216 2 9	826	1,858 10 7
Base Pieces for Surface Boxes	3,000	487 10 0	207	33 2 9	366	59 9 6	2,841	461 13 3
Caps, Spigot End	474	138 4 7	226	39 0 5	297	42 14 6	403	130 2 3
Collars	608	504 10 5	847	200 12 7	972	252 6 7	481	473 3 8
Cross Pipes	297	642 2 10	7	11 13 9	37	51 13 6	267	603 8 1
Hydrants, Ball	1,233	477 15 9	272	105 8 0	356	137 19 0	1,149	445 4 9
" Screw-down	468	702 0 0	5	7 10 0	10	15 0 0	463	694 10 0
Hydrant Tees.....	980	1,069 19 3	301	128 14 0	404	183 19 7	877	1,015 4 8
Taper Pipes	338	320 11 11	61	24 2 0	108	42 14 10	291	300 16 6
Risers, Hydrant Flanged	758	105 16 5	87	13 1 0	196	25 14 10	649	94 8 1
Surface Boxes	4,333	1,736 7 8	396	137 5 5	701	261 13 8	4,028	1,624 9 4
Tee Pipes	715	1,334 9 6	169	144 0 8	198	155 0 5	688	1,317 9 11
Miscellaneous	859	1,039 6 10	356	66 18 0	402	50 13 5	813	978 16 2
	15,025	10,554 16 10	3,083	995 16 2	4,332	1,495 2 7	13,776	9,997 17 3

SUMMARY D.—GENERAL STORES.

Description.	Balance last report, 31/12/92.		Received.		Issued.		Balance on hand, 31/12/93.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Ts. cwt. q. lb.	£ s. d.	Ts. cwt. q. lb.	£ s. d.	Ts. cwt. q. lb.	£ s. d.	Ts. cwt. q. lb.	£ s. d.
Bolts and Nuts	1 13 3 12½	39 10 2	1 1 3 0½	22 18 10	0 14 3 0	16 10 0	2 0 3 22	42 19 11
Coals for melting Lead .....	.....	.....	25 16 1 0	25 15 0	24 17 0 18	24 16 8	0 19 0 10	0 19 1
Coals for Pumping .....	.....	.....	2,690 1 1 0	1,690 19 11	2,690 1 1 0	1,660 10 11	.....	.....
Lead for jointing Pipes	11 11 3 11	156 11 0	21 7 0 8	290 15 10	33 0 3 3½	410 12 3	2 13 0 16½	34 3 3
Yarn	0 5 0 12½	10 12 1	0 15 1 3	27 4 7	0 17 2 5	31 8 4	0 2 3 10½	5 1 11
Bricks, common	No. 811	2 0 7	No. 9,330	18 12 2	No. 7,025	14 1 0	No. 3,125	6 5 0
Concrete Blocks for Hydrant Surface Boxes ..	Sets. 1,963½	465 17 6	Sets. 14½	3 12 6	Sets. 456	114 0 0	Sets. 1,422	355 10 0
Cement	Casks. 27½	12 16 7	Casks. 1,163½	623 17 2	Casks. 514½	234 7 10	Casks. 674½	355 15 5
Miscellaneous .....	.....	1,207 3 4	.....	3,912 16 0	.....	3,180 7 0	.....	1,946 10 8
Total .....	.....	1,903 11 3	.....	6,586 12 0	.....	5,742 3 5	.....	2,747 6 8

DIGEST OF ISSUES, showing apportionment over the various works of the Board.

Water Service.		Sewerage Service.	
Charged to Loans—	£ s. d.	Charged to Loans—	£ s. d.
New mains	6,216 4 6	New sewers	476 3 1
Working plant	225 14 9	Working plant.....	265 11 8
Furniture and Fixtures	22 13 2	Furniture and Fixtures	5 13 1
Manufacturing account.....	207 5 4	Charged to Revenue—	
Machinery	132 16 9	Repairs to sewers.....	319 11 8
Liverpool Water Supply	31 13 6	Botany sewage farm	84 18 10
Buildings	79 5 3	Working expenses	82 3 11
Sealed samples	28 10 10	Repairs to buildings	4 18 0
Repair of old pipes, &c., taken out of ground	41 5 3	Inlet house, Botany	14 13 7
Campbelltown Water Supply	19 6 10	Drainers and others	1 9 2
New office fittings	128 10 11		
Adjustment account	0 7 11		
Charged to Revenue—			
Repairs to mains	800 4 6		
Working expenses	236 4 10		
Plumbers and others.....	1,374 7 11		
Condemned stores	55 6 5		
Meter, &c., branch.....	184 8 3		
Repairs to main conduit	42 13 6		
Coals for pumping.....	1,660 19 11		
Pumping expenses.....	249 9 10		
Repairs to machinery	69 0 0		
Repairs to buildings	30 18 11		
Repairs to working plant	4 4 6		
Repairs to reservoirs	31 12 0		
Prospect maintenance	309 11 4		
Richmond Water Supply.....	29 0 2		
Total	£12,211 17 1	Total	£1,249 3 0

A. ELLICE FLINT,
Comptroller of Stores.

The Secretary.

Engineer's

Engineer's Report.

Engineer's Department, 3 February, 1894.

Sir,

I have the honor to report, for the information of the Board, on the working of the Engineer's Department, embracing the branches of water supply and sewerage, for the year 1893.

WATER SUPPLY BRANCH.

Canal and Prospect Reservoir.

The canals and tunnels from Pheasant's Nest to Prospect Reservoir are in very fair order. During the year various works, comprising painting inside and outside of aqueducts, repairs to cottages, erecting fences, renewals of flumes across canal, lining with concrete the shaft at Cataract tunnel, surface drainage, and other minor works have been carried out by the Board. Relief drains have been constructed on the outer slope of Prospect Reservoir dam by the Harbours and Rivers Department, this work then being under that control. The Dam now being transferred to control of the Board, the action of drains will be kept under observation, and, if necessary, the system will be extended. A new fence has been erected at what is known as the boiling down paddock, for agistment purposes.

Supply from Prospect Reservoir.

The supply from Prospect Reservoir for the year amounted to 4,574,782,838 gallons, averaging 12,533,632 gallons per day, or 32.12 gallons per head of population.

Works below Reservoir.

Sections of the canal in embankment have been repaired during the year, work consisted of cutting out cracks and refilling with cement mortar, relining with concrete, and making good puddle backing. The repairs effected are substantial in character, and have considerably improved the imperviousness of canal. The reduction in leakage has been estimated by the Superintendent at from 3,568,000 gallons to 300,000 gallons per week. It is intended to continue the attention to this canal length during current year when soakage will be further reduced. The balance of works to Pott's Hill are in good order and require no special comment, further than that in the near future the 6-ft. pipe line will have to be examined internally.

Pott's Hill Reservoir.

The reservoir, screening chambers, &c., are in good order, requiring no special attention during the year.

Trunk Mains.

The duplicate main from Pott's Hill to Crown-street Reservoir is now in operation. A connection located about midway between above places has been made between the two trunk mains, thereby securing a constant supply to Crown-street Reservoir under any conditions which might occur.

Quality of Water.

The monthly analysis of Government Analytical Chemist shows that the water retains its high character.

Pressure in Reticulation Mains.

With the exception of elevated zones at Waverley, Randwick, Balmain, and Hurstville, the pressure in the mains has been uniformly good, and their capacity found to be ample. Remedial works would have been carried out at the majority of the districts above referred to had not the action of the Board been hampered by the want of funds. Works have, however, been now put in hand, and when complete the Metropolitan water supply will be second to none.

The slackness of supply to the higher zones is at times aggravated by shutting off the water for the purpose of tapping mains for house services. Cases have been under the officers' observation where a whole block has been deprived of water until a new service has been connected. Circumstances like the foregoing lead to the consideration as to the advisability of introducing a system which will obviate the necessity of shutting off the water when tapping mains. The system of tapping mains under pressure is not only advisable for reasons of water supply, but on hygienic grounds also; and in such an important system as the Metropolitan supply any process by which the house service will not be interfered with, and all possibility of contamination be eliminated, should be adopted.

General Reticulation.

The mains throughout the system are in good order. During the year the operations of the Board in reticulation work were considerably restricted for want of funds on Loan Account. This naturally decreased the earnings of the branch towards maintenance of, and paying interest on cost of, main works.

About 16 miles of mains of various sizes were laid, and 26 miles cleaned. There was a marked diminution in the number of leaks during the year as compared with previous period, the number reported and attended to in 1893 being 1,000; the number reported in 1892 was 1,812. Details are shown in accompanying statement. The number of hydrants fixed were: screw-down, 8; ball, 343.

House Services.

The number of drillings for house service was 3,139, and 6,248 extensions from existing services, were carried out. The number of Plumbers' Permits issued was 10,795. Other services are shown in summary of work.

Meters.

ENGINEER'S REPORT—*continued.*

Meters.

The number of meters now fixed is 4,642. During the year 148 were disconnected, the net increase for year being 216.

The Board having decided that on and after 1st March next all water meters of sizes from $\frac{1}{2}$ -inch to $1\frac{1}{2}$ -inch diameter should be supplied by them to consumers, it became necessary to adopt a suitable type as a standard. The meter adopted by the Board was the Turbine meter designed by the Hydraulic Department of South Australia.

The meter is of gun-metal and brass, is simple of construction, its parts are all interchangeable and it is expected that its life will exceed any yet submitted to the Board.

Tenders for the supply and manufacture within the Colony of 925 meters of various sizes of above type were invited in July last. The tender of Messrs. Danks and Son (Limited) was accepted, the rates being satisfactory. The meters are to be delivered during current year, and, judging from the progress made, it is possible that the work will be completed within specified time. In order to provide extra room for repairs, &c., which will naturally develop under new system, the engine-room of old rotative engine will be converted into a workshop, and boiler-house will be devoted to work connected with same branch. The system to be adopted with regard to meters from $\frac{1}{2}$ -in. to $1\frac{1}{2}$ -in. diameter is that the Board will supply same at a yearly rental according to size of meter. The consumers' plumbers will be permitted to fix the meter in the first instance, but afterwards the fitting is under the sole control of the Board, the consumer being under no expense for repairs, except under certain conditions. The meter remains the property of the Board and cannot be disposed of by consumer. Meters of sizes above $1\frac{1}{2}$ -in. diameter can be provided by the consumer if of approved pattern.

The system of reading meters by classification has been, after a trial since 1891, found to be satisfactory. The saving effected by the system, which was introduced by the secretary, being equal to £320 per annum.

The revenue from meter supply, like all other sources dependent upon trade has been affected by the late depression, many manufactories being closed, or only working half-time.

Water Troughs.

Notices have been served during the year on all owners of water troughs which were found defective, to the effect that if same were not put in good order the free supply of water would be discontinued, and that a meter would have to be fixed and water charged for. This will have the effect of all unsuitable troughs being removed.

Meter-testing.

The number of meters tested and repaired during the year was 877—of this number 191 meters were received from country districts—these figures show a decrease as against last year of 372.

Water Fittings.

The number of water-supply fittings tested was 69,253, of the number 67,630 were tested and stamped, 1,103 were returned as defective, and 520 were condemned. The figures show an increase in fittings tested, and decrease in condemned fittings, as compared with previous year. Details of work done are shown in accompanying statement.

Free Supply of Water.

The quantity of water supplied gratis to charitable and other institutions during the year amounted to 39,805,000 gallons, being about the same quantity for previous year.

Fire Supply.

During the year 252 fires have occurred within the reticulated area. In nearly every case the reports of turncocks show that available supply was satisfactory.

Reservoirs, Tanks.

The whole of the reservoirs and tanks are in good order, no defects of any import having been reported. It is intended to repaint and repair the woodwork of the reservoirs during the current year.

Pumping Plant.

Main pumping station, Crown-street. The Worthington pumps Nos. 1 and 2 have been working regularly throughout the year, with exception of temporary stoppage to No. 1 engine for effecting repairs to one of the plungers; the work to Paddington being taken up by No. 2 engine. Periodical examinations have been made of both engines, and repairs and renewals incidental to wear and tear were effected. The main steam pipe joints as well as stop-valve chest in boilers became very bad and had to be repaired throughout. This was done without interfering with the pumping.

The Waverley, or No. 3 pumps, were erected by Mott's Dock and Engineering Company, and were officially started in the presence of the Hon. Minister for Public Works, on 25th September last, and have been regularly worked since 17th October last. The maintenance term expired on 26th January, and the pumps have been taken over from contractor. The plant was manufactured in the Colony, and the quality and general finish of the work is very creditable.

A brief description of the pumps will be of interest.

The contractors, who are also the designers, were required under contract to supply plant capable of raising 100,000 gallons of water per hour through a rising main, composed of 60 feet 15 inches new cast iron pipes, 10,000 feet of wrought-iron pipe, 24 inches diameter, and 5,800 feet of 18-in. cast-iron pipe, to a height of 219 feet; also a further duty of raising 40,000 gallons per hour to a height of 239 feet, to an elevated tank to be built adjacent to Waverley Reservoir.

The plant is of the horizontal compound condensing rotative direct acting type, and consists of a pair of engines placed side by side, each working a double action pump. The H.P. cylinders are 15 inches in diameter, and L.P., ditto, 30 inches in diameter. The stroke is 33 inches. The initial pressure of steam

ENGINEER'S REPORT—*continued.*

steam to 90 lb. per square inch, and on leaving H.P. cylinders and before entering L.P., ditto, it passes through heaters jacketted with steam at boiler pressure. The exhaust is conducted to the "Jet" condenser, which is common to both pumps. Each engine is fitted with vertical air and two feed pumps, driven by bell crank and connecting links from cross head. All cylinders are steam jacketted and provided with drain sacks. The two main pumps are double-acting, having plungers $12\frac{1}{2}$ inches diameter connected direct with piston rods. Large air vessels are also provided. The number of valves in each pump is 72; viz., 36 suction and 36 delivery. The fly-wheel is 12 feet in diameter and weighs seven tons. The pumps are run at 32 revolutions per minute, at which speed they deliver the quantity of water required under contract. Some trouble was experienced with the pump valves, the material used proving too soft for the work; this will, however, be remedied by provision of valves of a harder and more suitable quality. The plant may, in other respects, be considered satisfactory.

Ryde Pumping Station.

The vertical pumps at this place have worked well throughout the year; the machinery has been thoroughly overhauled. The bridges and arches in Nos. 3 and 4 boilers have been rebuilt and doors for cleaning side flues were provided for each boiler; the valve chambers and pipes connected therewith have been strengthened where required. On an inspection of the works by the Board it was decided to enclose the unprotected side of grounds by a close paling fence.

Carlton Pumping Station.

The Blake duplex direct acting steam pumps, which formerly worked at North Shore prior to completion of the Ryde pumping plant, have been erected at Carlton, and have taken up the work formerly done by a gas engine, which will be retained for emergencies. The Blake pumps have a capacity of lifting 12,000 gallons per hour against a total head of 258 feet.

The demand for water in the zone supplied from Penshurst tank is greatly on the increase, and it becomes a matter for consideration whether it would not be advisable to disconnect the Railway tanks at Hurstville, which are supplied off same main, and provide a separate service. This can be done at a nominal cost, and the supply from Penshurst will then be available for domestic consumption only. The quantity of water pumped during the year was 10,497,000 gallons, with a gas consumption of 462,900 cubic feet, cost of same being £119 18s. 11d.

Quantity of Water Pumped.

The quantity of water pumped to the various service reservoirs is as under:—

	Gallons.
From Crown-street to Paddington	1,519,423,800
Do Woollahra	398,081,200
Do Waverley	177,265,000
Ryde to Ryde Hill	72,456,000
Do Chatsworth	187,882,000
Carlton to Penshurst	10,497,000
Total	2,360,105,000

Coal Consumed.

The quantity of coal consumed at Crown-street was 2,077 tons; at Ryde, 782½ tons. The Carlton pumps were worked by gas; the quantity consumed was 462,900 cubic feet.

The increase of water pumped to the various service reservoirs and tanks, above last year, is equal to 22 per cent. to Paddington, 3.56 per cent. to Woollahra, 22.45 per cent. to Waverley, Ryde to Ryde Hill 6.22 per cent., Ryde to Chatswood 51 per cent. These figures indicate the extension of suburban reticulation which has to be supplied from high level reservoirs, and points to the necessity for increased storage capacity.

Cost of Pumping.

The returns of the cost of pumping at Crown-street and Ryde stations for past year shows that a highly satisfactory reduction in expenditure has been effected, being 32 per cent. under that of previous year. The cost of raising 1,000,000 gallons 100 feet high was £1 7s. or about one-third of a penny per 1,000 gallons, as against £2 per 1,000,000 gallons in 1892, and £2 18s. 6d. in 1891. The cost for last year is about 23 per cent. more than the average cost of similar work in England. Considering the difference in cost of fuel, labour, &c., in the Colony as compared with the former I think it will be considered that the result is highly satisfactory.

Duty of Engines.

The duty of engines, as indicated by the weekly pumping returns, is given below:—

Crown-street to Paddington	62,653,846 ft.-lb.	per 112 lb. coal.
" to Woollahra	62,823,076	" "
" No. 2 to Waverley	60,566,666	" "
" No. 3 " 	51,430,000	" "
Ryde to Ryde Hill	55,906,461	" "
" Chatswood	66,816,923	" "
The average being	60,032,829	" "

Old Engines.

The engine which was formerly used for pumping water from Woollahra to Waverley Reservoir will be dismantled and stored at Park Road Depot for future service; tenders are about to be invited for this work. The old Rotative and spare Tangye engines will shortly be disposed of by public tender, and the space now occupied by same will be devoted to other services.

Botany

ENGINEER'S REPORT—*continued.*

Botany Pumping Plant and Reserves.

There being no further use for the old Botany pumps, now that the duplication of the trunk main from Pott's Hill has been completed, the Board decided to lease certain portions of the Botany Water Reserve in sections suitable for wool-scouring and similar trades. One section only has, so far, been taken up. The lessees have erected extensive sheds and large scouring plant, and have already put through hundreds of bales of wool. The water for scouring is drawn from old engine pond, and, after being used, passes off by a drain to Cook's River, clear of the dams and possibility of contamination. The balance of the land will be submitted for public tender prior to season commencing. With lease is attached certain water rights, and term of lease is limited to ten years.

Length of Mains under control of Board.

The total length of mains, exclusive of trunk lines under the control of the Board, is 745½ miles. The total number of screw-down hydrants fixed in city and suburbs is 1,451; the total number of ball hydrants fixed is 14,232.

Old Material taken up and Cleaned, &c.

The value of material taken out of ground, cleaned, and coated ready for reissuing during the year is £2,104 3s. 9d.

Expenditure on Loan Vote.

The expenditure on construction of new works, &c., during the year amounted to £14,751 12s. 2d., as against £94,789 11s. 9d. in 1892. The amount was expended as under:—

	£	s.	d.
New mains, &c.	10,932	16	0
Machinery	3,818	16	2
	<hr/>		
	£14,751	12	2

Expenditure on Revenue Vote for Maintenance.

During the early part of last year considerable reduction was made in the maintenance expenses of the Branch. The Assistant Engineer, Mr. C. W. Smith, submitted a report on the whole matter of supervision and book-keeping; the recommendations contained therein were generally adopted by the Board. The estimated amount of saving which would be effected annually by the recommendations has been more than realised. The amount in first instance was £6,132. The year's work shows that on salary sheet a reduction has been made from £2,000 to £1,610 per annum. Prospect staff pay-sheets from £3,666 16s. to £3,274 per annum, and the wages-sheet for maintenance and supervising labour for the fortnight from £605 3s. 2d. to £350, the aggregate amount being equal to £7,412. A simple and effective check on expenditure was also introduced by a system of debit orders, and the cost of every work can be ascertained by reference to one set of books.

The records of reticulation system generally were not in a satisfactory condition; and as the information necessary for extending mains was not available in a connected form, a recommendation was made to the Board to have proper records for this, and also for sewerage branch undertaken, the Board having approved of same, the work will be taken in hand early this year.

Country Town Supplies under Board's Control.

On the Campeltown and Liverpool systems the extensions during the year amounted to 212 yards only. During the latter end of last year, the supply for Liverpool was drawn from the storage dam, constructed at the off-take, during the time that water was cut off from canal pending the painting of the interior of aqueducts. Owing to complaints as to quality of water, which were borne out by analysis, the water in dam was let off and bottom and sides cleaned of weeds, &c., the dam was refilled from canal and town supplied from same. It was, however, found necessary to let water down and supply from canal—the painting of aqueducts being pushed on so as to admit of this being done. Under existing circumstances it would not be wise to depend upon the supply from dam, and information is being obtained so as to improve existing works. As there will be no necessity for cutting off supply from canal for a considerable period there will be ample time to devote to improvements.

Richmond Water Supply.—The Board assumed the management of this system in July last, it having been carried out by the Harbours and Rivers Department. The system consists of a pumping plant erected on the banks of the Hawkesbury River below the confluence of the Grose and Nepean Rivers; a service tank having a capacity of 225,000 gallons, from which a 6-inch supply main extends for 4 miles to the town of Richmond, together with 5½ miles of reticulation mains 3 and 4 inches diameter. The demand for water is rapidly on the increase, and with good management the system may be made a paying one. During the half-year 3,838,000 gallons have been pumped with a consumption of 21 tons of coal.

General Work.

The Report of the Clerk of Works shows that a considerable amount of detached work has had to be supervised in connection with engine foundations, additions, erecting and repairing of pumping plant.

Reports and Statements.

The Reports and Statements in detail from the several sub-branches are forwarded herewith.

METER

ENGINEER'S REPORT—*continued.*

Meter Branch—Returns for 1893.

Crown-street Depôt, 27th January, 1894.

Water-meters.

THE total number of water-meters tested and repaired during the year was 877. Of this number 191 were for country districts, leaving 686 for the metropolitan area. The total number for last year was 1,058, showing a decrease of 372 in the metropolitan area only. This, I think, is duo to the continuous rain during the year, and the privilege to ratepayers *re* special fees for gardens, &c.

For the country meters there is a slight increase in the repairing of meters only. This, I think; can be accounted for by the Hunter River District Water Supply and Sewerage Board erecting testing tanks, &c., at their head office, for the purpose of testing all new meters for the districts under their control. A number of old meters are still sent in for repairs to these shops.

Water Fittings.

The total number of water fittings passed through this Branch during the year was 69,253. Of this number 67,630 were tested and stamped, 1,103 were tested and returned on account of slight defects, to be remedied, and returned for retesting and stamping, and 520 were condemned.

At the beginning of the year about 4,700 old class water fittings of various makers, were tested on behalf of the Hunter River District Water Supply and Sewerage Board, for the various importers at West Maitland and Newcastle. After the usual examination and test they were stamped with a special steel stamp provided by the Hunter River District Water Supply and Sewerage Board. About 2 per cent. were condemned as useless.

Last year the total number tested was 64,120. Of this number 62,631 were passed and stamped, 679 returned as defective, and 810 condemned. The increase of stamped fittings passed this year is 5,133 (including those referred to for the Newcastle and Maitland importers). There is an increase in the defective fittings of 424 (these defects are not of a serious nature, being easily remedied, and are due to carelessness on the part of the makers), and a decided decrease in the condemned fittings of 485.

Electrical Indicators, &c.

The electrical recording instruments in connection with the various reservoirs and the pumping stations have during the year worked satisfactorily; also all the water-level gauges, &c., in connection with the reservoirs and tanks.

The Bristol main-pressure recording instruments work satisfactorily, and by their means any unusual draught on the water-mains is detected.

The staff in connection with this branch have been fully employed in the repairing and testing of water-meters, and testing water-fittings and various other mechanical work in connection with the department.

W. J. ADAMS,
Meter Tester.

METERS, 1893.

New Meters tested before connection, and defective Meters repaired during the year 1893.

Name of Manufacturer.	3"		4"		5"		6"		8"		10"		12"		14"		16"		18"		20"		Totals.			
	New.	Old.	New.	Old.	New.	Old.	New.	Old.	New.	Old.	New.	Old.	New.	Old.	New.	Old.	New.	Old.	New.	Old.	New.	Old.	New.	Repd.		
J. Tylor and Sons, N.P.			16	21	51	120	4	8			1	5	2	4					4		2			74	164	
Guest and Crompton		1			43	50	10	28	4	18	3	9	5	4					5		2			65	113	
Siemens and Halske			1	7	41	44	14	14	3		2	1	1	1										62	67	
J. Tylor and Sons, O.P.					2	12		15		9		2		5									1		46	
R. Laidlaw and Sons					6	1	7	1	4		2	1	1	1	1		1	1	1					5	28	
D. R. and Droop				1		15		5		3		1		1			1	2						1	23	
Davies, Shephard, & Co.							9	1																1	9	
Dewrance & Co.			1	1		3		1																1	5	
H. Meinecke				1		2							1		1										2	3
J. Danks and Sons					1	3	2						5												8	3
* Kent					1					1															2	
Totals	1	18	30	142	265	32	75	7	22	8	19	15	16	1	1	2	12		4			1	221	465		
																								406		
	Grand Total																							686		

* These Meters were tested for the Hydraulic Power Company

ENGINEER'S REPORT—continued.

TAPS, 1893.

NUMBER, Class, and Size of Taps, &c., tested during the year 1893.

Class of Fitting.	Size.	Months.												Total.
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
Bib Cocks	In.	300	207	893	107	155	844	145	114	75	230	90	195	2,411
Do	1	332	897	801	238	249	777	530	801	158	517	29	217	5,046
Do	2	1,719	1,522	4,848	1,181	1,888	623	938	1,927	1,078	1,722	1,831	1,360	20,762
Do	1 1/2	4	236	231	24	60	43	32	6	37	28	3	53	762
Do	1 1/4	1	1	8	1	1	1	1	1	1	1	1	1	17
Do	2	1	1	1	1	1	1	1	1	1	1	1	1	15
Do	3	1	1	1	1	1	1	1	1	1	1	1	1	4
Main Cocks	1	418	500	1,550	370	194	294	532	460	350	181	252	200	5,307
Do	1	1	1	55	12	57	12	12	20	12	18	12	12	210
Path Cocks	1	60	17	17	60	24	35	306	120	424	358	100	208	2,088
Do	1 1/2	589	616	937	356	282	471	790	306	120	424	358	100	5,379
Do	1 1/4	12	79	103	16	212	38	24	1	37	18	36	66	641
Do	1 1/2	1	32	24	12	12	31	31	64	41	13	3	3	242
Do	1 1/4	6	7	12	3	23	32	41	41	13	3	3	3	117
Do	2	1	1	2	1	1	1	1	1	1	1	1	1	23
Do	3	1	1	1	1	1	1	1	1	1	1	1	1	26
Ball Cocks	1	230	54	397	144	151	199	72	16	250	26	1,530	1,530	
Do	1 1/2	895	719	678	601	504	588	489	768	1,010	97	647	4	6,839
Do	1 1/4	24	11	176	129	24	73	67	36	73	8	26	8	646
Do	1 1/2	19	85	2	12	12	34	6	12	6	6	5	5	131
Do	1 1/4	18	1	1	1	1	1	1	1	1	1	1	1	26
Do	1 1/2	8	1	1	1	1	1	1	1	1	1	1	1	14
Do	3	1	1	1	1	1	1	1	1	1	1	1	1	8
Shower Cocks	1	463	363	458	436	301	286	332	322	658	247	310	661	4,737
Do	1 1/2	194	801	834	171	276	251	305	180	1,171	210	106	103	4,105
Do	1 1/4	17	123	49	16	6	12	12	6	6	6	3	1	253
Do	1 1/2	1	1	3	1	1	1	1	1	1	1	1	1	36
Do	1 1/4	1	1	1	1	1	1	1	1	1	1	1	1	4
Do	1 1/2	1	1	1	1	1	1	1	1	1	1	1	1	7
Plated Cocks	1	11	88	166	116	14	21	8	25	71	2	71	688	
Do	1 1/2	17	32	51	1	10	60	2	17	37	66	17	282	
Do	1 1/4	4	6	40	20	1	1	1	1	3	17	2	102	
Unions	1	41	80	91	0	30	72	11	18	24	379	379	379	
Do	1 1/2	150	502	1,299	145	484	548	312	600	801	222	315	18	4,860
Do	1 1/4	40	222	82	47	132	102	40	72	40	106	811	811	
Do	1 1/2	1	5	24	24	24	36	3	1	1	72	163	163	
Do	1 1/4	1	2	3	25	3	3	1	1	1	99	99	99	
Do	1 1/2	1	2	12	8	6	12	12	1	34	12	54	54	
Do	2	1	2	1	1	1	1	1	1	1	1	21	21	
Wheel Valves	1	1	7	1	1	1	1	1	1	1	1	1	1	
Do	1 1/2	2	4	9	1	1	1	1	1	1	1	1	1	
Do	1 1/4	1	1	1	1	1	1	1	1	1	1	1	1	
Do	1 1/2	23	7	2	30	1	22	1	1	1	1	1	1	
Do	2 1/2	1	17	12	8	6	12	12	1	34	1	1	1	
C. P. Locks	8	1	1	1	1	1	1	1	1	1	1	1	1	
Plated Pillar Cocks	1	161	6	22	166	57	4	107	107	107	107	107	107	
Do	1 1/2	1	7	1	1	1	1	1	1	1	1	1	1	
Regulating Cocks	1	14	8	4	1	2	102	102	102	102	102	102	102	
Do	1 1/2	1	1	1	1	1	1	1	1	1	1	1	1	
Hose Hydrant	1	1	1	1	1	1	1	1	1	1	1	1	1	
Plug Cocks	1	1	2	1	1	1	1	1	1	1	1	1	1	
Do	1 1/2	1	1	1	1	1	1	1	1	1	1	1	1	
Do	1 1/4	1	1	1	1	1	1	1	1	1	1	1	1	
Do	2	1	1	1	1	1	1	1	1	1	1	1	1	
Fountain Cocks	1	1	1	1	1	1	1	1	1	1	1	1	1	
Do	1 1/2	1	1	1	1	1	1	1	1	1	1	1	1	
Fittings Stamped	1	5,591	6,490	13,344	4,350	5,147	4,870	4,900	6,240	6,823	4,123	3,895	3,283	67,630
Do Defective	1	126	93	267	80	154	58	76	80	46	31	19	78	1,103
Do Condemned	1	32	294	108	12	24	30	30	6	6	6	6	6	620

Grand Total 69,258

ENGINEER'S REPORT—*continued.*

Plumbing Branch, Annual Return for 1893.

Sydney, 17 January, 1894.

As instructed I beg to submit annual return on drillings, extensions of gas engines, horse troughs, gully shafts, to which Board's water has been laid on during year, and a list of total number of permits issued by this Branch for the like period.

Seven hundred and forty-three inspections have been made by Assistant Plumbing Inspector, and 261 by myself.

Numerous complaints as to insufficient supply of water have been made by occupants of large terraces throughout the city; on being investigated it has been found that corrosion to the extent of complete stoppage has been the cause, and in each case dealt with, a renewal of service resulted in a plentiful supply being obtained.

	Drillings.	Extensions of Water Services	Horse Troughs Supplied	Gas Engines Supplied.	Gully Shafts Supplied.	Number of Permits Issued.		Drillings.	Extension of Water Services	Horse Troughs Supplied.	Gas Engines Supplied.	Gully Shafts Supplied.	Number of Permits Issued.
Alexandria	48	404	...	...	14	238	Leichhardt	217	216	1	1	...	408
Ashfield	123	231	...	...	...	320	Liverpool	43	9	...	...	...	49
Auburn	30	7	...	...	...	46	Macquarie Ward	60	62	...	2	2	276
Balmain	138	162	...	...	...	390	Marrickville	183	187	1	1	...	391
Botany	48	8	...	...	...	69	Newtown	94	1,262	1	...	...	839
Bourke Ward.....	29	115	1	4	1	263	North Sydney ...	195	234	...	...	...	617
Brisbane Ward ...	19	84	2	11	1	229	North Botany ...	67	11	...	...	...	66
Burwood	77	96	...	...	...	251	Paddington	66	253	...	...	1	395
Campbelltown ...	10	2	...	...	...	17	Petersham.....	127	233	1	...	...	345
Camperdown	38	605	4	...	...	463	Phillip Ward ...	85	70	2	...	6	254
Canterbury	20	11	...	...	...	33	Prospect & Sher-						
Concord	40	11	...	...	...	57	wood	6	...	...	...	...	9
Cook Ward.....	146	175	...	...	...	588	Randwick	73	69	...	...	...	233
Darlington	7	19	...	1	...	57	Richmond.....	16	12	...	...	...	32
Denison Ward ...	90	119	...	1	3	340	Redfern.....	41	187	...	1	...	316
Drummoyne	47	33	1	...	...	76	Rockdale	113	62	2	...	...	202
Erskineville	8	98	...	...	...	83	Rookwood	14	12	...	...	...	33
Enfield	26	11	...	...	...	44	Ryde	31	15	...	...	...	48
Fitzroy Ward.....	67	100	1	...	3	447	St. Peters	57	33	...	...	...	104
Five Dock	12	3	...	...	...	16	Strathfield	64	69	1	...	...	166
Gipps Ward	29	65	...	1	2	241	The Islands	1	...	...	...	...	1
Glebe	69	93	...	...	5	247	Waterloo	32	259	...	1	...	220
Granville	58	34	...	...	...	97	Waverley	91	142	...	1	...	263
Guildford	1	4	...	...	...	5	Woollahra	90	281	...	...	...	480
Hunter's Hill.....	66	44	...	...	...	132	Willoughby	83	22	...	...	...	109
Hurstville	74	38	...	...	...	118							
Kogarah	40	26	...	...	...	63		3,139	6,248	18	25	38	10,795

J. B. WOOD,

Inspector of Plumbing.

Report

ENGINEER'S REPORT—*continued.*

Report of Progress in Meter Clerk's Department during 1893.

Sydney, 8 January, 1894.

The number of new meters fixed is as follows:—

Sydney and Suburbs	...	...	...	...	...	...	352 (26 for B.P.)
Richmond	...	...	...	...	...	...	2
Government	...	...	...	...	...	...	10
							<hr/>
							364
Disconnected in 1893	...	...	...	...	...	...	148
							<hr/>
Net increase	...	...	...	...	...	...	216
							<hr/> <hr/>

The number of meters in operation at present time is:—

Sydney and Suburbs	...	...	...	...	...	...	4,468
Campbelltown and Richmond	...	...	...	...	...	...	32
Government	...	...	...	...	...	...	142
							<hr/>
							4,642
							<hr/> <hr/>

Total from commencement:—

Sydney and Suburbs	...	...	...	...	...	...	6,403
Government	...	...	...	...	...	...	192
							<hr/>
							6,595
Total disconnected	...	...	...	...	...	...	1,953
							<hr/>
							4,642
							<hr/> <hr/>

Three hundred and forty-eight meters became inoperative from various causes during the year these were in nearly all cases promptly repaired and refixed.

I think the progress in this department would have been greater but for the fact of its becoming known that the Board would supply meters at a rental in 1894. This will be a great inducement to those who cannot well afford to purchase.

The revenue from meters is still suffering from the depression in trade, many manufactories being closed, or only working half-time.

The new system of reading meters by classification, as introduced by the secretary in 1891, has been now two years on trial, and is working well; not the least advantage being a saving of £320 per annum.

E. R. ABSELL,
Meter Clerk.

District.	Number of different sized Pipes.												Lengths of different sized Pipes, including valves, bonds, &c., in yards.												Total No. of Pipes for District.	Total length of Mains for District, in yards.
	3"	4"	6"	8"	9"	10"	12"	15"	18"	20"	24"	3"	4"	6"	8"	9"	10"	12"	15"	18"	20"	24"				
1 Alexandria	...	22	6	...	1	...	2	...	...	...	...	...	61	11	...	4	...	4	...	...	...	...	31	80
2 Ashfield	...	1	163	...	...	...	...	...	...	...	...	...	2	496	...	...	...	...	...	...	...	...	164	498
3 Auburn	...	102	1	...	...	...	...	...	...	...	...	...	293	1	...	...	...	...	...	...	...	...	103	294
4 Balmain	...	5	1	...	...	...	...	...	...	...	...	...	7	3	...	...	...	...	...	...	...	...	6	10
5 Botany	...	318	...	...	...	...	...	...	...	...	...	...	968	...	...	...	...	...	...	...	...	...	318	968
6 Burwood	...	236	1	...	...	...	...	...	...	...	...	...	728	3	...	...	...	...	...	...	...	...	237	731
7 Campbelltown	41	...	...	...	...	...	...	...	...	...	...	127	...	...	...	...	...	...	...	...	...	...	41	127
8 Camperdown	...	...	1	...	1	...	1	...	...	...	...	...	...	1	...	5	...	1	...	...	...	...	3	7
9 City of Sydney	35	358	458	...	10	...	37	...	...	...	1	...	65	1,101	1,402	...	43	...	158	...	...	4	899	2,773
10 Concord	...	520	179	...	...	...	...	...	...	...	...	...	1,592	534	...	...	...	...	...	...	...	...	699	2,126
11 Darlington	...	10	2	...	...	...	...	...	...	...	...	...	80	9	...	...	...	...	...	...	...	...	12	39
12 Drummoyne	...	182	100	...	...	...	...	...	...	...	...	...	536	299	...	...	...	...	...	...	...	...	282	835
13 Enfield	...	106	...	...	...	...	...	...	...	...	...	...	323	...	...	...	...	...	...	...	...	...	100	323
14 The Glebe	2	173	...	...	...	...	...	...	...	...	...	4	617	...	...	...	...	...	...	...	...	...	175	621
15 Granville	...	299	...	...	...	...	...	...	...	...	...	...	944	...	...	...	...	...	...	...	...	...	299	944
16 Hunter's Hill	...	60	...	...	...	...	...	1	...	...	...	...	187	...	...	...	...	2	...	...	...	...	61	189
17 Hurstville	...	108	1	...	...	...	...	...	...	...	...	...	331	2	...	...	...	...	...	...	...	...	109	333
18 Kogarah	...	28	...	...	...	...	...	...	...	...	...	...	85	...	...	...	...	...	...	...	...	...	28	85
19 Leichhardt	1	100	1	...	...	...	...	...	...	...	...	1	303	1	...	...	...	...	...	...	...	...	102	310
20 Liverpool	...	29	...	...	...	...	...	...	...	...	...	...	89	...	...	...	...	...	...	...	...	...	29	89
21 Erskineville	...	35	...	...	...	...	...	...	...	...	...	...	109	...	...	...	...	...	...	...	...	...	35	109
22 Marrickville	...	288	8	...	2	...	1	...	...	...	...	...	883	30	...	8	...	9	...	...	...	...	299	930
23 North Botany	...	313	...	...	...	...	...	...	...	...	...	...	958	...	...	...	...	...	...	...	...	...	313	958
24 North Sydney and Mosman	...	254	448	...	...	...	...	...	...	...	...	...	779	1,371	...	...	...	...	...	...	...	...	702	2,160
25 Newtown	1	29	6	...	1	...	2	1	...	...	...	1	78	18	...	1	...	14	2	...	...	...	40	114
26 Paddington	6	302	5	...	1	...	...	1	...	...	...	18	885	16	...	1	...	1	...	...	...	...	315	921
27 Petersham	...	276	1	...	1	...	...	...	...	...	...	...	827	3	...	1	...	...	...	...	...	...	278	831
28 Randwick	...	322	...	...	...	...	...	...	...	...	...	...	977	...	...	...	...	...	...	...	...	...	322	977
29 Redfern	...	1	2	...	...	...	...	...	...	...	...	...	1	2	...	...	...	...	...	...	...	...	3	3
30 Rockdale	1	121	25	...	...	...	...	...	...	...	...	1	367	74	...	...	...	...	...	...	...	...	147	442
31 Rookwood	...	217	...	...	...	...	...	...	...	...	...	...	658	...	...	...	...	...	...	...	...	...	217	658
32 Ryde	...	177	3	...	...	...	...	...	...	...	...	...	544	10	...	...	...	...	...	...	...	...	180	554
33 St. Peters	...	179	...	...	...	...	...	...	...	...	...	...	543	...	...	...	...	...	...	...	...	...	179	543
34 Strathfield	...	96	...	...	...	...	...	...	...	...	1	...	290	...	...	...	...	...	...	...	...	1	97	291
35 Waterloo	...	109	3	...	1	...	...	...	...	...	...	...	309	12	...	2	...	...	...	...	...	...	113	323
36 Waverley	...	110	...	...	...	...	...	...	...	...	...	...	339	...	...	...	...	...	...	...	...	...	110	339
37 Willoughby	1	1,042	747	...	...	14	...	...	...	...	...	4	3,238	2,278	...	...	49	...	...	...	...	...	1,804	5,569
38 Woollahra	...	365	11	...	5	...	1	...	...	...	...	...	1,086	22	...	8	...	1	...	...	...	...	382	1,117
Total for year	88	6,893	2,173	...	23	14	44	3	...	1	1	221	20,973	6,598	...	73	49	187	5	...	4	1	9,240	28,111		

Grand Total—Number of Pipes, 9,240=15 miles 1,711 yards.

CHARLES W. SMITH,
Assistant Engineer for Water Supply.

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ENGINEER'S REPORT—*continued.*

SUMMARY of Work done during 1893 under Inspectors of Water Services.

Mains laid	...	...	...	...	...	9,240 Pipes=15 miles 1,711 yards.
„ cleaned	...	...	...	...	...	26 „ 456 „
„ removed	...	...	...	...	...	1 „ 406 „
„ lowered	} to suit altered levels of streets	...	...	...	...	1 „ 1,351 „
„ raised		...	...	...	...	113 „
Hydrants fixed	...	...	...	...	...	Screw-down, 8; ball, 343
Leaks, services cut off to prevent waste	...	...	...	...	...	No. 999
Services cut off for non-payment of rates	...	...	...	...	...	No. 118
Horse troughs supplied	...	...	...	...	...	No. 18
Gas engines	„	...	...	...	...	No. 25
Gully shafts	„	...	...	...	...	No. 38
Main drillings to connect services	...	...	...	...	...	No. 3,130
Extensions from existings services	...	...	...	...	...	No. 6,248
Number of permits issued	...	...	...	...	...	No. 10,795
Value of material taken out of ground, cleaned and tarred fit for reissue and old metal	...	...	...	...	...	£2,104 3 9

ENGINEER'S REPORT—*continued.*

Prospect Works—Superintendent's Report.

Prospect Reservoir, Prospect, 15 January, 1894.

I HAVE the honor to submit for your information the following works, which have been done out of the contingent vote for 1893, viz. :—

Making cottage habitable for maintenance man (G. Dobson) at Potts' Hill.

Putting in new concrete at a slip which occurred in No. 5 concrete lined embankment for a length of 42 feet.

Cutting out all cracks for a length of 1,410 feet, and filling in again with cement concrete; also 1-inch cement rendering for a distance of 480 feet in length of the worst part of No. 3 concrete lined embankment.

Cutting out all cracks and filling in with cement concrete the whole length (195 feet) of No. 2 concrete lined embankment.

Cutting out all cracks and filling in with cement concrete; also putting on a 2-inch coat of cement rendering, owing to concrete being inferior, for the whole length (231 feet) of No. 1 concrete lined embankment.

Opening out and making good puddle core in embankments Nos. 3, 5, 6, 7, and 9.

Previous to the above works being done the leaks represented a weekly loss of water to the amount of 3,568,000 gallons. It is now reduced to 300,000 gallons, and after doing some more rendering, which is intended to be carried out this year, I hope to further reduce the waste.

The reservoir embankment has been under repair by the Harbours and Rivers Department, of which you have a report.

A new fence has been erected at what is called the boiling down paddock, for taking in stock for agistment.

The works performed on line of conduit above reservoir, from contingent vote are as follows :—

Renewing two 10-ft. and one 3-ft. 6-in. oregon timber flumes, and replacing with wrought iron ones and concrete aprons.

Diverting water from over bridges and approaches, two in number, by fixing wrought iron flumes over canal with concrete aprons. These approaches are now in good order and can be kept so for the future.

Putting in concrete shaft to the cataract tunnel, found necessary owing to the timber having decayed and given way.

Painting aqueducts above Kenny Hill. The first four were well in hand at the end of the year.

The works in general on the whole length of canal, from Potts' Hill to the Pheasant's Nest, are in very fair order.

W. WAKEFORD.

ENGINEER'S REPORT—*continued.*

Pumping Plants.—Report of Mechanical Engineer.

Crown-street, Sydney, 8 January, 1894.

I HAVE the honor to make the following report upon the working of the pumping engines, &c., and water supply, for the year ending 31st December, 1893.

One of the plungers of No. 1 engine became loose on rod, and that necessitated its stoppage for twenty-two (22) hours, to enable its being drawn and made good—the water supply to Paddington being kept up by No. 2 engine—otherwise the engines have been kept going daily throughout the year.

Periodical examinations have been made, and renewals to air pump valves incidental to ordinary wear and tear have been effected, viz:—In September one (1) set of V I valves to No. 2 engine (8), at intervals when stopped; also two (2) head valves and four (4) bucket V I valves had to be renewed in No. 1 engine in October; repairs to feed pump, valve chest, and new driving stud pins; otherwise nothing beyond the ordinary routine work of examinations, repacking, and renewals have been required to the engines. The main steam pipe joints became very bad, necessitating their being remade all throughout; also stop valve chests on boilers, and which was done without interruption to the pumping.

The No. 3 pumping engine, supplied by Mort's Dock Engineering Company, was officially started on September 25th, 1893, and was put on doing the whole of Waverley supply pumping on the 17th October, 1893, which duty it has been doing uninterruptedly up to the present time, taking advantage of stoppages to renew defective vulcanised india-rubber pump valves where required. At Botany works the banking of fires was discontinued on July 1st, 1893. Having a duplicate water supply main from Potts' Hill, it was not deemed necessary to keep the fires banked at Botany. I have made periodical calls of inspection throughout the year to the several pumping works, and reported accordingly:

The fire-extinguishing appliances in connection with reservoir buildings have been tested monthly, and seen to their being in efficient and working order. The quantity of water pumped at Crown-street works to Paddington during the year is 1,515,949,800 gallons, showing an increase of 190.3 million gallons on the previous year; and in the pumping of the last quarter of the year an increase of nearly 83.5½ million gallons on that of the corresponding quarter of the previous year.

The quantity of water pumped to Woollahra reservoir during the year was 393,094,500 gallons, being 14.5 million gallons more than the previous year, and in the pumping of the last quarter of the year an increase of 14.72 millions on that of the corresponding quarter of the previous year.

The quantity of water pumped to Waverley reservoir during the year was 177,265,102 gallons, giving an increase on that of the previous year of 32.51 million gallons, and in the pumping of the last quarter of the year an increase of 17.87 million gallons on that of the corresponding quarter of the previous year.

The quantity of water pumped by the Ryde pumps during the year was 262,848,000 gallons, and in the pumping of the last quarter of the year an increase of nearly 11.8 million gallons on the corresponding quarter of the previous year.

The pumping to Penshurst was continued twice a day with the gas engine pump at Carlton throughout the year as the tank is too small to contain a day's supply, and in some very hot days the pump being taxed to its fullest limit. The Blake pumps having been dispensed with at North Sydney they were removed to Carlton and erected in November last, it being nearly the double pumping capacity of the gas pump, and will take up the duty of that pump about the commencement of the ensuing year.

J. FYFE,

Engineer of Pumping.

RETURN of Water pumped and Coal consumed for year ending 31st December, 1893.

From.	To.	Water pumped.	Coal consumed—banking included.
		Gallons.	Tons cwt. qr.
Crown-street	Paddington	1,515,949,800	1,101 15 1
"	Woollahra	393,094,500	541 19 2
"	Waverley	177,265,100	427 9 2
Coal consumed on running and heating up new engine at various times, and heating up boilers on changing during the year			34 0 0
Ryde Works	Ryde Hill	75,456,000	782 10 3
"	Chatswood	187,392,000	

J. FYFE.

CHARLES W. SMITH,

Assistant Engineer for Water Supply.

RETURN of water pumped and coal consumed for quarter ending 31st December, 1893.

From.	To.	Water pumped.	Coal consumed—banking included.
		Gallons.	Tons cwt. qr.
Crown-street	Paddington	440,628,000	323 9 0
"	Woollahra	103,756,000	145 17 2
"	Waverley	58,044,700	154 3 3
Ryde Works	Ryde Hill	22,080,000	223 17 2
"	Chatswood	55,200,000	

J. FYFE.

CHARLES W. SMITH,

Assistant Engineer for Water Supply.

SEWERAGE

ENGINEER'S REPORT—*continued.*

SEWERAGE BRANCH.

Transfer of Sewers from Government.

THE following Sewers and Storm-water Drains, constructed by the Government Sewerage Department, have been transferred to the control of the Board, in accordance with the provisions of Amended Sewerage Act of 1889:—

Sewers—

Waverley and Woollahra Branch Sewer.
Glebe Main and Submains.
Elizabeth Bay Branch Sewer.
Camperdown Branch Sewer.

Storm-water Drains—

Iron Cove Branch Channels.
Long Cove Creek.
Minmi-street to Shea's Creek.
Macdonaldtown.

Total length of sewers, storm-water drains transferred to 31 December, 1893, is shown in Appendix A, aggregating 7.43 miles.

Surveys, &c., New Works.

During the year surveys and plans have been prepared for extending sewerage system to suburbs, the length of sewers dealt with aggregates 19 miles. It is intended this year to push on surveys in connection with Western Suburbs System, including low level zone of Macdonaldtown and St. Peters. In the Eastern Suburbs the portions of Waverley and Randwick, which can be drained into existing outfalls, will be taken in hand, as there is a prospect of funds being available for the works when ready for contract.

New Sewers.

The length of sewers constructed during the year did not aggregate more than 4.45 miles, viz., 4.35 miles of foul water sewers, 10 miles of storm-water ducts. The operations of this branch were entirely suspended as regards constructive works owing to funds not being available, although there were ample balances in the different loan votes. The effect on the revenue by stopping the reticulation works was referred to in my previous report.

Arrangements were, however, made with the Treasury, and the Minister approved of the acceptance of tenders at the latter end of the year to the amount of £37,750—the length of sewers comprised in contracts being 22½ miles. The districts interested are Glebe, Waverley and Randwick, Marrickville and Petersham. No time was lost in starting works, and the whole are now in operation, and I hope to see a section of same revenue bearing in the first half of this year. The total length of the sewers under the jurisdiction of the Board is 182.34 miles. Sewers, &c., constructed by Board are shown in Appendix marked B.

Transfer of certain Storm-water Sewers from Government to Board objected to.

During the year objection was raised by the Board to taking over storm-water channels or ducts from the Government except in districts which were revenue bearing, until such time as the Board was placed in a position to levy a drainage rate to cover the interest on the cost of same, otherwise the general revenue would be hampered with a load of dead capital. A further amending Act was introduced covering powers for above rating, as also other important measures, and will shortly pass into law.

According to the Act the drainage-rate will be charged within areas drained by the several ducts. This rate will merge into the general sewerage rate when the various districts are reticulated.

Outfall Sewers.

The northern and southern outfall sewers have been examined by the Assistant and District Engineers and found to be generally in good order. In some instances the rendering has been worn away by the attrition of road metal and debris. I do not consider this of much import, as the quality of the bricks used in lining will withstand the wearing referred to. It was found necessary to make provision for safety of men engaged in the lower parts of the northern outfall sewer, as in the event of their being caught in a heavy rainstorm loss of life might occur. The Board approved of refuges being placed in deep shafts and life-chains at lower end of outfall. The various penstocks, valves, &c., have been attended to during the year and are in good working order.

Suburban Sewers.

The whole of the suburban systems are in good order, being regularly flushed once a week, in the low-lying portions of Alexandria and terminal points of sewers in Randwick automatic flushing chambers have been constructed, the working of same has been very satisfactory. The chambers have a capacity of 200 gallons, and are fed by a dribble from tap; the discharge is by a vertical annular syphon, the pipe being 6 inches in diameter. The syphon is made of galvanized iron, with fixing clips at bottom, and costs a few shillings. The sewers have fulfilled the object for which they were laid. No complaints were received of flooding through surcharging of same. In the early part of last year it was found that the painting of aqueduct across Shea's Creek required renewing; this was done by maintenance men as time permitted.

The

ENGINEER'S REPORT—*continued.*

The whole of the Randwick sewers which were transferred to the Board have been carefully inspected, and where necessary man-hole, lamp-holes, and flushing stations established; this work has decreased the cost of maintenance.

Removal of Silt from Outfall Sewers.

The quantity of silt removed during the year from the main outfall sewers was 950 cubic yards from Bondi Sewer, 400 cubic yards from Botany Sewer, and 100 cubic yards from silt pit at University Park—this is a considerable reduction in last year—the quantities being 1,312, 630, and 120 cubic yards respectively. This, I think, can be mainly attributed to the fact that the daily flow is increasing through the gradual extension of the system, and greater scouring power being obtained, the silt is carried on to the outfalls.

No successful claims have been made on account of flooding of premises—in every case when investigated the cause has been found to be due to choking of streets, gullies, and defects in road construction. I dealt with this matter in my previous report.

Repairs to City Sewers Old System.

The following sections of old city system have been repaired and put in good order during the year, viz., Loftus-street from Macquarie Place, Southwards, Tank Stream, north of Martin Place, Bridge-street, Castleragh-street. Some lengths of the above sewers were in a very bad condition, in some instances the invert and crown had to be entirely renewed. Old man-hole shafts have been raised to the surface and fitted with iron covers to facilitate working in the sewer. There still remains the brick sewers in Pitt-street, Phillip and Elizabeth Streets, also the Wolloomooloo Bay system. In one of the sewers in the latter district it was found that a portion of the arch had given way. The repairing gang was set to work at once on the damaged length. The Elizabeth-street sewer is reported to be all open-jointed, the original mortar which was made with shell lime having disappeared. The sections will be taken in hand this year, and I trust to see same completed, or nearly so.

The repairing work done since commencement is shown as under:—

Northern Section.	Invert repaired, feet super.	Pointing, feet super.	Arches repaired, feet lineal.
1893	10,212	33,072	59
1890-1-2	15,354	143,013	68
Total	25,566	176,085	127

The following pipe-sewers have been repaired:—King-street, Burton-street, Hordern's Stairs, Hunter-street, Devonshire-street, and Grantham-street Stairs.

Fourteen man-holes have been raised to the surface, and twelve were fitted with castings. Nineteen old and damaged wooden man-hole covers were removed as dangerous, and replaced with cast-iron frames, &c.

Six old iron man-hole covers were replaced with new type castings.

The quantity of silt removed from the city sewers old system during the year was 2,500 tons—this is disposed of on reclamation works by the Board's punt, the Harbours and Rivers Department doing the towage.

The removal of silt from the sewers is always a heavy charge against the revenue. All the outlets are below high-water mark, and sewers being tide-locked twice in the twenty-four hours leads to deposit of silt.

The intercepting points between old and new systems being of a size favourable to admission of silt into intercepting sewers, the whole of the openings are being restricted so as to provide for daily sewage and exclude storm-water as much as possible.

The whole of the cleansing and flushing on main branches in the city has been, by order of the Board, carried out at night. The mud barge has been docked, bottom-cleaned, and hull painted by the Harbours and Rivers Department for the Board. Owing to want of funds the proposed abolition of silt pit at Darling Harbour, and extension of sewer through same could not be carried out. The work will, however, be taken in hand this year, which will result in a reduction of silt to be removed.

Outlet Works.

The buildings—screening chambers, valves, &c., are in good order. The cottages are all occupied, and in good condition; the trees are thriving and growing well. The foreman reports that the sludge removed from screening chambers, &c., during the year amounted to 879 cubic yards, showing a decrease of 811 cubic yards as compared with 1892. This is satisfactory, considering the increased amount of sewage during same period.

The quantity of lime used for cleaning and washing walls was 12 tons as against 15 tons in 1892.

The locomotive and trucks are in good running order.

The bridge over river has been repaired, the worst of the piles which had been affected by *teredo* have been removed, defective girders, head-stocks, and corbels are being renewed where required. The repairs were anticipated in my previous report, and can only be considered as of a temporary character until some more substantial means of access is provided.

In order to cleanse pits more rapidly as compared with hand crab and oil, engine the "Capitaine" was purchased, and a contract let to Pope, Maher, & Co. to attach same to existing crab with other fittings. The engine has been tried and found to do its work successfully. The agent instructs the foreman in the working of same. The staff of four men will be reduced to three, as I consider, with the improved lifting gear, three men including foreman will be ample for the work.

Sewage

ENGINEER'S REPORT—*continued.*

Sewage Farm.

The filtration and irrigation areas still continue to act well; the manager reports they perform the work as well as when first laid down.

Last year being favourable for agriculture, fodder and vegetables were abundant and cheap, so that there was no great demand for the farm produce.

Plans have been prepared for laying a section of the scrub lands westward of farm into grass paddocks and spare filtering tank, as referred to in previous report. No funds being available the work was not pushed on, and as negotiations are now pending for leasing the farm and scrub lands, it is a question as to whether Board should expend any more funds in improvements, or leave it to lessee to extend the cultivated area.

The cattle-sheds and piggeries are in good order, and Board's stock in good condition. The agistment stock have been put into filtering-beds and keep down the grass growing in same, upon which they thrive very well and look in good condition.

Some time ago the Board approved of purchasing horses and drays to do the work on the farm instead of hiring as heretofore. This system has proved most profitable, as the horses are in splendid condition and have more than paid for themselves.

The truck provided for carrying carts and stock across the river has proved a great convenience; the transport is made without any hitch or difficulty. The revenue received from the farm during the year was £333 9s. 11d., as against £217 14s. 3d. last year. There is also a considerable quantity of produce on farm to be disposed of, and £25 agistment fees outstanding.

The sorghum was sold by auction and realised £10 per acre. The manager states that he will have a second crop of same area, so that the return for sorghum crop, if same price is realised, will be equal to £20 per acre. In addition to this there is the winter crop of vegetables.

The pigs are a good source of revenue, and the stock in hand stands in the books as paid for. All increase is profit to the account.

Gaugings were taken of the flow of sewage in main carrier during winter and summer seasons, with the following results:—Winter, dry weather flow 1,576,877 gallons, and summer, ditto, 1,450,385 gallons per diem. The maximum flow is lower than last year, and as the measurements were taken under precisely same conditions, and same formula used, I can only account for the difference by the possibility of former gaugings being affected by subsoil water, even in minute quantities, finding its way into the many miles of sewers at the numerous junctions.

The effluent water maintains its reputation for purity as an effluent. The reports from the analytical chemist, however, on one occasion showed that the effluent from a new bed contained more albuminoid ammonia than usual. On inquiry it was found that the sample referred to was taken from one of the new beds, which received very little sewage. The effluent drain was laid below the level of subsoil water, which is of a putrid character, and would account for the adverse report. The subsoil drain has, however, lowered the level of ground water, and future analysis will not be affected by same. Copy of analyses is shown in Appendix.

The farm was visited by the Hon. the Premier, Sir George Dibbs, President of Health Board, and other gentlemen interested in public affairs, who expressed their satisfaction at the manner of disposal of the sewage, and the luxuriant growth of crops.

The number of houses connected with the Metropolitan and Suburban sewers, under the supervision of the Board's officers, is as under:—

	1890.	1891.	1892.	1893.	Total.
City	961	541	1,070	1,223	3,795
Suburban.....	3,804	3,578	3,448	3,437	14,267
					<u>18,062</u>
Number connected to City sewers, prior to passing of Act					18,000
					<u>3,6062</u>

The totals shown for city are principally reconstruction of old drainage and new buildings, erected in lieu of old ones. The analysis of house drainage for the year shows the number as under:—City, 1,223; Camperdown, 554; Glebe Point, 67; Erskineville (late Macdonaldtown), 113; Newtown, 1,208; Petersham, 81; Paddington, 358; Redfern, 173; Randwick, 30; Waterloo, 240; Waverley, 54; Woollahra, 214; North Sydney, 18; Total, 4,660.

Compulsory Drainage.

Owing to the depression and absence of power to arrange for payment of costs of work when carried out, the Board did not push the operations of the compulsory clause, except in cases where consideration of public health necessitated action being taken. Legislative power will shortly be granted to the Board to arrange with owners of property to defray cost of work by a system of deferred payments where the whole amount of demand cannot be discharged at once.

I have no doubt but that this system will be largely availed of by the poorer classes, and the general health of the suburbs will be correspondingly improved.

During the year 36 houses were connected under compulsory clause of the Act, viz.:—City, 4; Alexandria, 9; Paddington, 1; Redfern, 1; Woollahra, 21; total, 36.

The total number of houses dealt with since passing of the Act of 1889 and cost per house is shown as under:—

	1890.	1891.	1892.	1893.	Total.
City		19	6	4	59
Suburbs		245	240	32	517
Cost per house		£14 14s.	£12 10s.	£18 14s.	
		Average cost.....	£15 6s.		

The cost for 1893 is higher than previous years, owing to the fact that the excavation was chiefly rock. Drainage

ENGINEER'S REPORT—*continued.*

Drainage Plans.

The number of drainage plans, prepared with fees paid, is shown as under :—

	1890.	1891.	1892.	1893.	Total.
Plans prepared	2,212	2,303	2,485	2,669	9,669
Fees paid ...	£1,033	£1,088 15s.	£1,087 13s. 6d.	£1,106 7s. 6d.	£4,315 16s.

Drainage Certificates.

The number of certificates issued to the public in connection with house drainage, since inception of the system, is, viz. :—

	1891.	1892.	1893.	Total.
City	251	272	265	788
Suburbs.....	1,140	843	1,148	3,091
Grand total				3,879

The demand on the part of owners and architects for the certificates is increasing, in fact it is the rule now that persons employing licensed drainers specify that payment will only be made on production of Board's certificate. The system is gradually commending itself to the public, as they recognise the protection afforded by the certificates.

Defective Drainage.

The work of examining defective drainage in the city is being pushed on, the inspectors served 866 first, and 477 final notices to reconstruct or repair, of the number, 526 were attended to. The further Amending Act, will enable the Board to deal with recalcitrant owners or those not in a position to incur the expense of alterations. There were 327 chokages in private drains in the city system reported, of which only 14 were connected to sewers constructed under the Board, the obstructions being in the intercepting trap were easily removed without expense. In other cases drains had to be dug up to remove obstructions, grease and roots of trees forming the greater part of same. Notices are always served to "reconstruct" in such cases.

A large number of drains were smoke tested, and in every instance serious defects were found which endangered the health of the occupants.

The suburban inspector reports 79 chokages in private drains connected under Board, these were found to be due to carelessness on the part of the occupants, as the fault existed at yard gullies or "intercepting" traps. The number is small compared to the houses connected to suburban sewers, viz., 14,267, or '55 per cent.

Sanitary Plumbing.

The work of this sub-branch still continues to increase, and it is satisfactory to note that the public are becoming more educated in this important matter, and the experience of the Department is that what was considered a short time back as an unnecessary demand by the Board is now looked upon as a necessary provision. I attribute a good deal of this change to the tact and intelligence exercised by the Board's inspectors in dealing with the public; their advice is now sought in such matters where formerly the plumbers generally were consulted.

The testing of all new soil pipes in position is still carried on, and many serious defects have been discovered before work was passed. The hydrostatic test detects faults that no other system could, some of the defects found consists of honey-combed cast-iron pipes, defective caulking of joints, and in one case the lead had been dressed into branch pipe under water-closet instead of soldering; this part being out of sight could not have been discovered by other means.

The inspectors' notes of inspection of some of the city buildings reveal a state of things hardly creditable. These notes are of interest to show the necessity of careful inspection of places used for residential purposes.

In one case, in one of the oldest residential hotels, the following defects were found: lead traps of W.C's with slip joints into lead soil pipe, in another place the branch from soil pipe was partly open, the soil pipe was made of galvanized iron and completely eaten away, and a disused closet was found with the water seal evaporated—this was situated near a bed-room. In a large boarding-house a 4-inch cast-iron soil pipe laid diagonally near bed-room windows with an opening on top of pipe 18 inches long and 1 inch wide.

In a block of buildings where typhoid fever had broken out, the soil pipe was found to be of galvanized iron, unventilated and whole of sanitary fittings in a very bad state. In a large assembly-room, the soil pipe inside building was found to have open joints; on several occasions the drain was choked and sewage backed up and leaked through open joints. Many cases have been found where plumbers have fitted the V.P. on the house side of bath trap, and vent pipes from W.C's have been carried up and left open between ceiling and roof. The foregoing are only a few of the cases which have been dealt with, and clearly shows the necessity of proper supervision in this important work.

During the year, 347 notices were served to alter defective sanitary fittings, 297 of which were attended to by owners.

The number of houses inspected was 3,960. Number of certificates issued, 1,387, and 180 soil pipes tested.

Among the various large jobs supervised by Board's inspectors are :—Sydney Hospital, Royal Mint, City Bank, Bank of New South Wales, St. Andrew's College, and Women's College. The class of work executed in the above places is highly creditable to the licensed plumbers carrying out same, and will compare favorably with like work anywhere.

Ventilation

ENGINEER'S REPORT—*continued.*

Ventilation of Sewers.

The various shafts erected in connection with main and subsidiary sewers have been tested with satisfactory results; the returns are shown in tables referred hereto.

Several heavy gales occurred during the year, and, with exception of two instances, no damage was done to the many shafts erected, although some are in very exposed positions.

Complaints have been made as to bad smells from the shafts, but on being investigated, and air of shaft tested, the cause was found to be due to other causes.

The special shafts connected with chimney stacks have been found efficient; the following table shows results:—

	Cubic feet per hour.			Remarks.
	1891.	1892.	1893.	
	ft.	ft.	ft.	
Tooth's Brewery, 9-in. connection.....	40,286	29,348	42,064	.....
Cameron's Tobacco Factory, 6-in. connection.....	5,369	7,068	5,971	Exhaust steam used.
Cornwell's Brewery, 6-in. connection.....	4,522	7,265	5,971	do
New York & Brooklyn Tobacco Factory, 6 in. connection.....	7,030	7,418	7,147	.....
Old Pumping Station, Crown-street.....	6,857	27,456	1,610	.....
New Engine House.....	4,444	1,507	3,124	.....
Horden's Factory, Redfern.....	.....	.....	8,154	.....

Owing to funds not being available, the work of erecting vent shafts made very little progress during the year, and shafts were only erected in isolated cases, or where the health of the district was threatened.

The water sprays which were fixed are acting satisfactorily, and, if funds are available for 1894, the number will be increased. A contract has also been prepared for proposed operations in 1894, and it is to be hoped that funds will be placed at the Board's disposal for this important part of the sewerage system. The necessity for the shafts is now generally recognised, and the Board meets with little opposition in attaching them to buildings. If the owner objects to the site fixed by Board's officers, a concession in the way of slight alteration of site removes the difficulty. The erection of the shafts requires the exercise of tact and knowledge of the principles of ventilation on the part of the Board's officers, and so far I am pleased to state that the officers have succeeded.

Watersprays.

	Cubic feet per hour.	
	1891.	1892.
Police Barracks, 16-in. induct.....	58,492	.....
Busby's Bore, induct.....	11,284 (Cover on)	106,677 (Cover off.)
Obelisk, Hyde Park Exhaust.....	101,461	97,811

Expenditure out of Loan Votes.

The expenditure out of loan votes for the year was by contracts, £18,063 7s. 8d. In addition to this amount, small extensions were carried out by Board's staff to the amount of £151 1s. 6d.; total, £18,214 9s. 2d. Owing to stoppage of funds, the whole of the inspecting staff, with one exception, was dispensed with as contracts were completed.

Drawing Office.

The work performed in the drawing office and heliographing rooms shows a considerable increase during the year, as compared with previous years, as shown as under.

RETURN of work executed in Drawing office and Heliographing and Photographing rooms:—

	1890.	1891.	1892.	1893.	Total.
Drawings prepared.....	95	200	135	90	520
Tracings prepared.....	325	172	281	220	998
Drawings mounted.....	1,086	1,609	1,553	969	5,277
Helotypes printed.....	610	1,061	875	927	3,473
Photographs printed.....	.....	.....	.....	124	124
Record Plans charted.....	.....	.....	.....	65	65

ENGINEER'S REPORT—*continued.*

Diagrams.

Diagrams of death-rates, &c., are given—this question, however, is dealt with in Medical Officer's Report.

Diagrams of temperature of surface and in sewers 10 ft. and 40 ft. respectively, also humidity.

Diagrams of detail work as carried out under certain conditions—in continuation of previous plates.

Diagrams showing cultivation beds and filtering tanks on sewerage farms.

The information and returns supplied by the Government Astronomer and Government Statistician have been of greatest assistance to the Department, and I take this opportunity of returning my thanks for the courtesy.

The change in the administration of the Engineering Department by having one head engineer has necessarily led to more work devolving upon the assistant engineers, and I wish to record my thanks to these gentlemen, as well as to the draftsmen, district engineers, and inspectors, for their cordial assistance in the discharge of the various duties of the service.

I have, &c.,

J. M. SMALL, M. Inst. C.E.,

Engineer for Sewerage, Acting Engineer for Water Supply.

APPENDIX.

Government Laboratory, Sydney, 18 July, 1893.

RESULTS of Analysis of Potable and Polluted Waters, Effluents from the Sewage Farm, Botany.

	Results expressed in	
	Grains per Gallon.	Parts per Million.
Appearance in the standard Two-foot tubes... .. Brown and turbid, but not unpleasant... ..	.....	.....
Chlorine as Chlorides	{ 1 3·9	.....
Phosphates from Animal Impurity	{ 2 7·5	.....
Nitrogen as Nitrates and Nitrites.....	.....	.....
Total Solid Residue, dried at 220°.....	{ 1 21·84	.....
Free Ammonia	{ 2 29·54	.....
Free Ammonia	{ 1	2·6
Oxygen absorbed in 15 min.	{ 2	8·0
Albuminoid Ammonia	{ 1	6·68
Oxygen absorbed in 3 hours	{ 2	5·80
.....	{ 1	1·30
.....	{ 2	·50
.....	{ 1	14·00
.....	{ 2	12·00

General Observations on the Character of the above Effluents.—Although heavily charged with organic matter undergoing oxidation, these effluents may, in my opinion, be allowed to flow into tidal rivers or water-courses not used as sources of town water supply.

WILLIAM HAMLET,
Government Analyst.

ENGINEER'S REPORT—continued.

APPENDIX B.

SEWERS and Storm-water Drains constructed by the Board.
SEWERS.

	U shaped.			Circular					3' 3" x 2' 2"	3' x 2'	Pipes						Total length in feet.			
	4' 6" x 2'	4' x 1' 6"	3' x 2'	5' 6"	4'	3' 6"	3'	2' 6"			2' 4"	24"	21"	18"	16"	12"		9"	6"	
Alexandria																106	106			
Camperdown																				
City Deep Sewers															980		980			
City														96	1,899	82	2,077			
Darlington																				
Glebe													460	7,445		7,905				
Macdonaldtown																				
Newtown														566	245	811				
North Sydney																				
Paddington														2,141	60	2,201				
Petersham														1,493		1,493				
Randwick															662	662				
Redfern															276	276				
Waterloo															60	60				
Waverley														847	952	1,799				
Woollahra											75		164	2,573	1,805	4,617				
1893 Totals											75		720	17,944	4,248	= 22,987 lin. ft.	Pipe sewers, or 4.35 miles.			
1892 do										724			1,678	3,974	107,885	4,532	= 118,793 "	" " 22.50 "		
1891 do										2,776	688	309	449	7,345	101,157	954	= 113,678 "	" " 21.53 "		
1890 do										1,220	660	1,227	302	1,024	1,559	2,350	39,890	961	= 49,202 "	{ Concrete sewers, 1,880 ft. = 0.36 "
																			{ Pipe " 47,322 ft. = 8.97 "	
STORM-WATER DRAINS.																				
1893 Totals													158	363			521 lin. ft.	Pipe sewers, or .10 mile.		
1892 do	38	528		429		478	841	310	400			1,162	41	515	1,168	577		1,300	7,787 "	{ 3,024 ft. concrete sewers, or .57 "
1891 do																				4,763 ft. pipe " .90 "
1890 do			298	696	822			924				782		47	260	239				Nil.
																			{ 2,740 ft. concrete sewers, or .52 "	1,328 ft. pipe " .25 "

THOS. GRIFFITHS,
Assistant Engineer.

ENGINEER'S REPORT—continued.

APPENDIX C.
VENTILATION OF SEWERS.
RECORD OF TESTS.

538 Exhaust Shafts.								251 Induct Shafts.							
Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of Test.	Average Wind in Miles per Hour.	Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of each Test.	Average Wind in Miles per Hour.
1891	500	5,074,001	990,292	23,911,108	167,377,056	14 min.	9.62	1891	240	3,493,572	685,303	16,463,112	115,241,784	14 min.	9.62
1892	515	5,031,370	1,105,719	25,537,256	185,760,792	16 "	13.05	1892	241	3,863,800	758,657	18,207,708	127,454,376	18 "	13.95
1893	538	5,014,550	1,102,416	26,457,934	185,205,888	30 "	8.72	1893	251	3,844,163	754,901	18,115,224	126,806,568	30 "	8.72

Average Work of One Exhaust Shaft.								Average Work for One Induct Shaft.									
Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage to Wind.	lb. pressure per sq. foot.	Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage to Wind.	lb. pressure per sq. foot.
1891	10,148.0	1,982	47,778	334,446	3.77	9.62	39.18	0.0710	1891	14,555	2,858	68,592	480,144	2.75	9.62	28.62	0.0378
1892	10,034	2,147	51,528	360,696	2.07	13.05	14.83	0.0214	1892	16,032	3,148	75,552	528,804	3.03	13.95	21.72	0.0459
1893	10,436	2,049	49,170	344,232	1.97	8.72	22.50	0.0194	1893	15,315	3,007	72,168	505,176	2.90	8.72	33.25	0.0420

DISTRICT OF PYRMONT.

Exhaust Shafts.								Induct Shafts.							
Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of Test.	Average Wind in Miles per Hour.	Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of each Test.	Average Wind in Miles per Hour.
1891	37	517,484	101,608	2,438,592	17,070,144	9 min.	12.16	1891	22	433,501	85,118	2,047,632	14,333,424	9 min.	12.16
1892	36	380,325	76,592	1,836,768	12,857,876	15 "	10.83	1892	21	262,360	51,514	1,236,346	8,654,852	15 "	10.83
1893	40	418,300	82,133	1,971,192	13,798,344	30 "	6.75	1893	21	217,222	42,651	1,023,021	7,165,368	30 "	6.75

Average Work of One Exhaust Shaft.								Average Work for One Induct Shaft.									
Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage to Wind.	lb. pressure per sq. foot.	Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage to Wind.	lb. pressure per sq. foot.
1891	13,985	2,746	65,904	461,328	2.64	12.16	21.71	0.0348	1891	10,750	3,878	93,072	651,504	3.74	12.16	30.75	0.0699
1892	10,738	2,168	50,592	354,144	2.03	10.83	18.74	0.0266	1892	12,517	2,457	58,968	412,776	2.87	10.83	18.51	0.0280
1893	10,467	2,053	49,272	344,904	1.93	6.75	29.55	0.0196	1893	12,953	2,543	61,032	427,224	2.45	6.75	36.56	0.0300

DISTRICT OF ALEXANDRIA.

Exhaust Shafts.								Induct Shafts.							
Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of Test.	Average Wind in Miles per Hour.	Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of each Test.	Average Wind in Miles per Hour.
1891	12	184,502	36,227	869,448	6,086,136	10 min.	10.39	1891	7	182,347	31,877	765,048	5,355,336	10 min.	10.39
1892	14	50,120	11,098	278,592	1,950,144	8 "	5.01	1892	6	23,440	4,096	119,350	839,100	8 "	5.04
1893	14	201,900	39,400	947,184	6,630,288	27 "	13.20	1893	6	155,390	30,591	734,134	5,139,288	27 "	13.20

Average Work of One Exhaust Shaft.								Average Work for One Induct Shaft.									
Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage to Wind.	lb. pressure per sq. foot.	Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage to Wind.	lb. pressure per sq. foot.
1891	15,375	3,019	72,456	507,192	2.91	10.39	28.00	0.0423	1891	23,193	4,554	109,296	765,072	4.39	10.39	42.25	0.0963
1892	4,223	820	19,896	139,272	0.89	5.04	17.87	0.0092	1892	4,240	832	19,968	139,776	0.80	5.04	15.87	0.0032
1893	14,357	2,818	67,632	473,424	2.71	12.80	21.17	0.0337	1893	25,966	5,093	122,362	850,464	4.91	12.80	38.36	0.1205

DISTRICT OF BLACKFRIARS.

Exhaust Shafts.								Induct Shafts.							
Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of Test.	Average Wind in Miles per Hour.	Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of each Test.	Average Wind in Miles per Hour.
1891	47	400,496	97,487	2,339,688	16,377,816	20 min.	7.80	1891	30	464,145	91,135	2,187,240	15,310,680	20 min.	7.80
1892	51	495,380	97,267	2,334,402	16,340,856	15 "	12.28	1892	25	338,070	66,497	1,595,928	11,171,496	15 "	12.28
1893	49	633,763	124,439	2,990,536	20,905,752	35 "	8.20	1893	25	426,712	83,735	2,010,840	14,076,800	35 "	8.20

Average Work of One Exhaust Shaft.								Average Work for One Induct Shaft.									
Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage to Wind.	lb. pressure per sq. foot.	Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage to Wind.	lb. pressure per sq. foot.
1891	10,562	2,074	49,776	348,432	2.00	7.80	25.64	0.0200	1891	15,467	3,037	72,888	510,216	2.92	7.80	37.43	0.0426
1892	10,200	2,003	48,072	336,504	1.93	12.28	15.71	0.0186	1892	14,662	2,878	69,072	483,504	2.77	12.28	22.33	0.0388
1893	12,934	2,529	60,136	420,552	2.44	8.20	29.75	0.0297	1893	17,068	3,361	80,424	562,968	3.23	8.20	39.30	0.0521

ENGINEER'S REPORT—continued.

DISTRICT OF WATERLOO.

Exhaust Shafts.								Induct Shafts.									
Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of Test.	Average Wind in Miles per Hour.	Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of each Test.	Average Wind in Miles per Hour.		
1891	43	549,651	106,157	2,547,708	17,834,376	12 min.	10 03	1891	15	329,722	61,741	1,553,784	10,876,488	12 min.	10 03		
1892	43	562,080	110,369.5	2,648,652	18,540,584	12 "	13 56	1892	14	311,280	61,116	1,466,784	10,267,488	12 "	13 56		
1893	43	624,412	122,693	2,942,473	20,397,304	36 "	12 50	1893	16	483,360	95,300	2,287,200	16,010,400	30 "	12 50		
Average Work of One Exhaust Shaft.								Average Work for One Induct Shaft.									
Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage to Wind.	lb. pressure per sq. foot.	Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage to Wind.	lb. pressure per sq. foot.
1891	12,609	2,408	50,232	414,624	2 38	10 03	22 73	0 0253	1891	21,091	4,310	103,581	725,098	4 16	10 03	43 47	0 0905
1892	13,071	2,567 3	61,615	431,305	2 47	13 56	18 21	0 0305	1892	22,233	4,365 4	104,770	733,300	4 21	13 56	31 05	0 0396
1893	14,521	2,351	68,424	478,968	2 75	12 50	22 00	0 0378	1893	30,335	5,956	142,944	1,000,608	5 74	12 50	45 92	0 1046

DISTRICT OF LACROZIA CREEK.

Exhaust Shafts.								Induct Shafts.									
Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of Test.	Average Wind in Miles per Hour.	Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of each Test.	Average Wind in Miles per Hour.		
1891	50	425,128	83,474	2,003,376	14,023,632	12 min.	7 22	1891	35	142,826	28,014	673,036	4,711,392	12 min.	7 22		
1892	50	511,120	100,358 4	2,408,601 6	16,800,211 2	16 "	12 13	1892	10	233,430	45,894	1,100,016	7,700,112	16 "	11 70		
1893	52	338,870	66,637	1,596,888	11,178,216	22 "	4 73	1893	15	149,350	29,324	703,770	4,926,432	22 "	4 73		
Average Work of One Exhaust Shaft.								Average Work for One Induct Shaft.									
Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage to Wind.	lb. pressure per sq. foot.	Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage to Wind.	lb. pressure per sq. foot.
1891	8,500	1,669	40,056	280,392	1 00	7 22	22 16	0 0128	1891	9,618	1,860	44,856	313,092	1 30	7 22	24 92	0 0162
1892	9,854 33	1,922 8	46,442 33	325,096 60	1 36	12 13	15 34	0 0176	1892	15,362 5	3,014 5	72,848	500,436	2 40	11 70	24 67	0 0434
1893	6,516	1,279	30,696	214,872	1 23	4 73	26 00	0 0975	1893	9,956	1,954	46,896	333,272	1 88	4 73	39 74	0 0176

DISTRICT OF STRAWBERRY HILLS.

Exhaust Shafts.								Induct Shafts.									
Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of Test.	Average Wind in Miles per Hour.	Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of each Test.	Average Wind in Miles per Hour.		
1891	83	914,744	179,610	4,310,640	30,174,480	8 min.	9 07	1891	43	575,024	112,906	2,709,744	19,068,208	8 min.	9 07		
1892	84	883,983	173,393 7	4,161,449	29,130,143	17 "	15 90	1892	50	644,220	126,492 8	3,035,827	21,250,790	17 "	14 73		
1893	87	961,185	188,728	4,529,472	31,706,304	36 "	9 46	1893	52	714,683	140,328	3,367,872	23,575,104	36 "	9 46		
Average Work of One Exhaust Shaft.								Average Work for One Induct Shaft.									
Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage to Wind.	lb. pressure per sq. foot.	Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage to Wind.	lb. pressure per sq. foot.
1891	11,021	2,164	51,936	363,552	2 08	9 07	20 36	0 0216	1891	13,374	2,626	63,024	441,168	2 53	9 07	25 37	0 3200
1892	10,421 16	2,035 68	48,608 33	342,084 23	1 90	14 73	14 04	0 0204	1892	12,866 23	2,626	60,630 33	424,426 60	2 43	14 73	17 57	0 0257
1893	11,048	2,169	52,056	364,392	2 30	9 46	22 00	0 0218	1893	13,744	2,638	64,752	453,264	2 60	9 46	27 48	0 0338

DISTRICT OF SURRY HILLS.

Exhaust Shafts.								Induct Shafts.									
Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of Test.	Average Wind in Miles per Hour.	Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of each Test.	Average Wind in Miles per Hour.		
1891	71	514,316	100,936	2,423,664	16,965,648	16 min.	6 06	1891	39	476,089	93,608	2,246,352	16,724,464	10 min.	6 06		
1892	67	814,720	165,861	3,980,664	27,804,948	16 "	13 37	1892	32	649,550	127,529	3,060,936	21,426,552	16 "	13 37		
1893	67	676,700	132,870	3,188,880	22,322,160	32 "	9 75	1893	32	568,700	99,883	2,397,192	16,780,344	32 "	9 75		
Average Work of One Exhaust Shaft.								Average Work for One Induct Shaft.									
Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage to Wind.	lb. pressure per sq. foot.	Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage to Wind.	lb. pressure per sq. foot.
1891	7,242	1,422	34,128	233,896	1 37	6 06	22 60	0 0098	1891	12,217	2,390	57,576	403,032	2 31	6 06	38 11	0 0266
1892	12,236 75	2 412 50	57,900 25	405,301 75	2 32	13 37	17 35	0 0271	1892	10,445 75	3,317 97	91,431 5	641,426 5	3 67	13 37	28 31	0 0691
1893	10,100	1,933	47,592	333,144	1 91	9 75	19 58	0 0182	1893	76 397	3,121	74,994	524,328	3 01	9 75	30 27	0 0453

ENGINEER'S REPORT--continued.

DISTRICT OF PADDINGTON.

Exhaust Shafts.								Induct Shafts.									
Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of Test.	Average Wind in Miles per Hour.	Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of each Test.	Average Wind in Miles per Hour.		
1891	60	611,255.9	120,026	2,880,624	20,164,363	10 min.	8.00	1891	30	532,699	104,576	2,500,824	15,568,708	10 min.	8.00		
1892	69	603,710	127,238	3,207,312	23,081,181	22 "	17.00	1892	20	591,000	116,161	2,737,804	19,515,048	22 "	17.00		
1893	60	648,710	127,374	3,056,976	21,398,832	23 "	10.10	1893	28	421,050	82,819	1,938,376	13,918,032	23 "	10.10		
Average Work of One Exhaust Shaft.								Average Work for One Induct Shaft.									
Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage to Wind.	lb. pressure per sq. foot.	Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage to Wind.	lb. pressure per sq. foot.
1891	0.258	1.818	40,632	305,424	1.75	0.02	25.27	0.0153	1891	17.754	3.486	83,664	585,618	3.36	0.02	48.48	0.0564
1892	11,784	2,304	55,296	387,072	2.21	17.61	14.24	0.0254	1892	20,813.664	4,086.66	98,080	690,560	3.94	19.00	22.99	0.0788
1893	10,811.83	2,022	48,528	339,696	2.04	10.10	20.19	0.0208	1893	15,969	2,958	70,992	496,944	2.85	10.10	28.21	0.0400

DISTRICT OF REDFERN.

Exhaust Shafts.								Induct Shafts.									
Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of Test.	Average Wind in Miles per hour.	Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of each Test.	Average Wind in Miles per hour.		
1891	74	728,398	143,021	3,432,504	24,027,528	17 min.	7.57	1891	28	297,412	58,397	1,401,528	9,810,696	17 min.	7.57		
1892	73	767,480	148,731	3,509,544	24,980,808	13 "	11.56	1892	22	439,750	96,162	2,307,388	16,155,216	13 "	11.56		
1893	68	621,330	121,998	2,927,952	20,495,064	23 "	7.40	1893	28	395,080	77,573	1,861,752	13,032,264	23 "	7.40		
Average Work of One Exhaust Shaft.								Average Work for One Induct Shaft.									
Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage to Wind.	lb. pressure per sq. foot.	Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage to Wind.	lb. pressure per sq. foot.
1891	0.830	1.932	46,266	323,876	1.86	7.57	24.57	0.0172	1891	10,618	2,083	50,040	350,280	2.01	7.57	29.55	0.0202
1892	10,097.25	1,932.73	47,636	338,102	1.90	11.56	17.80	0.0186	1892	18,931.5	3,727.5	89,460	628,230	3.59	11.56	32.37	0.0710
1893	0,137	1,791	43,056	301,392	1.73	7.40	23.37	0.0149	1893	14,110	2,770	66,480	465,360	2.67	7.40	30.03	0.0356

DISTRICT OF WOOLLAHRA.

Exhaust Shafts.								Induct Shafts.									
Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of Test.	Average Wind in Miles per Hour.	Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of each Test.	Average Wind in Miles per Hour.		
1891	17	141,054	27,096	664,724	4,653,068	15 min.	7.62	1891	11	78,283	15,371	363,904	2,682,328	15 min.	7.62		
1892	18	172,320	33,835	812,040	5,684,280	20 "	18.00	1892	10	134,320	26,374	632,976	4,430,832	20 "	18.00		
1893	20	95,250	18,696	448,704	3,140,928	12 "	6.00	1893	11	81,103	15,924	382,176	2,675,232	12 "	6.00		
Average Work of One Exhaust Shaft.								Average Work for One Induct Shaft.									
Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage to Wind.	lb. pressure per sq. foot.	Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage to Wind.	lb. pressure per sq. foot.
1891	8.296	1,029	39,096	273,672	1.57	7.62	20.60	0.0123	1891	7,114	1,397	33,528	234,696	1.34	7.62	17.58	0.0089
1892	9,607	1,807	44,304	318,656	1.80	18.00	10.00	0.0162	1892	13,432	2,637	63,258	443,016	2.54	18.00	14.11	0.0322
1893	4,761	334	22,416	156,912	0.90	6.00	15.00	0.0090	1893	7,373	1,447	34,728	243,996	1.39	6.00	23.16	0.0096

DISTRICT OF NEWTOWN, PETERSHAM, DARLINGTON, NORTH SYDNEY.

Exhaust Shafts.								Induct Shafts.									
Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of Test.	Average Wind in Miles per Hour.	Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of each Test.	Average Wind in Miles per Hour.		
1893	20	236,060	46,830	1,112,400	7,786,800	25 min.	10.50	1893	13	103,000	37,895	909,480	6,368,360	25 min.	10.50		
Average Work of One Exhaust Shaft.								Average Work for One Induct Shaft.									
Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage to Wind.	lb. pressure per sq. foot.	Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage to Wind.	lb. pressure per sq. foot.
1893	11,803	2,317	55,693	389,256	2.23	10.50	21.23	0.0248	1893	14,846	2,915	69,060	489,720	2.81	10.50	26.76	0.0394

ENGINEER'S REPORT—*continued.*

CITY OF SYDNEY.

Exhaust Shafts.								Induct Shafts.									
Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of Test.	Average Wind in Miles per Hour.	Year.	Number of Shafts Tested.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Average Time of each Test.	Average Wind in Miles per Hour.		
1892	19	256,530	50,374	1,208,976	8,402,832	28 min.	19 11	1892	10	183,200	35,971	803,304	6,043,123	23 min.	19-11		
1893	18	159,000	31,219	749,256	5,244,792	23 "	6-50	1893	4	41,200	8,089	194,136	1,358,952	23 "	6 50		
Average Work of One Exhaust Shaft.								Average Work for One Induct Shaft.									
Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage to Wind.	lb. pressure per sq. foot.	Year.	Lineal Feet per Hour.	Cubic Feet per Hour.	Cubic Feet per Day.	Cubic Feet per Week.	Miles per Hour.	Average Wind Velocity.	Percentage to Wind.	lb. pressure per sq. foot.
1892	12,798	2,513-5	60,324	422,268	2-42	15-78	16-05	0-0305	1892	13,633	2,676-5	64,236	449,652	2-57	15-78	15-73	0-0392
1893	8,833	1,734	41,616	291,312	1-67	6-50	25-69	0-0119	1893	10,360	2,022	48,528	339,696	1-95	6-50	30-00	0-0190

THOS. GRIFFITHS,
Assistant Engineer.

ENGINEER'S REPORT—*continued.*

Report on Repairs to City Sewerage.

The work carried out in the city is as follows, viz.:—

Subsidences.—Of these there have been thirty opened out and made good. In Upper William-street (1), Bowman-street (1), Goulburn-street (1), George-street West (2), Harmer-street (1), Riley-street (1), Roslyn Gardens (4), Forbes-street (7), Kellett-street (1), Mitchell-street, Glebe (2), O'Connor-street (1), Clare-street, Glebe (1), Campbell-street, Glebe (1), Lyndhurst-street, Glebe (1), Hunter-street (1), Bradley's-lane (1), Athlone-place (1), Kensington-street (1), and Turner-lane (1).

Choked Sewers.—Of these there have been nineteen cleared, viz.:—Kippax, Jerry, George, Wilmot, Barrack, Palmer, Brougham, Quay, Matthew, Mill, Napoleon, and Foster Streets, Wellington-place, Penny's, Moorgate, Buckland, and Schlinker's lanes, George-street North, and Bayswater Road.

Manhole Shafts Carried Up.—Of these fourteen have been carried to surface and No. 19 castings put on twelve of them, viz.:—Castlereagh-street (5), O'Connell-street (1), William Henry-street (1), Wentworth Park (3), Moorgate-lane (2), and Bridge-street (2).

Manhole Castings Raised.—Of these seventeen, viz.:—Chippendale (1), Loftus-street (1), Abercrombie-place (1), Brougham-street (1), Grafton-street (1), Liverpool-street (3), King-street (1), Wattle-street (1), Pymont Bridge Road (1), Pitt-street (1), and Bridge-street (2).

Broken Manhole Casting.—One over Bondi sewer in George-street replaced with a No. 19 casting.

New Manholes.—One shaft sunk and built in George-street, near Bathurst-stairs, and one built with brick in Gasworks yard, Kent-street, for public ventilator.

Sewers Extended.—Harvey-street, Pymont, 76 feet 6-in. earthenware, and in Domain-terrace there was laid 42 feet of 9-in. earthenware pipe sewer.

Broken Manhole Cover Stones.—One pair replaced in Bourke-street, Woolloomooloo.

Pipe Sewers Repaired.—In King-street, Burton-street, Hordern's-stairs, Hunter-street, Devonshire-street, and Grantham-street stairs.

Sewer Lifted and Re-laid.—Nine-inch pipe sewer in lane off Gloucester-street.

Gully Pipes Lifted and Re-laid.—On account City Council in Onslow-avenue.

Lamphole Castings.—Of these there were lowered in Hutchinson-street (2), Kent-street (2), and Moore-street (1); and there were raised in Phelp's-lane (1), and King-street (1).

Junctions.—Of these there were put in nine, viz.:—North-lane (1), Riley-lane (1), Victoria-street (1), William and Victoria Streets (1), George-street (1), Liverpool-street (1), Regent-street (1), Roslyn Gardens (1), and Barrack-street (1).

Public Ventilators.—For these there were pipes laid in Charles-street, Forest Lodge (Public School), Wattle-street, Park Road, District Court, Short-street, Mint, and Elizabeth-street.

Lamphole Castings put on in.—Omnibus-lane (1), Kent-street (1), Rapier-lane (1), George-street (1), Lane off Mill-street (1).

Wood Manhole Covers.—Of these there were replaced by iron castings 19, viz.:—Oxford-street, Busby's bore (3), Erskine-street (2), George-street (6), Quarry-street (1), Forbes-street (1), Duke-street (1), Brougham-street (1), Druit-street (1), Kent-street (1), and Pitt-street (2).

Old Iron Manhole Covers.—Six of these were replaced, viz.:—York and King Streets (1), Abercrombie-place (1), and Pitt-street (4).

Sewer Silt.—There has been removed from sewers and sent off by punt two thousand five hundred and forty tons during 1893.

Repairs to Sewers.—The repairs to the Tank Stream sewer were completed on 17th January, 1893; Bridge-street on 15th April, 1893; Loftus-street on 13th July, 1893; and the repairs to Castlereagh-street sewer, as I have already stated, will be completed about the second week in January, 1894.

The total amount of repairs for the year being as follows, viz.:—4,505 lineal feet invert = 10,212 superficial feet; and 4,556 lineal feet pointing = 33,072 superficial feet.

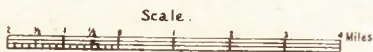
C. RHODES,
Inspector City Sewers, 30/12/93.

The Engineer for Sewerage.

[12 plans 10 photos.]

SERVICE RESERVOIRS

No	Name of Reservoir	Reduced Level of surface of Top Water over H.W.M.	Depth	Capacity in Gallons	Diameter of inlet pipe	Diameter of outlet pipe
1	Crown Street	141.00	15' 6"	3,250,000	42"	2' 20" / 1' 24"
2	Paddington	214.00	16' 6"	2,000,000	36"	1' 36" / 1' 24"
3	Woolahra	282.00	18' 0"	1,000,000	20"	20"
4	Waverley	360.00	20' 0"	1,087,000	18"	15"
5	Petersham	166.00	27' 0"	2,157,000	48"	42" / 18" / 18"
6	Ryde Hill	234.00	22' 0"	1,000,000	24"	18"
7	Chatswood No 1	370.00	32' 6"	1,500,000	24"	20"
8	do No 2	370.00	32' 6"	1,500,000	24"	20"



Prospect Reservoir

Catchment area above embankment 2400 acres
 Area of Surface of Water when full 1261 acres
 Total Contents (195 Contour) 10,812,313,000 gallons
 " " (170 " ") 4,867,970,000 " " " " " " "
 Total Quantity available for supply to Canal 6,744,343,000 gallons

Potts Hill Balance Reservoir

Dimensions at Top Water Level:
 Top Water Level 175.00 ft Length 1700 ft Width 834 ft
 Area 28 1/2 acres Available depth 15 ft 6 in
 Total Capacity 108,183,401 gallons
 Available Capacity 56,110,315 " " "
 Capacity of works above Prospect 158 mill* gallons daily
 Quantity of Water which Conduits will deliver (average since 1868) 95 mill* gallons daily

Water Levels

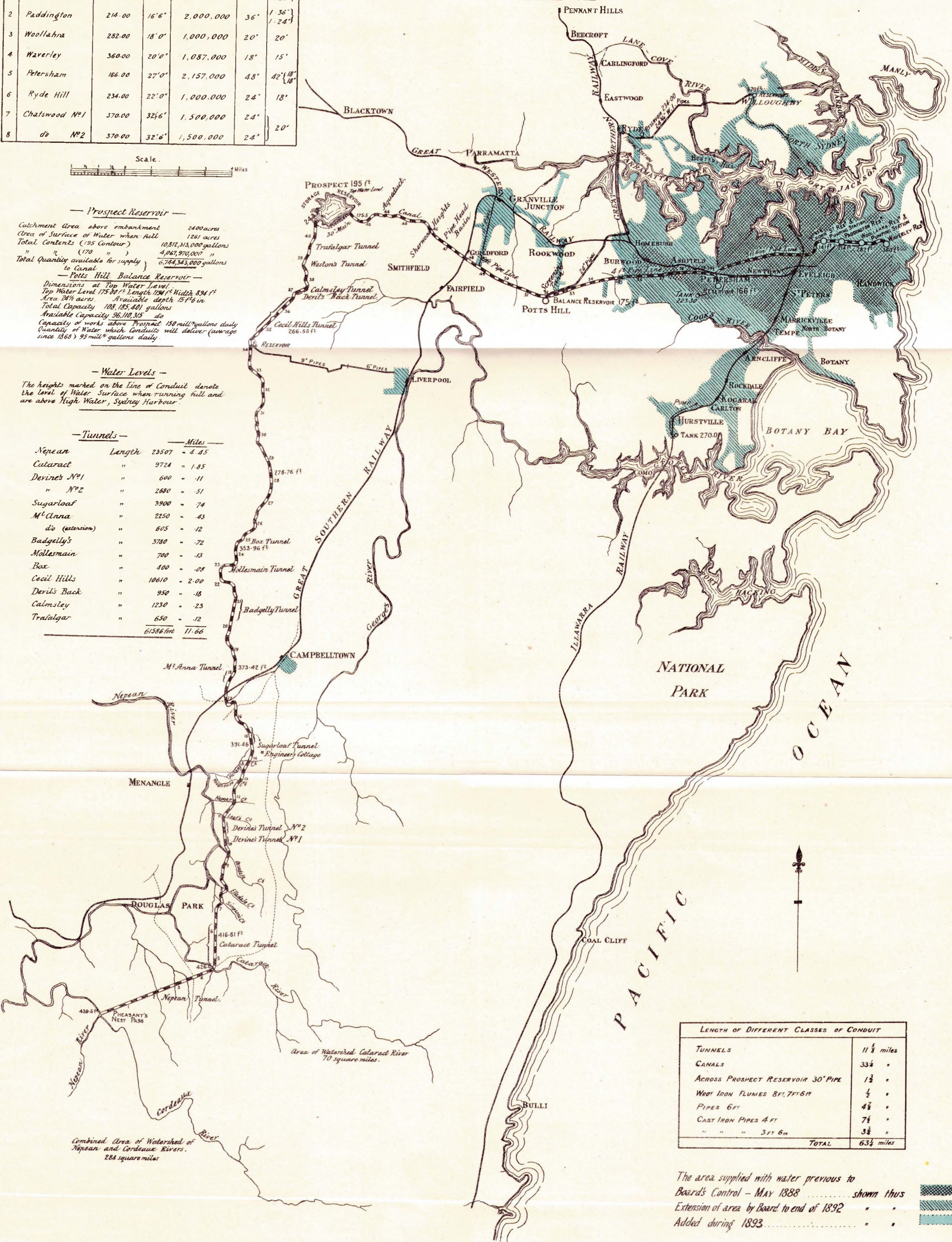
The heights marked on the Line of Conduit denote the level of Water Surface when running full and are above High Water, Sydney Harbour.

Tunnels

Name	Length	Miles
Nepean	23507	4.45
Cataract	9724	1.85
Devines No 1	600	.11
" No 2	2680	.51
Sugarloaf	3900	.74
McAnna	2250	.43
do (extension)	605	.12
Badgelly's	3780	.72
Mollesmain	700	.13
Box	400	.08
Cecil Hills	10610	2.00
Devils Back	950	.18
Calmsley	1230	.23
Trafalgar	650	.12
Total	61586 feet	11.66

Board of Water Supply & Sewerage, Sydney, N.S.W.

PLAN SHOWING THE LINE OF CONDUIT FROM THE CATCHMENT AREA TO THE CITY AND THE VARIOUS RESERVOIRS



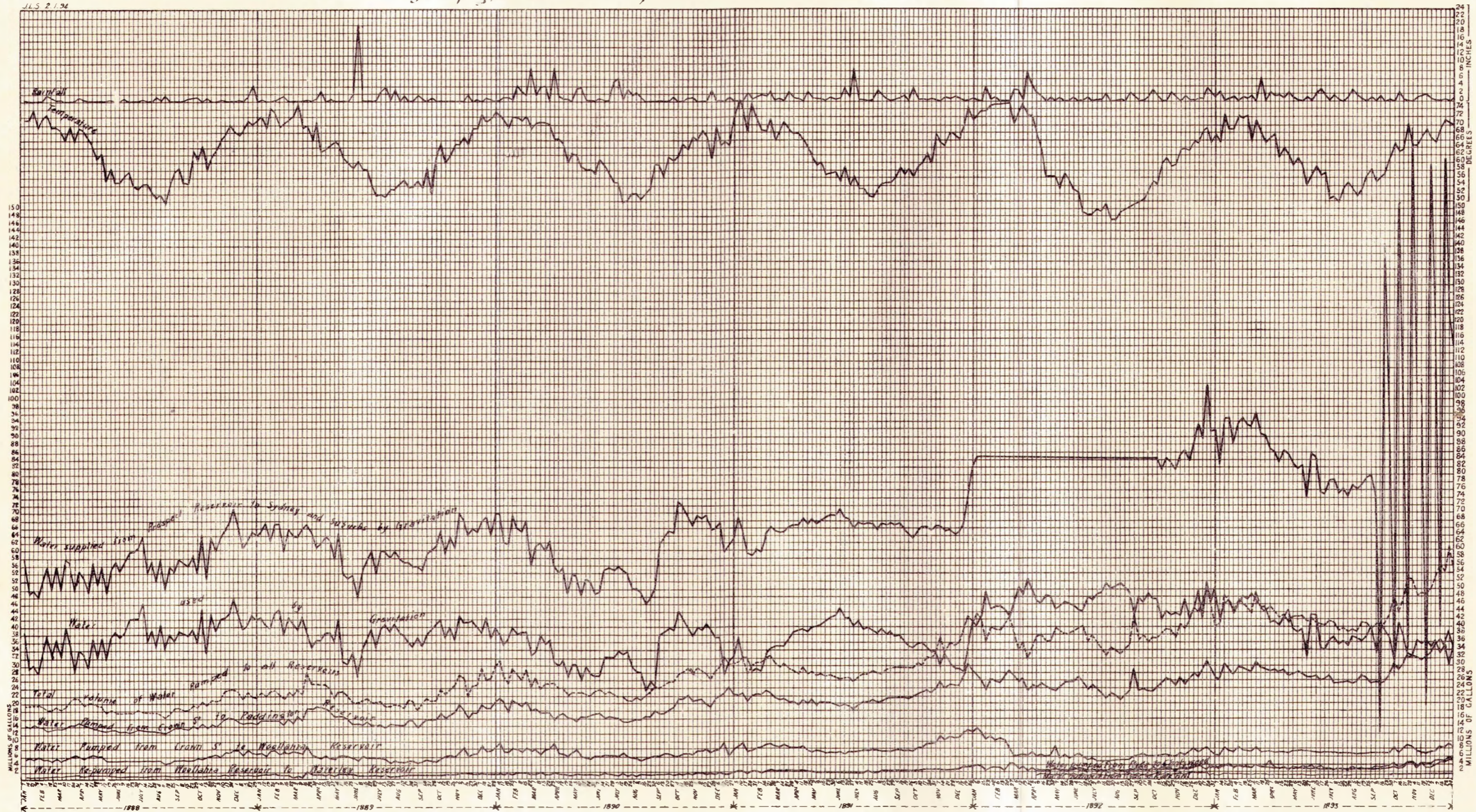
Combined Area of Watershed of Nepean and Cataract Rivers. 284 square miles.

LENGTH OF DIFFERENT CLASSES OF CONDUIT	
TUNNELS	11 1/2 miles
CANALS	33 1/2 "
ACROSS PROSPECT RESERVOIR 30" PIPE	1 1/2 "
WROUGHT IRON FLUMES 8' 7 1/2" H	1/2 "
PIPES 6"	4 1/2 "
CAST IRON PIPES 4"	7 1/2 "
" " " 3" 6"	3 1/2 "
TOTAL	63 1/2 miles

The area supplied with water previous to Board's Control - May 1888 shown thus [diagonal lines]
 Extension of area by Board to end of 1892 " " [horizontal lines]
 Added during 1893 " " [dotted lines]

BOARD OF WATER SUPPLY AND SEWERAGE.
 SYDNEY

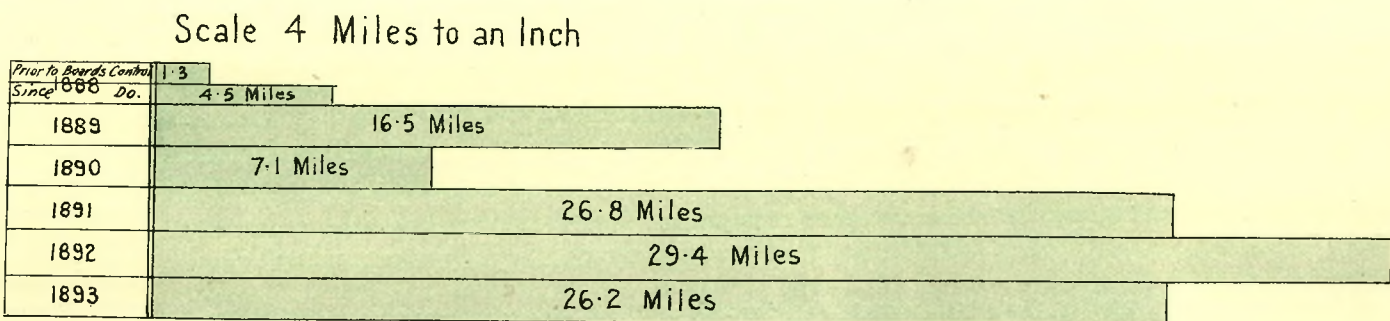
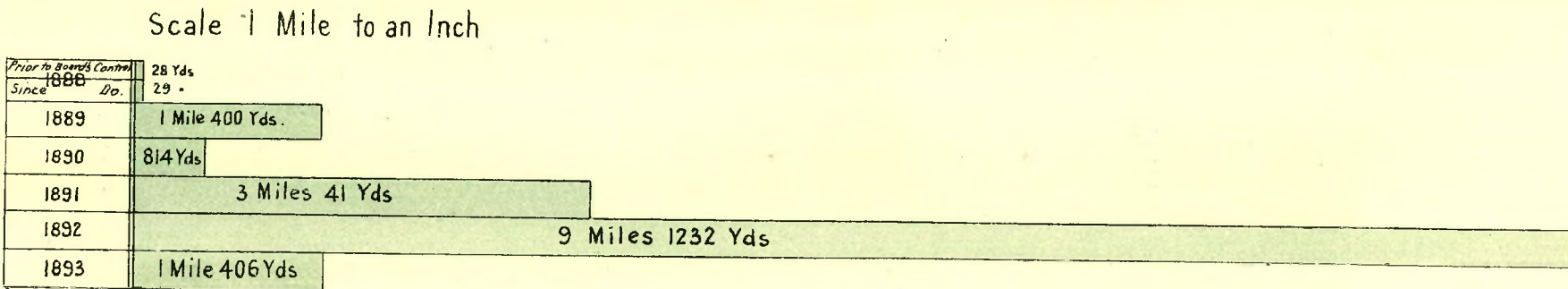
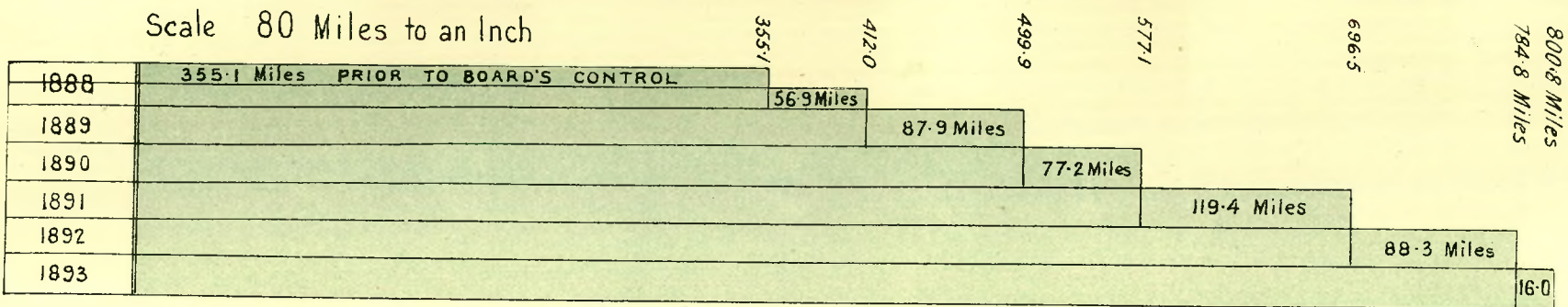
Table showing the Volume of Water supplied weekly from Prospect Reservoir by Gravitation to Sydney & Suburbs during the years 1888-1893 inclusively, the distribution of this water by Gravitation & by Pumping, the mean Shade Temperature and the Rainfall for each week.



Sig 176

DIAGRAMS

Showing the Total Mileage of Trunk Pumping & Reticulation Mains laid to the end of the Year also of Mains Removed & Cleaned during each Year from 1888 to 1893.



Laid

Removed

Cleaned

(Sigs 176-)

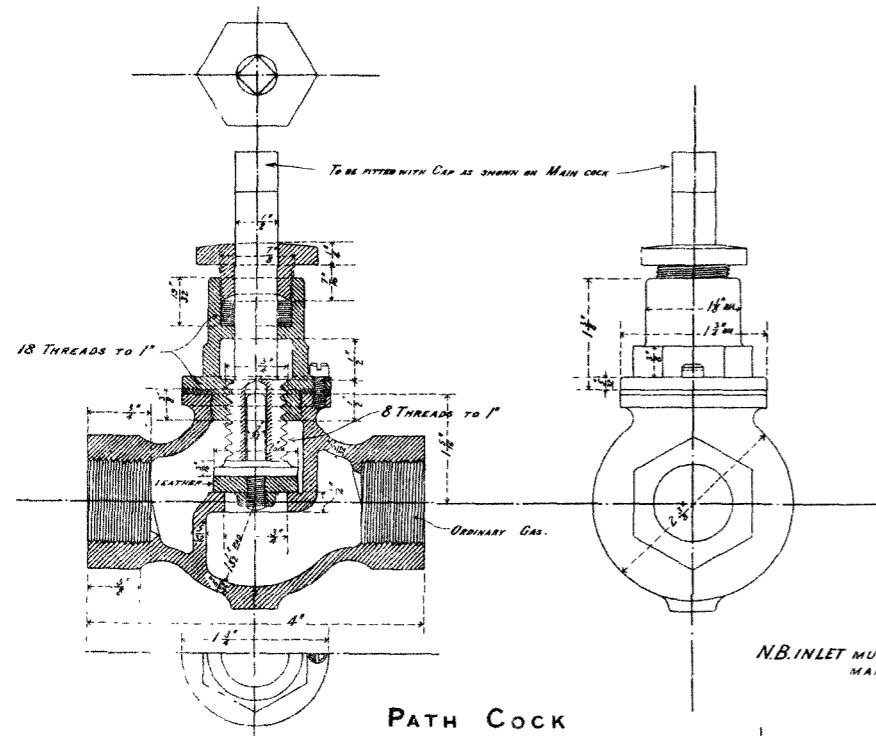
WATER MAIN RETICULATION
DIACRAM

*Shewing Mileage of Water Main Reticulation of the City of Sydney & Suburbs
Mains laid Prior to the Control of the Board shewn in Black
Do Since Do Do Do Blue*

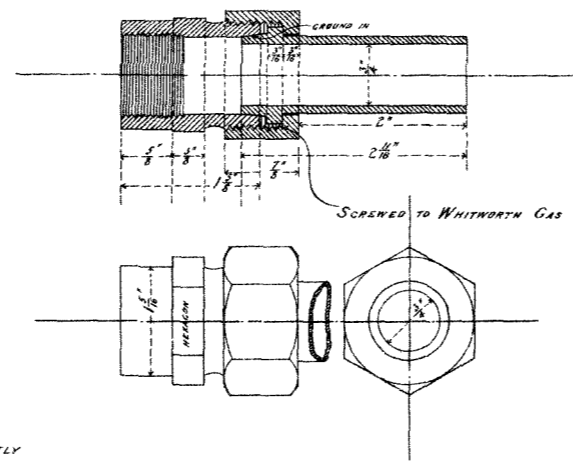
District	0	8	16	24	32	40	48	56	64	72	80	88	96	104	112	120	128	136	144	Miles 152	Prior to	Since	Totals	
Alexandria																					4.5	4.2	8.7	
Ashfield																						7.0	26.1	33.1
Auburn																							5.1	5.1
Balmain																						22.1	7.2	29.3
Botany																							4.4	4.4
Burwood																						10.0	12.6	22.6
Campbelltown																							5.2	5.2
Camperdown																						7.8	2.2	10.0
Canterbury																							5.5	5.5
Concord																						1.0	10.7	11.7
City of Sydney																						99.5	46.0	146.5
Darlington																						2.6	.6	3.2
Drummoyne																							7.2	7.2
Enfield																							6.5	6.5
Erskineville																						4.5	.9	5.4
Five Dock																							6.9	6.9
Glebe																						15.0	6.9	21.9
Granville																							15.6	15.6
Hunters Hill																							9.6	9.6
Hurstville																							13.4	13.4
Kogarah																							6.8	6.8
Leichhardt																						28.8	12.4	41.2
Liverpool																							12.8	12.8
Marrickville																						13.6	17.7	31.3
Mosman																							8.2	8.2
Newtown																						16.6	9.0	25.6
North Botany																							7.2	7.2
North Sydney																						17.8	22.4	40.2
Paddington																						11.6	6.3	17.9
Petersham																						13.8	10.0	23.8
Prospect & Sherrin																							1.15	1.15
Randwick																						8.8	12.2	21.0
Redfern																						16.8	7.1	23.9
Richmond																						9.0		9.0
Rockdale																							20.8	20.8
Rookwood																							3.6	3.6
Ryde																							6.2	6.2
St. Peters																						2.25	7.1	9.35
Strathfield																						3.8	6.1	9.9
Waterloo																						6.8	5.6	12.4
Waverley																						12.0	6.6	18.6
Woollahra																						11.25	14.2	25.45
Willoughby																							14.7	14.7
J.L.S. 20/194.																						346.9	415.75	762.65

(Sig 176)

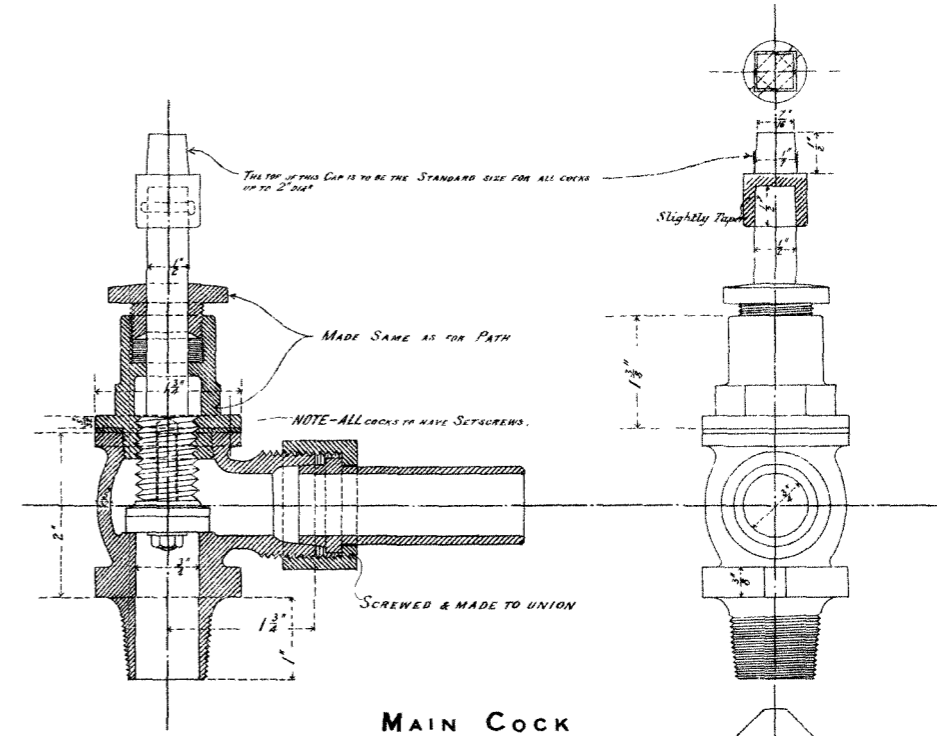
N.B. The above does not include Trunk or Pumping Mains or Repairs etc.



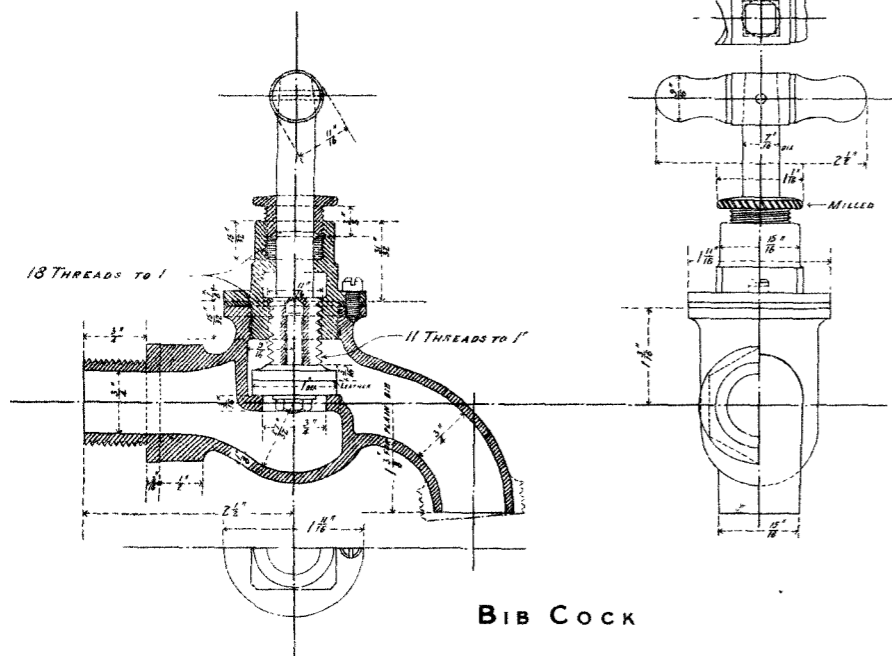
PATH COCK



UNION

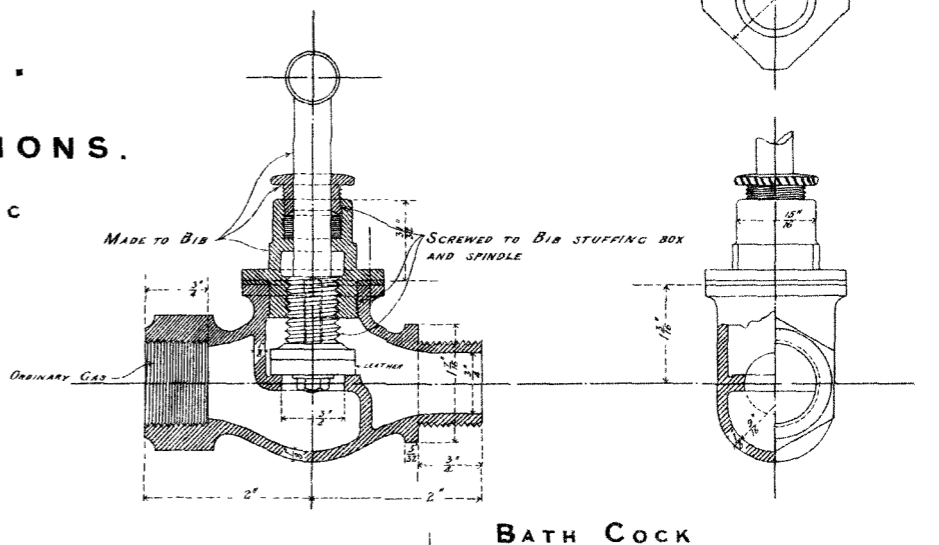


MAIN COCK

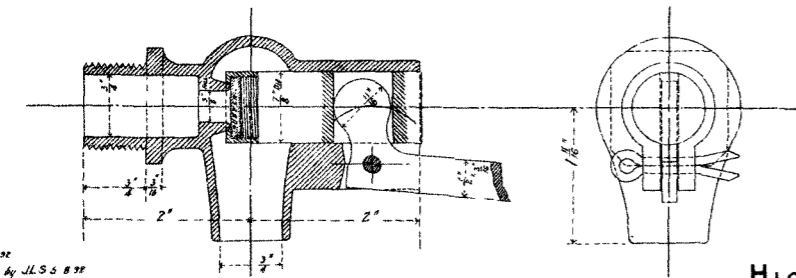


BIB COCK

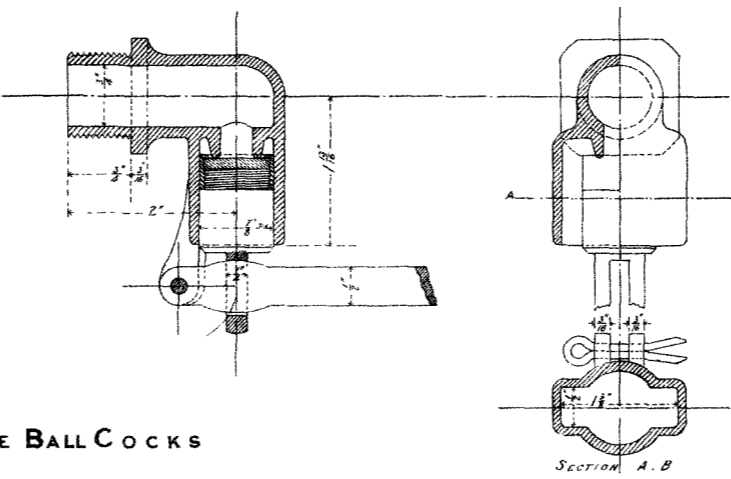
M . B . W . S . & S .
 APPROVED WATER CONNECTIONS.
 PATH, MAIN, BIB & BATH COCKS & C



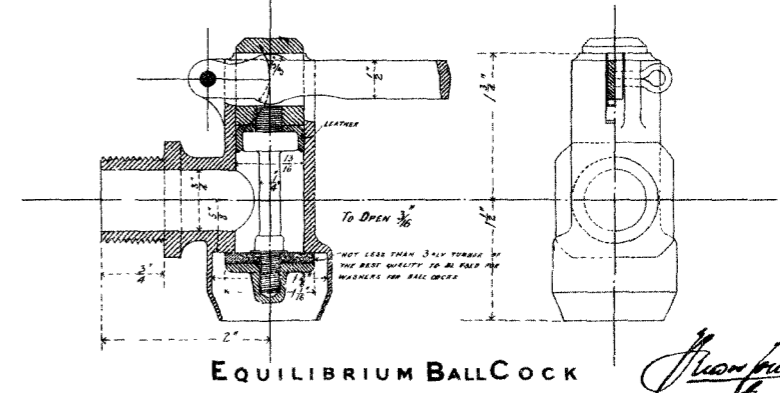
BATH COCK



HIGH PRESSURE BALL COCKS



SECTION A-B



EQUILIBRIUM BALL COCK

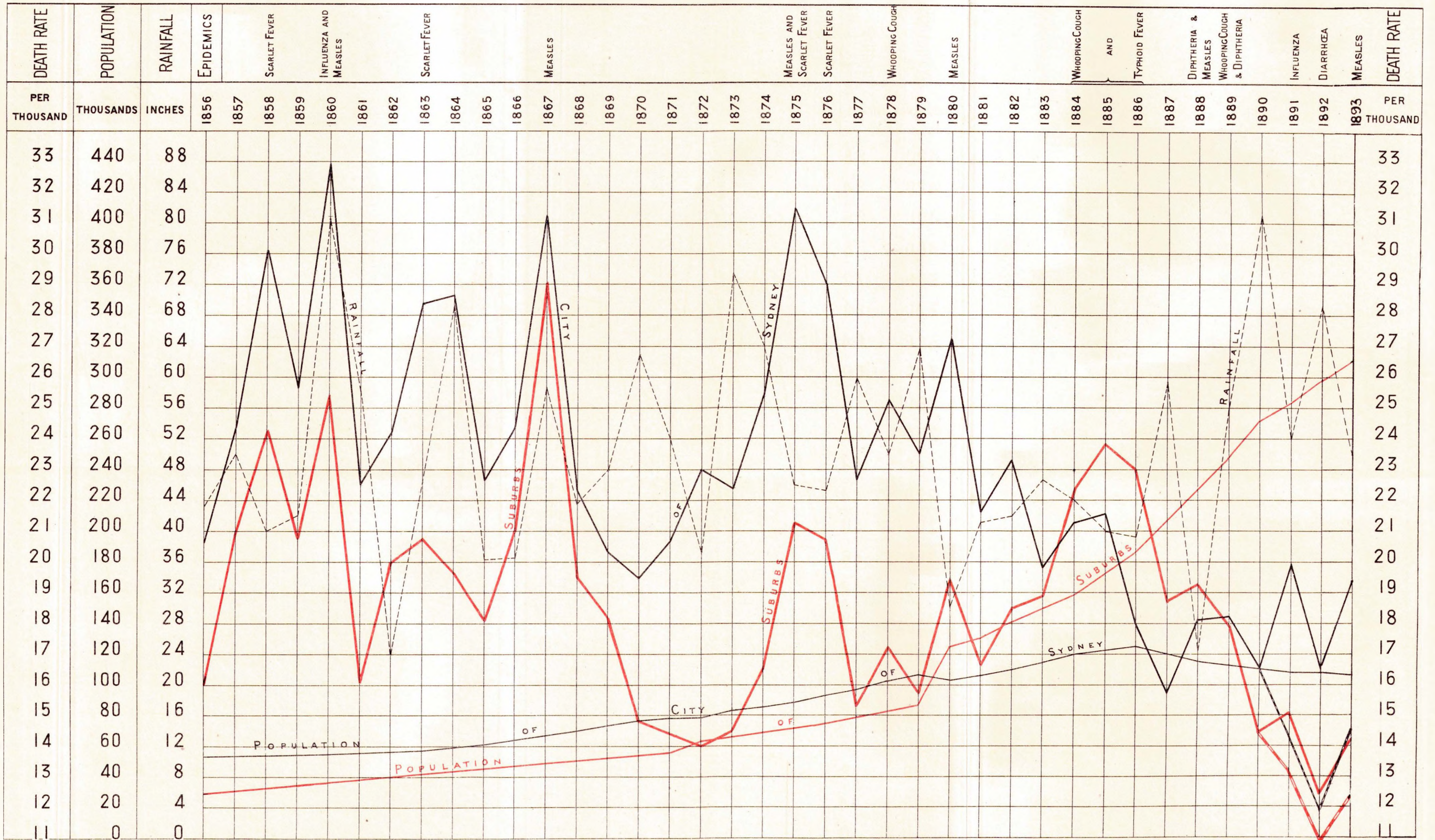
John Price
 J.S.S.

ENW 4 4 26
 Checked by J.L.S.S. 878

FULL SIZE.

(Sig. 429)

DIAGRAM SHOWING DEATH RATE OF CITY OF SYDNEY AND SUBURBS.



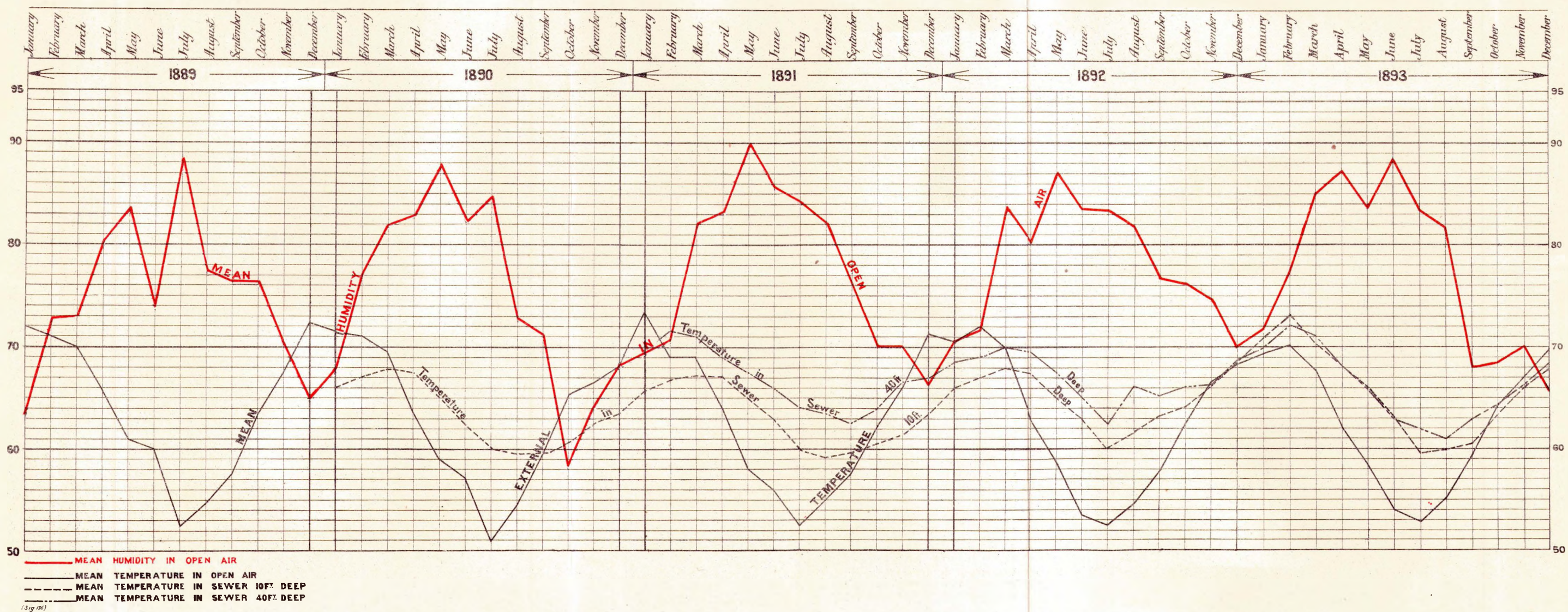
——— DEATH RATE IN CITY OF SYDNEY
 ——— DEATH RATE IN SUBURBS
 - - - - - POPULATION OF CITY OF SYDNEY
 - - - - - POPULATION OF SUBURBS
 RAINFALL AT SYDNEY OBSERVATORY
 - - - - - DEATH RATE IN CITY OF SYDNEY AND SUBURBS, EXCLUSIVE OF HOSPITALS, ASYLUMS & GAOLS.

A.E.B.

DIAGRAM

SHOWING MEANS OF EXTERNAL TEMPERATURE, TEMPERATURE IN SEWERS 10 & 40 FT DEEP AND HUMIDITY FOR THE YEARS 1889, 1890, 1891, 1892 & 1893.

PHOTO-LITHOGRAPHED AT THE GOVT. PRINTING OFFICE,
SYDNEY, NEW SOUTH WALES.



SEWERAGE RETICULATION DIAGRAM

Shewing Mileage of Subsidiary Sewers in the City of Sydney and Suburbs

Sewers laid Prior to the Control of the Board shewn in Black
do Since do do do Green

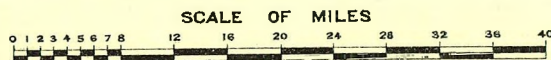
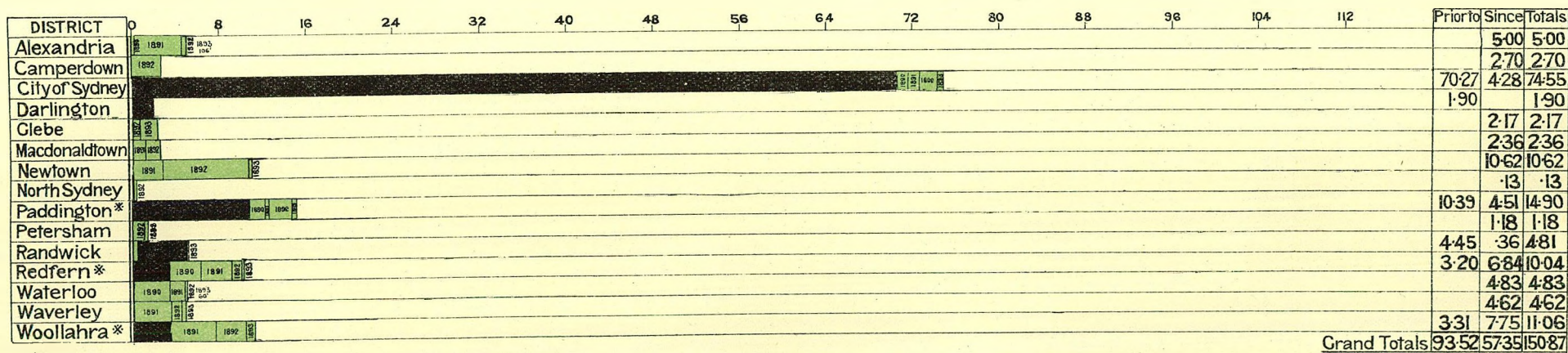


PHOTO-LITHOGRAPHED AT THE GOVT. PRINTING OFFICE,
SYDNEY, NEW SOUTH WALES.



(Sig 176.)

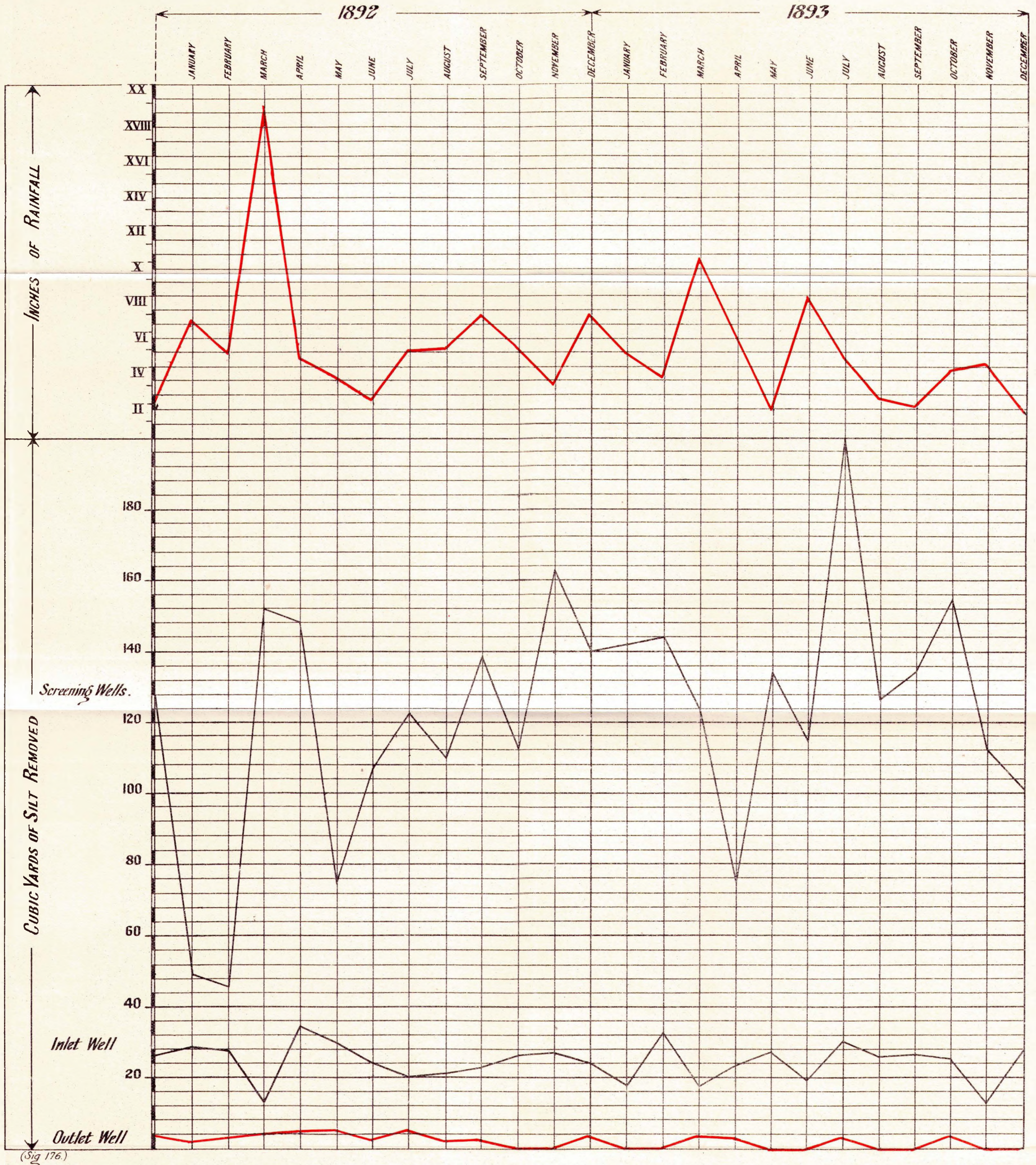
* The whole of the sewers in these Boroughs prior to 1890 were carried out by Government in accordance with the Act

Botany Sewage Farm.

N^o 7

Diagram showing quantities of Silt removed from Inlet and Outlet Houses.

Annual Report



(Sig 176.)

BOARD OF WATER SUPPLY AND SEWERAGE

Sewage Farm Botany

No 12

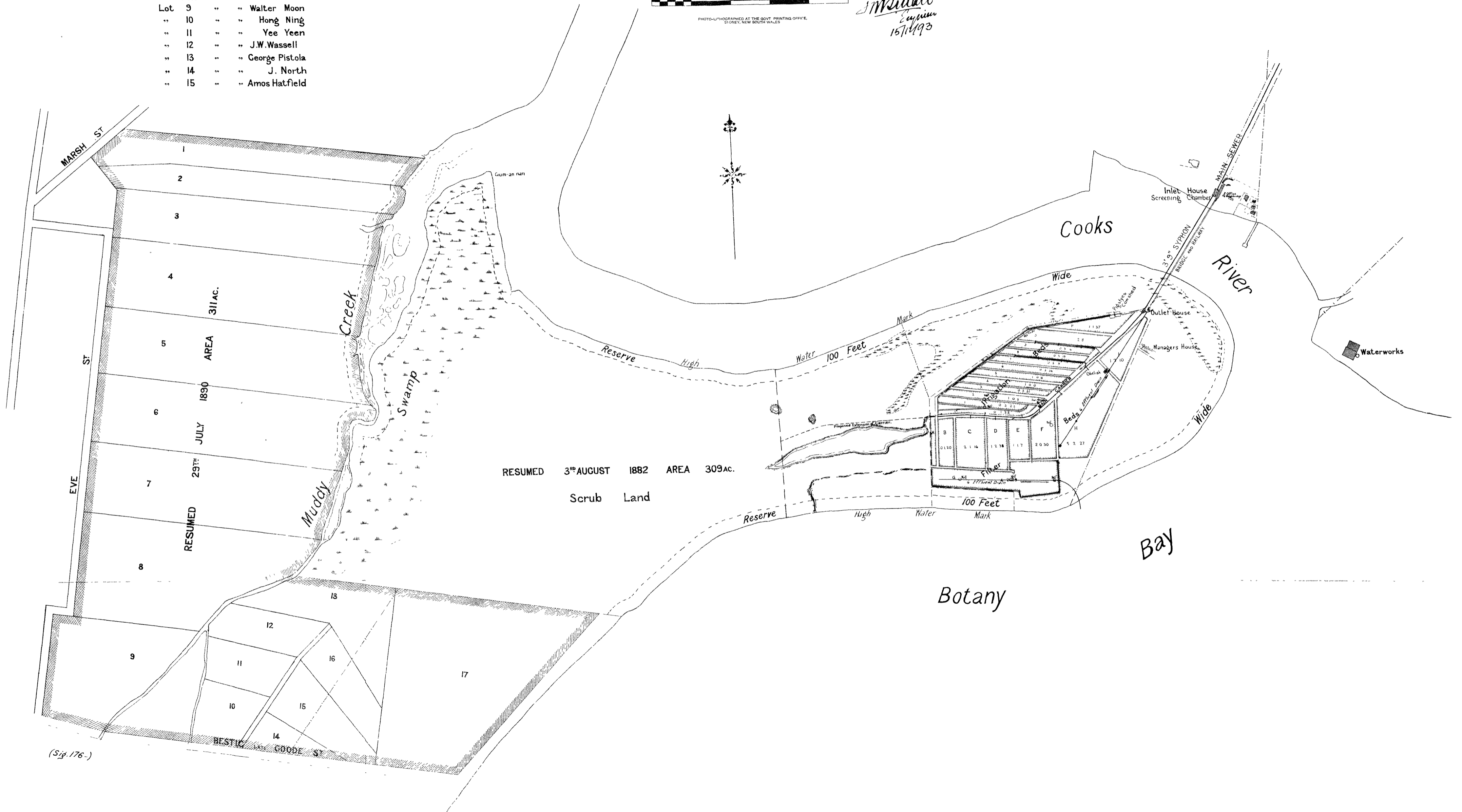
REFERENCE TO LEASES

- Lots 1 & 2 Leased to George Beehag
- " 4 to 7 " " H. Webber
- Lot 9 " " Walter Moon
- " 10 " " Hong Ning
- " 11 " " Yee Yeen
- " 12 " " J.W. Wassell
- " 13 " " George Pistola
- " 14 " " J. North
- " 15 " " Amos Hatfield

Scale of Chains to 1 inch



J. M. Small
Surveyor
15/11/93



(Sig. 176.)

APPROVED AND OBSOLETE FITTINGS

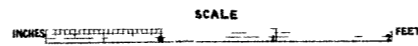
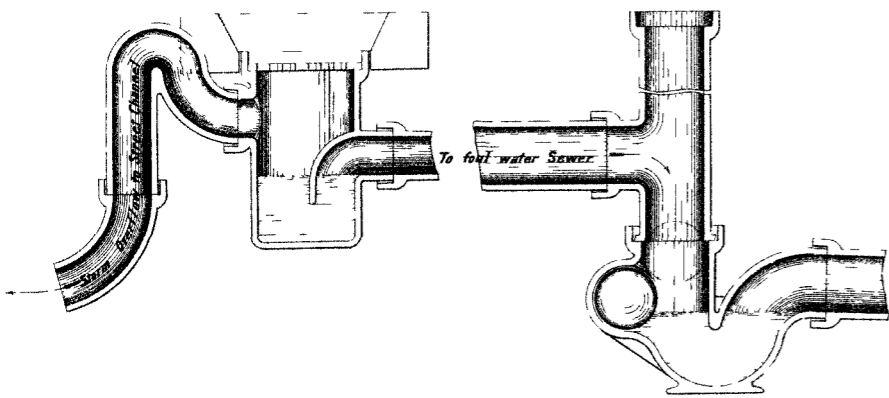


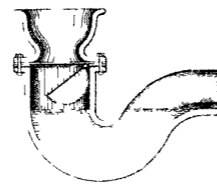
PHOTO-LITHOGRAPHED AT THE GOVT. PRINTING OFF. CE SYDNEY NEW SOUTH WALES

J. McNeil Engineer

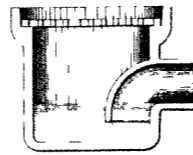
REFLUX VALVE AND SINK



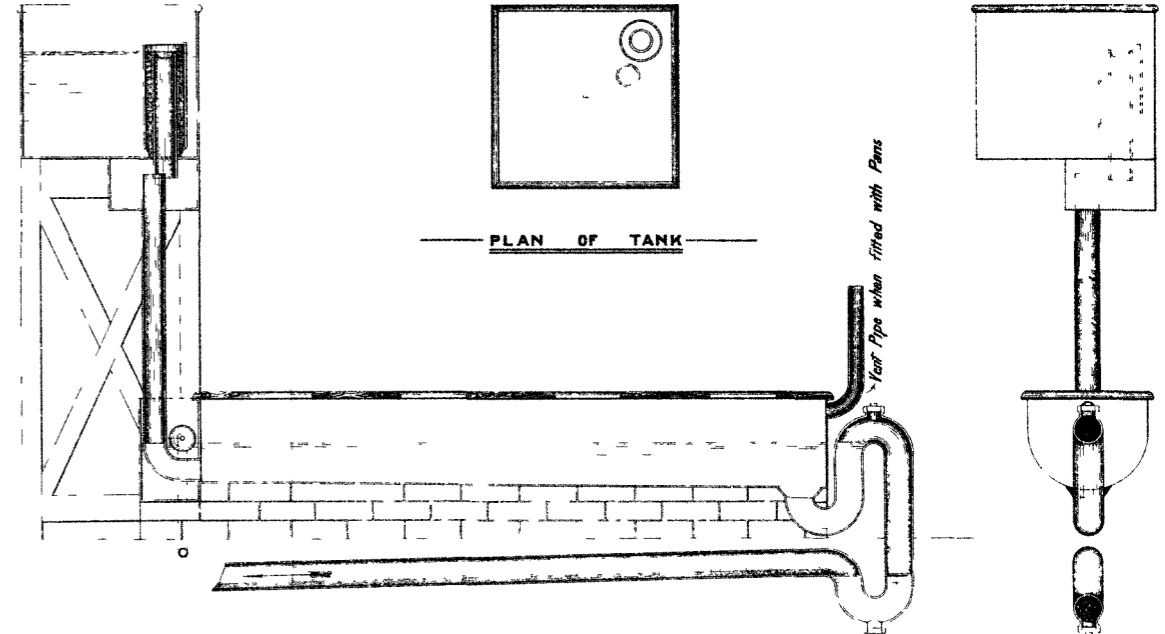
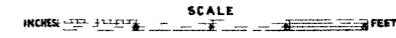
REFLUX SINK



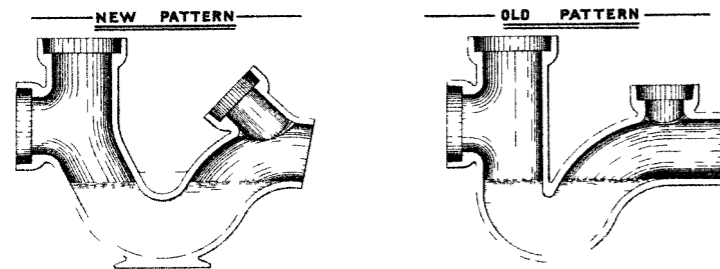
GULLY



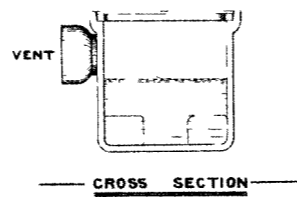
AUTOMATIC FLUSHING TROUGH CLOSET



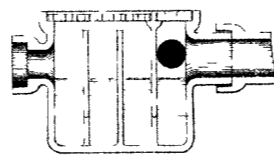
BUCHAN TRAPS



GREASE INTERCEPTOR

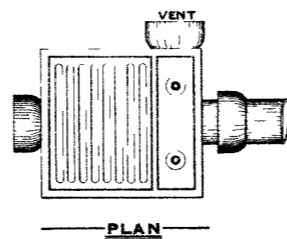
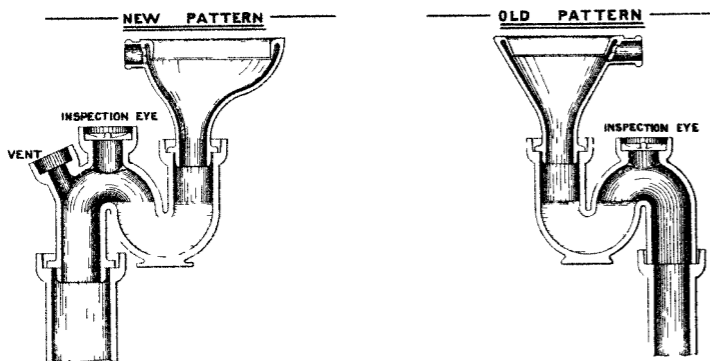


CROSS SECTION



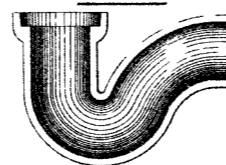
SECTIONAL ELEVATION

CLOSET PANS AND TRAPS

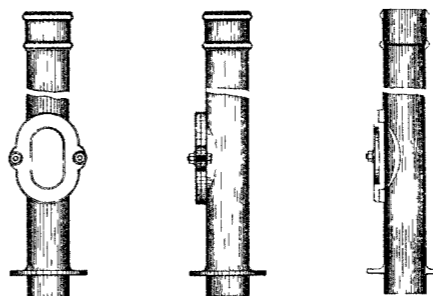


PLAN

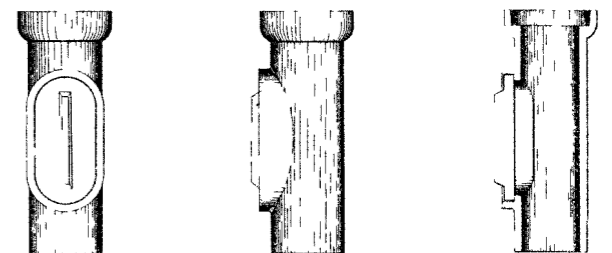
P - TRAP

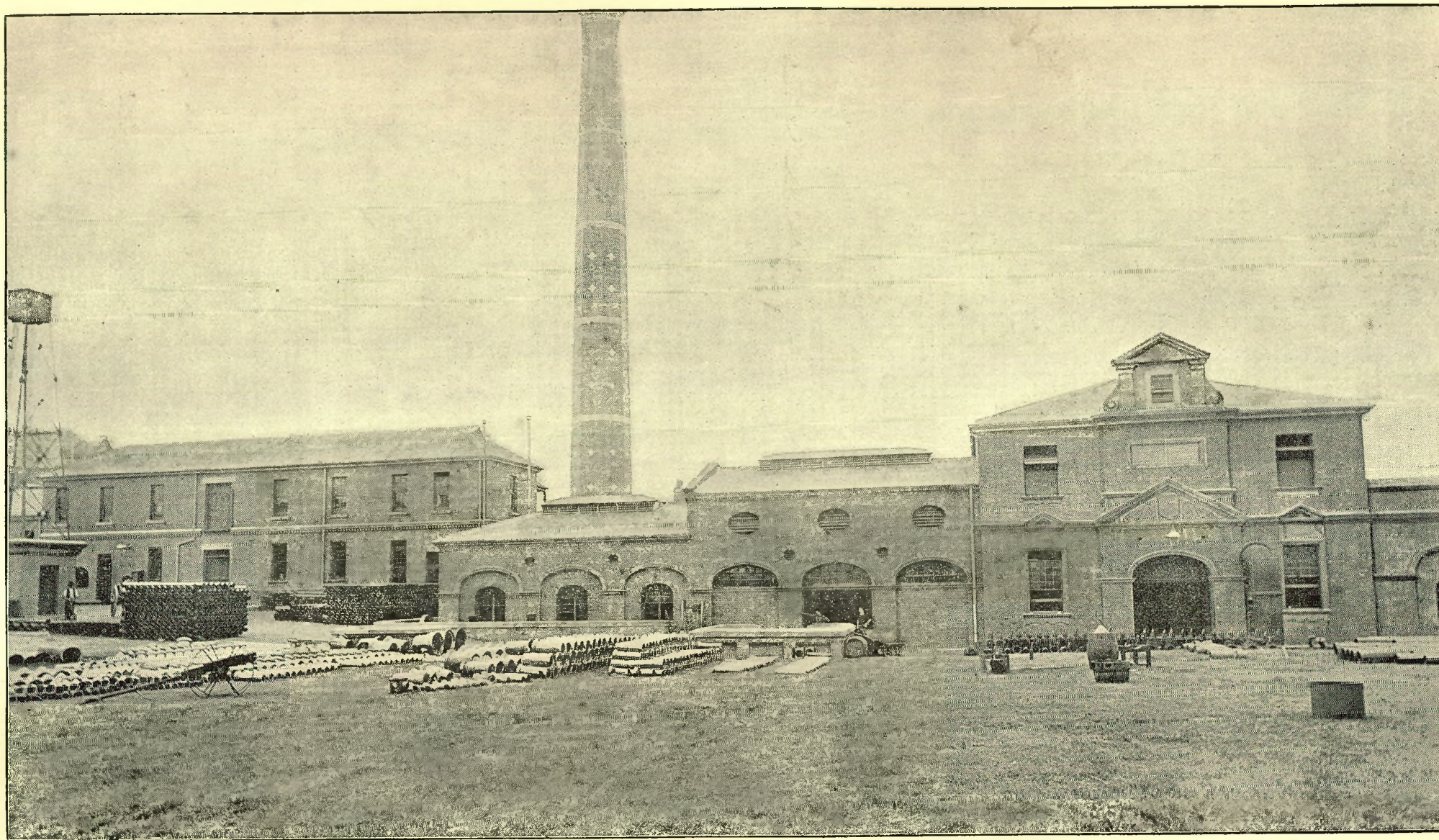


CAST IRON INSPECTION EYE

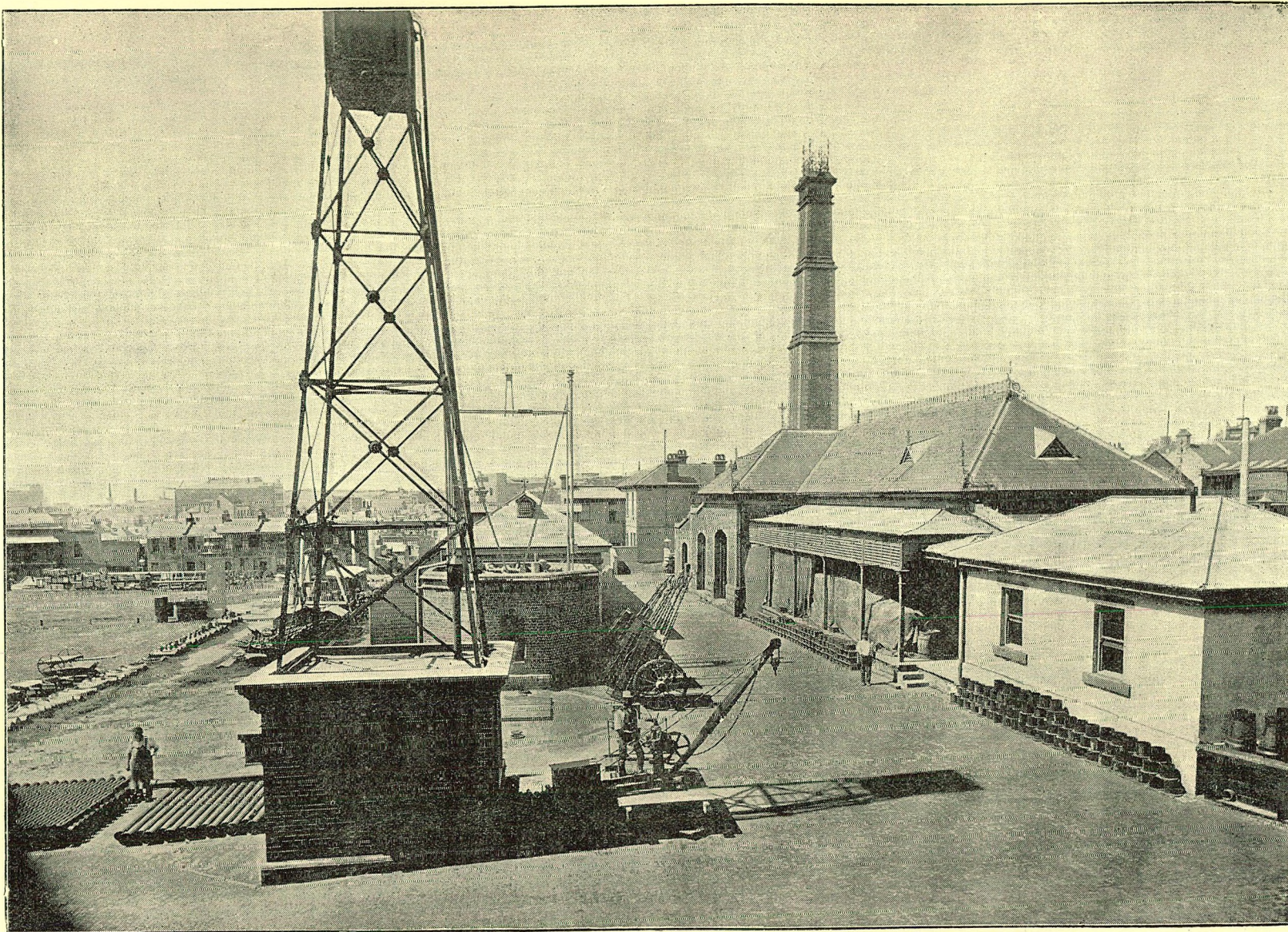


STONEWARE CLEANING EYE

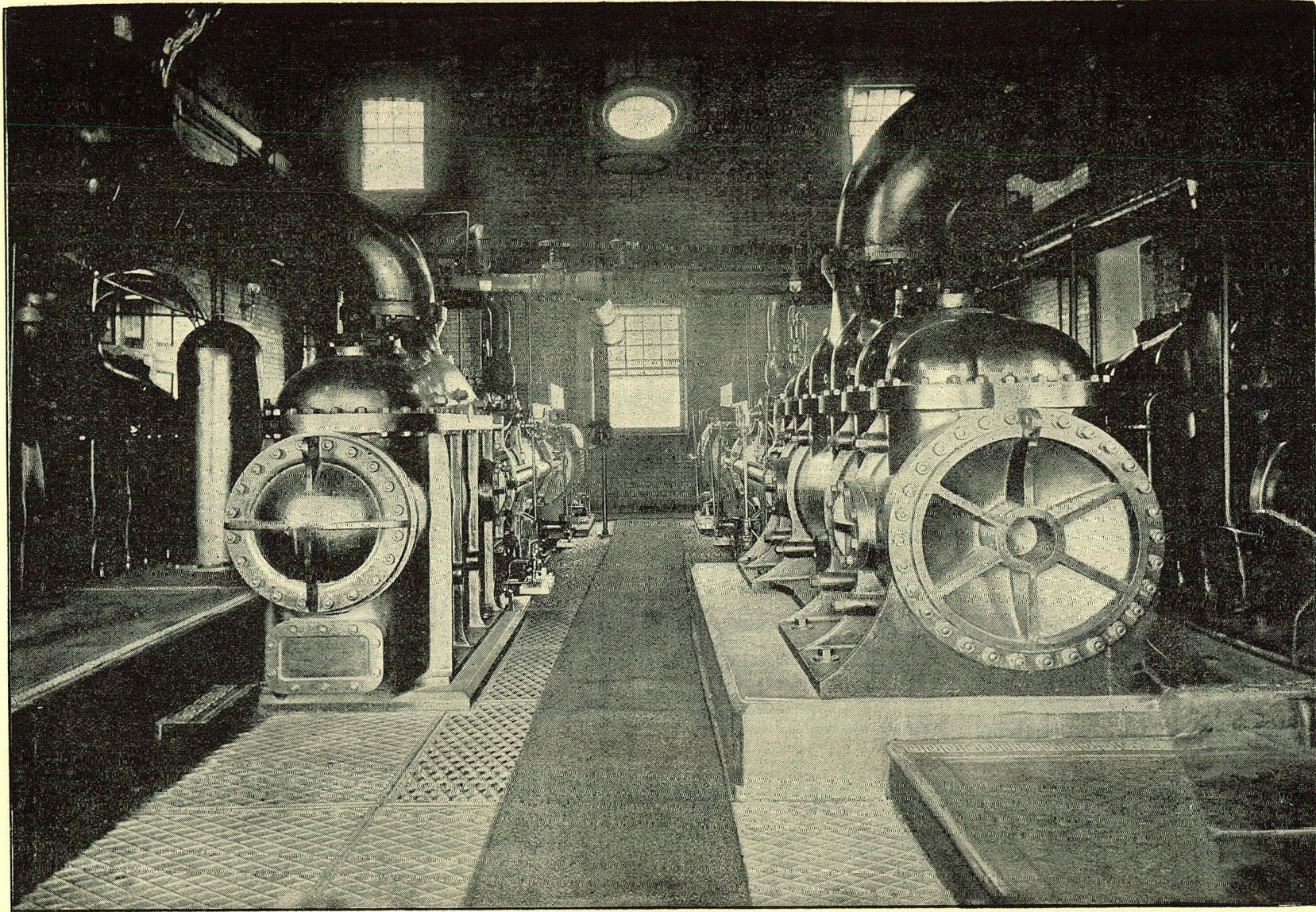




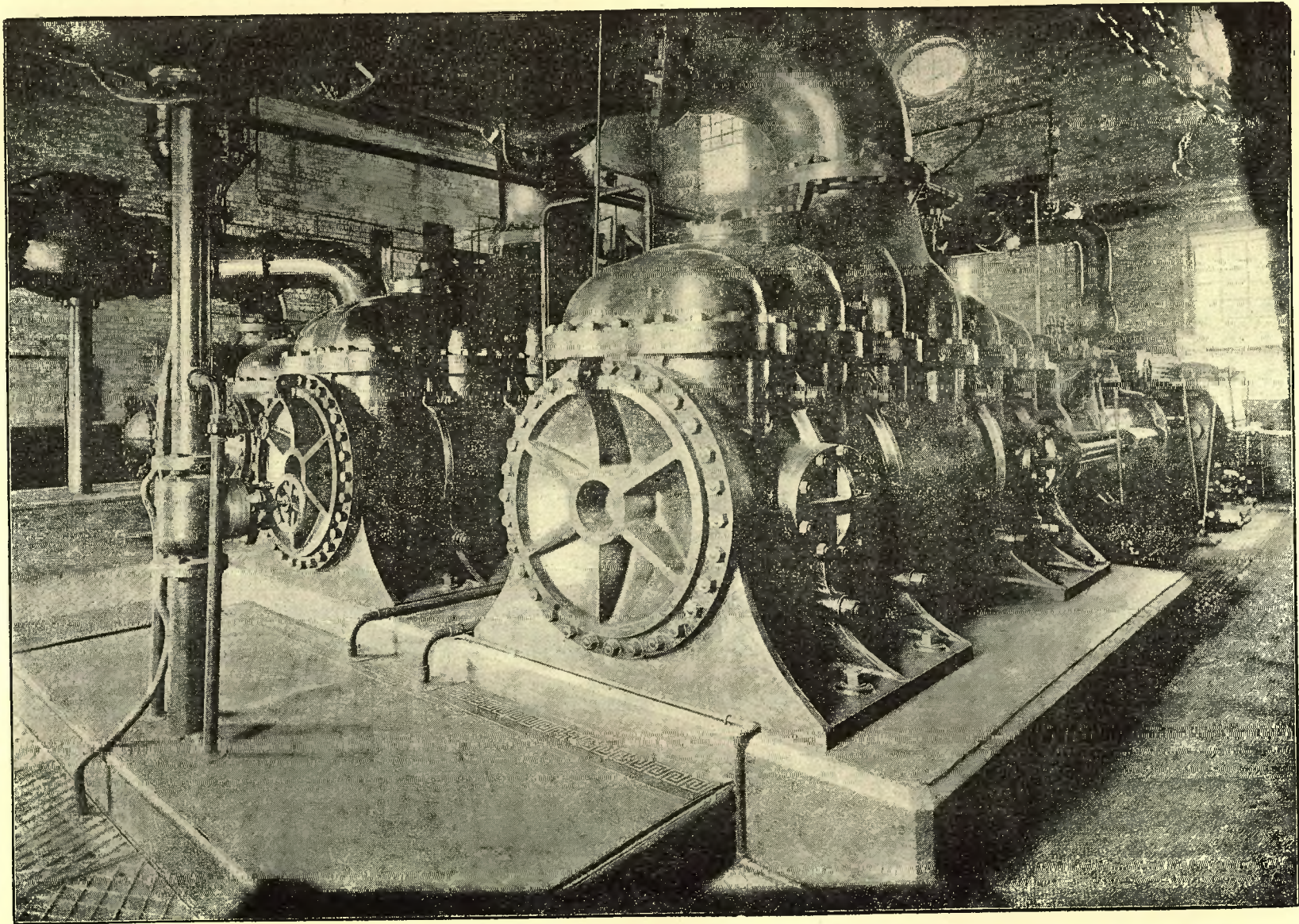
No. 13.—STORES WORTHINGTON ENGINE, AND BOILER HOUSE, CROWN-STREET DEPOT.



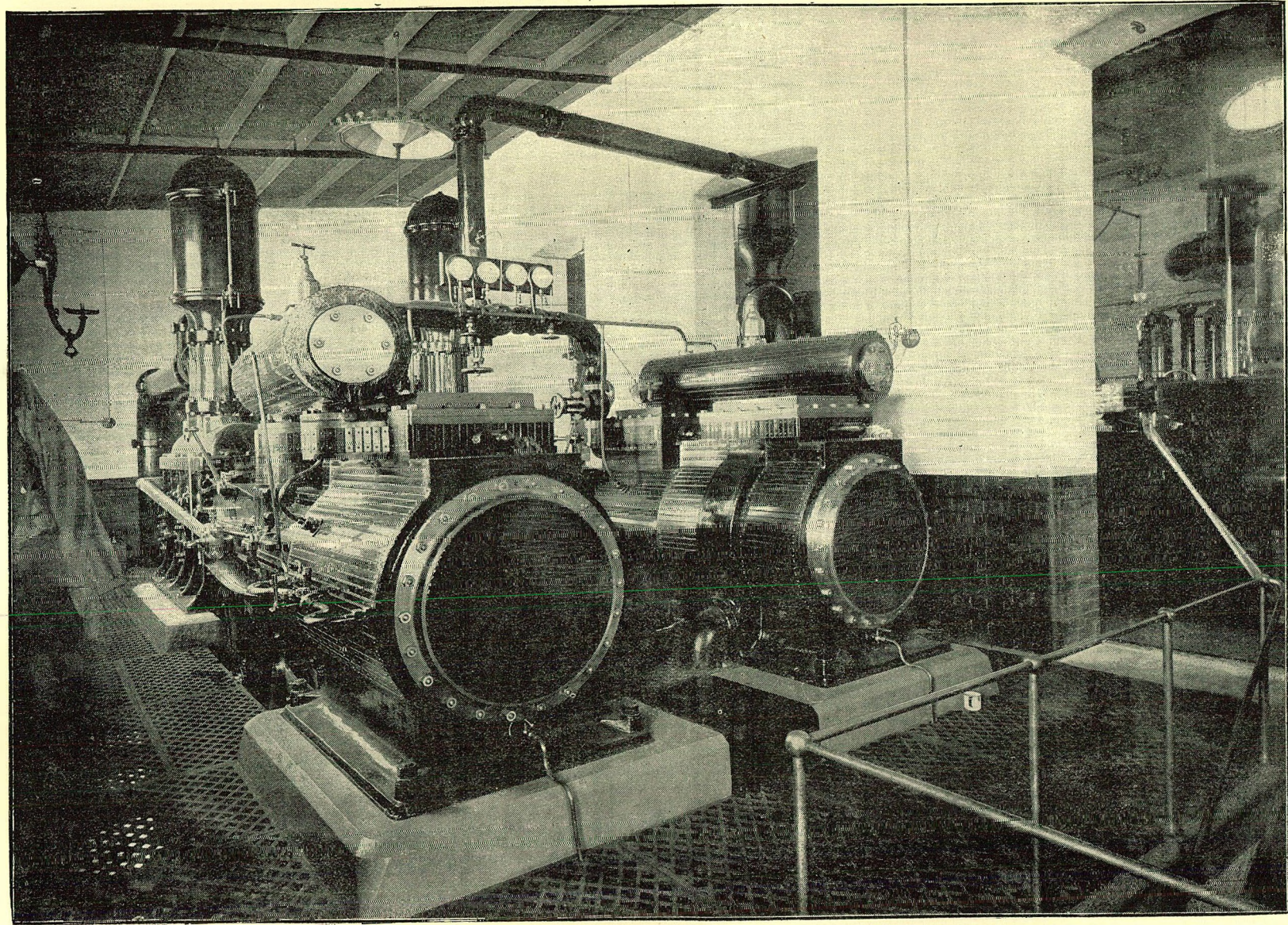
No. 14.—VALVE HOUSE, COWL TESTS, AND OLD ENGINE HOUSE, CROWN-STREET DEPÔT.



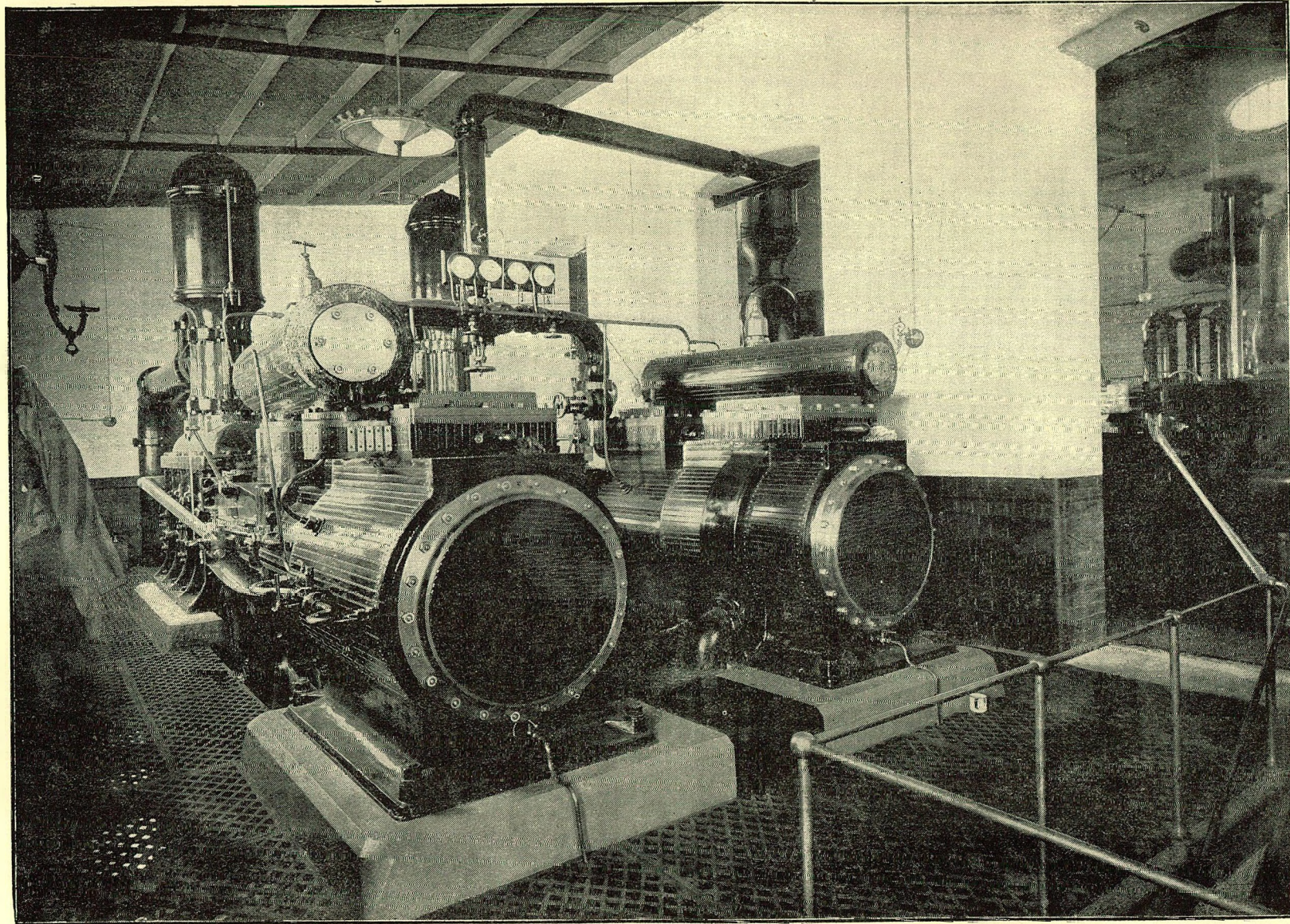
No. 15.—WORTHINGTON ENGINES NOS. 1 AND 2, CROWN-STREET PUMPING STATION.



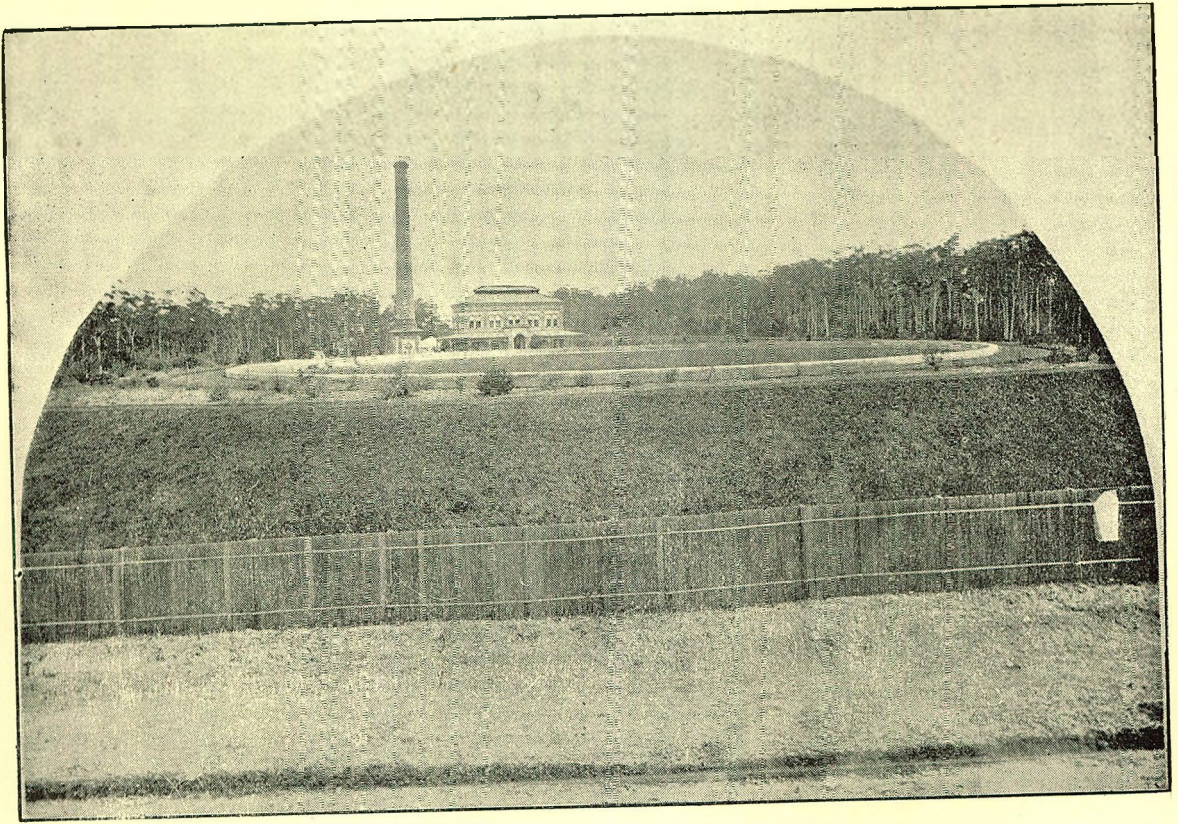
NO. 16.—WORTHINGTON ENGINE NO. 1, CROWN-STREET PUMPING STATION.



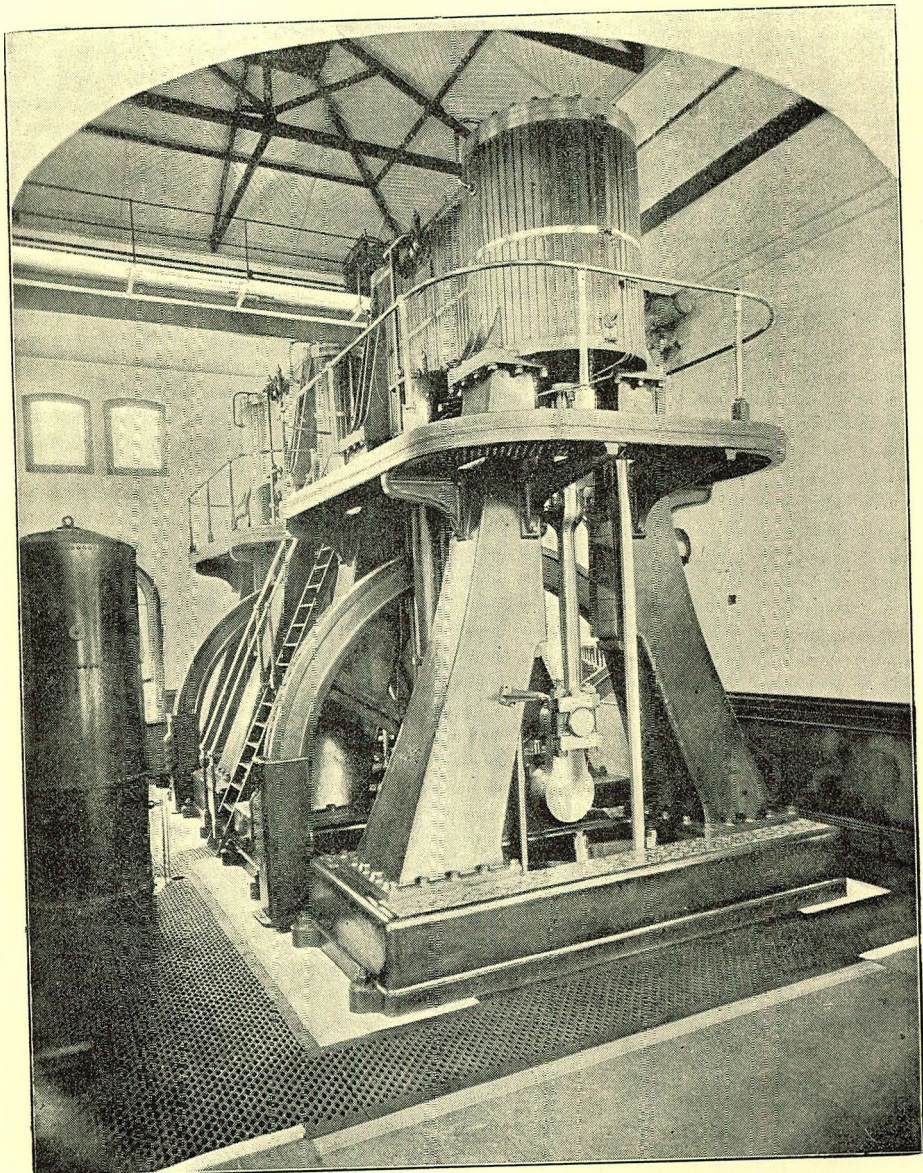
No. 17.--WAVERLEY PUMPING ENGINE NO. 3, CROWN-STREET PUMPING STATION.



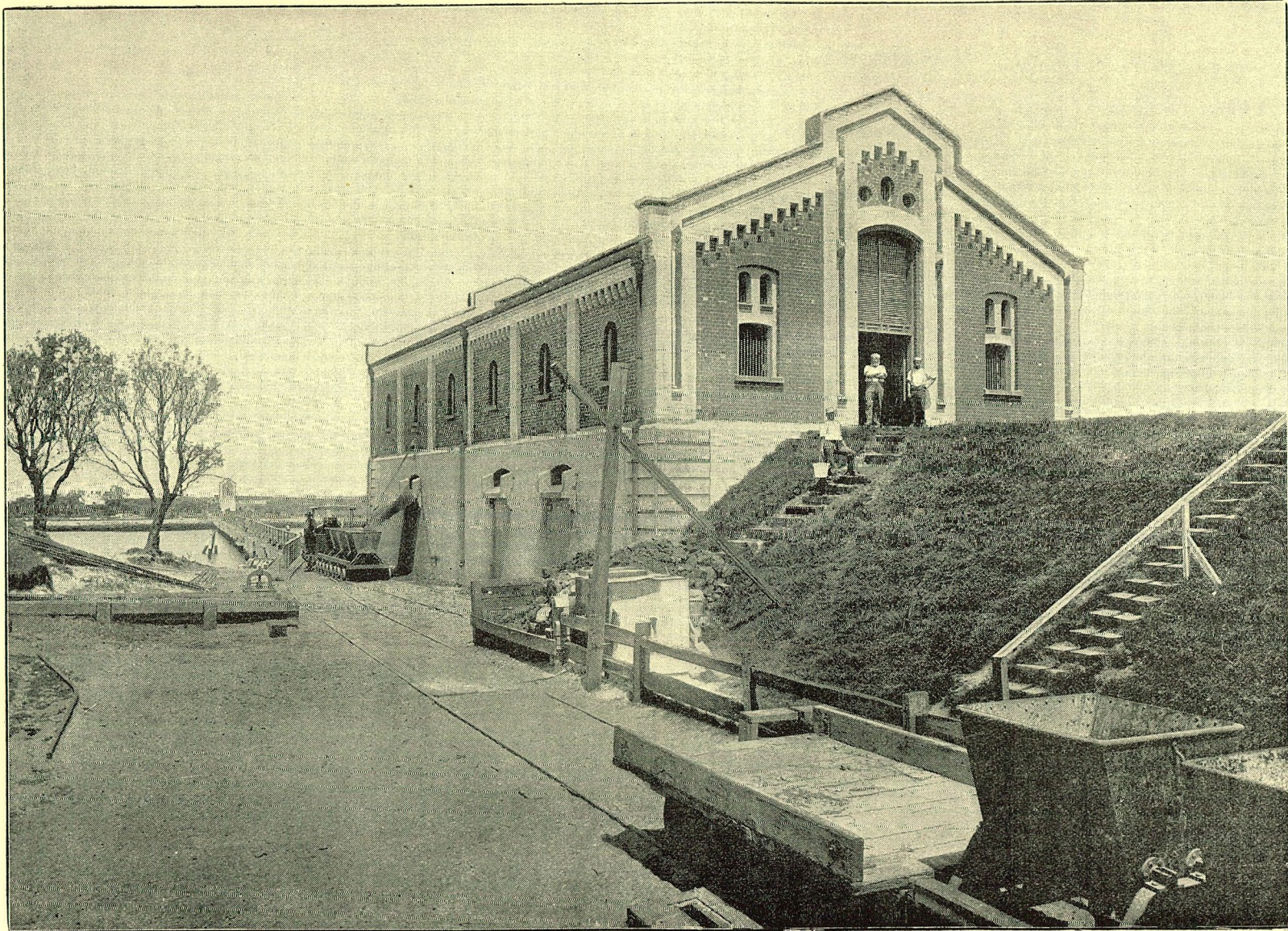
NO. 17.—WAVERLEY PUMPING ENGINE NO. 3, CROWN-STREET PUMPING STATION.



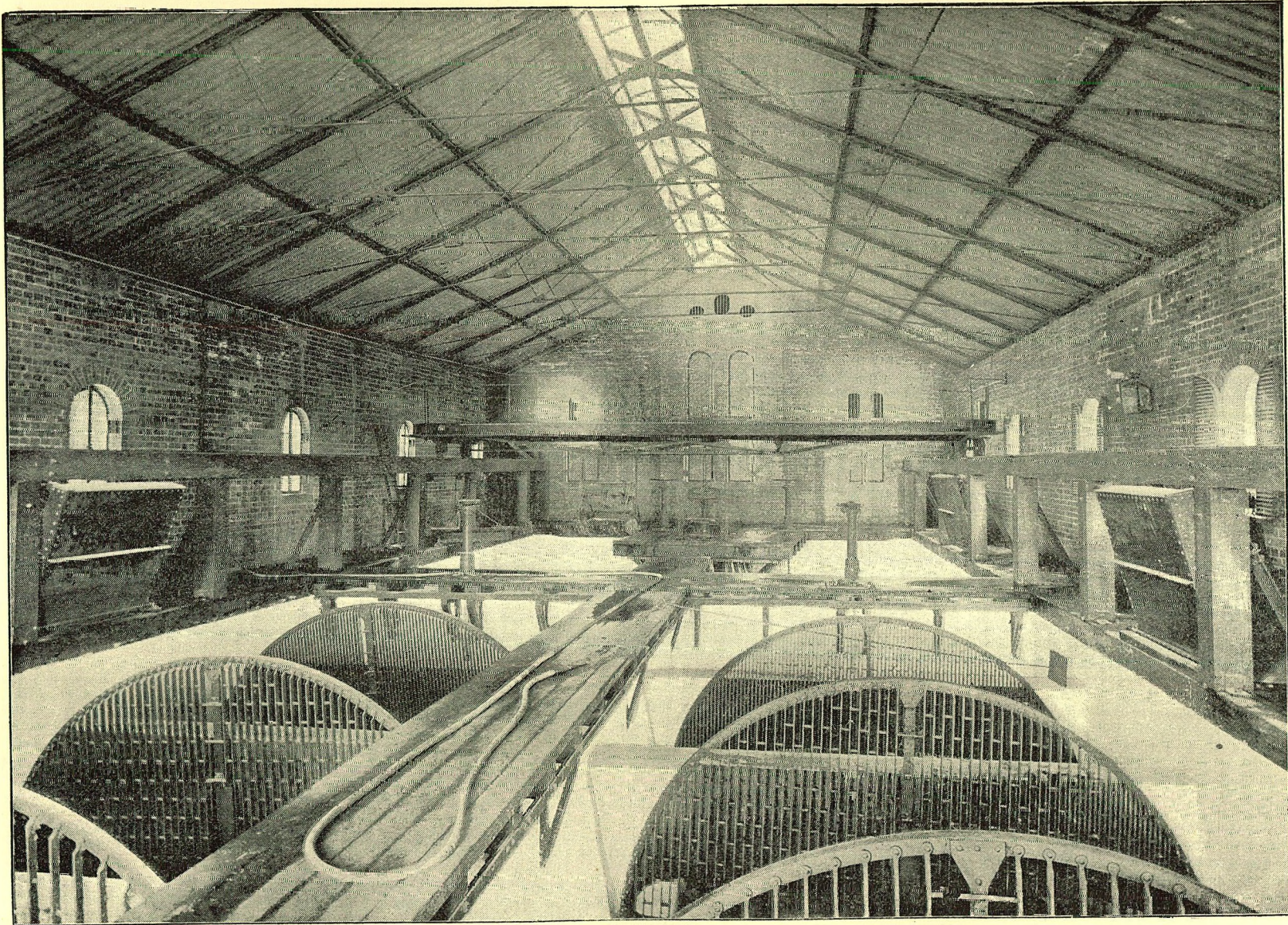
NO. 18.—RYDE PUMPING STATION NORTH SHORE WATER SUPPLY.



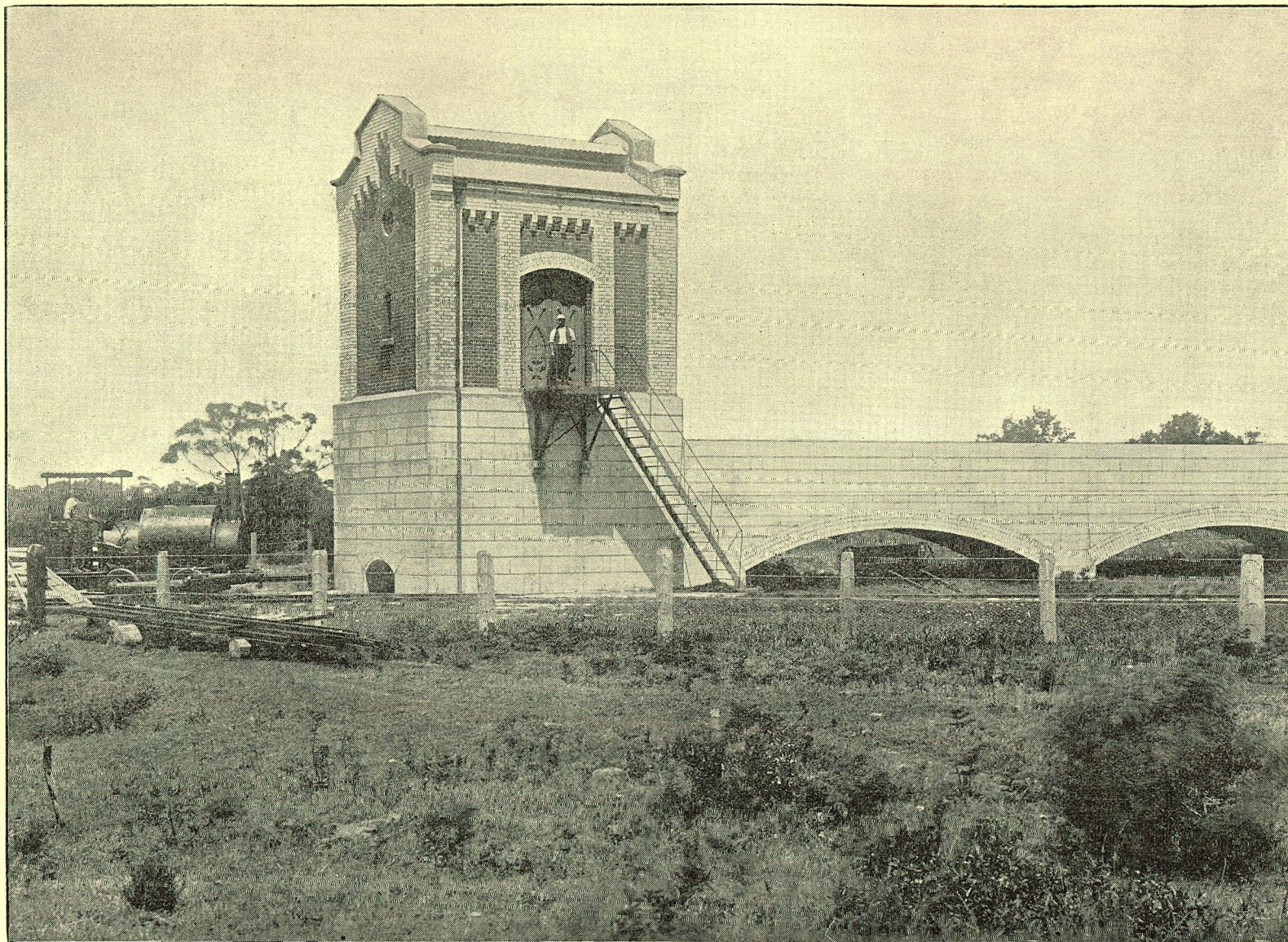
NO. 19.—RYDE PUMPING ENGINES, 216 H.P. (JAMES WATTS.)
Raising water from Ryde to Chatswood, 273 ft. in height.



No. 20.—INLET HOUSE AND STRAINING CHAMBER SEWAGE FARM.



No. 21.—INLET HOUSE (INTERIOR), SEWAGE FARM.



No. 22.—OUTLET HOUSE. SEWAGE FARM.

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

METROPOLITAN WATER AND SEWERAGE ACT
EXTENSION BILL.

(MESSAGE NO. 11.)

Ordered by the Legislative Assembly to be printed, 24 January, 1894.

Message No. 11.

R. W. DUFF,
Governor.

In accordance with the provisions contained in the 54th section of the Constitution Act, the Governor recommends for the consideration of the Legislative Assembly the expediency of making provision to meet the requisite expenses in connection with a Bill to make more effectual provision for the recovery of rates, charges, costs, and expenses payable under the Metropolitan Water and Sewerage Acts of 1880-1889; to provide for vesting in the Board certain storm-water drains and sewers and land and buildings used in connection therewith; to authorise the Board to impose rates and charges in respect of those drains and sewers within certain areas; and for other purposes.

Government House,
Sydney, 23rd January, 1894.

1894.

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

HUNTER DISTRICT WATER SUPPLY AND SEWERAGE BOARD.

(REPORT BY THE PRESIDENT ON THE WORK OF).

Ordered by the Legislative Assembly to be printed, 14 February, 1894.

Minute Paper.

Subject:—Estimates for 1894.

Department of Public Works, Sydney, 10 February, 1894.

As the Estimates of Expenditure for your Board for 1894 will come on for discussion in Parliament on Wednesday evening next, the 14th instant, will you kindly furnish, for the information of the Minister, a concise report as to the work of your Board since its constitution on 1st July, 1892, its present state and future prospects, more especially as regards the revenue likely to be collected. In the absence of your Annual Report, a statement of the revenue already received, showing the principal heads of income, should be furnished with any other particulars of public interest.

J.B.,

The President, Hunter District W. S. and S. Board.

Under Secretary for Public Works.

Minute by The President to The Under Secretary for Public Works.

Subject:—Short Report for the Hon. the Minister in connection with the Estimates for 1894.

I AM directed by the President to furnish you with the following short Report, for the information of the Hon. the Minister, as requested in your minute of the 10th instant (No. 94/62).

Revenue.—The Board came into existence on the 1st July, 1892, and the statements attached show the amount of (a) Revenue struck, (b) actually collected, and the (c) balance outstanding, by which you will notice that a large amount of rates is owing by colliery properties. As you are aware, the Board have lost no time in taking the necessary legal procedure for the recovery of these rates, but the unavoidable delays of the Supreme Court have prevented the test cases being set down for hearing earlier than next month. It is anticipated that the issues which govern the whole of the cases will be then determined, and the outstanding rates received before the close of the present half-year. Taking into consideration the high rate struck, and the great depression in trade, the Board think that the amount of rates outstanding is not excessive, and have been able to attain a satisfactory result in this respect without pressing unduly upon the ratepayers. The greatest leniency has been shown by the Board in their proceedings for the recovery of revenue, and the right to pay by instalments has been readily granted in all deserving cases.

Expenditure.—The expenditure of the Board to the 31st December, 1893, was as shown in the Statement attached. The greatest economy has been exercised in both working and management expenses, and I am directed by the President to state that, as already explained by him personally to you, the staff is a small one, and the duties of the officers are heavier in consequence. At the initiation of the Board, the necessity of rigid economy, rendered necessary by the high rate which the Act compelled the Board to strike, was kept well in view and the Board have no hesitation in saying that the work of the Department could not be carried out on more economical lines than have been adopted; and further, that the officers have carried out their duties in a thoroughly satisfactory manner. All the works in connection with the water supply have been maintained in a thorough working order, and had it not been for the depression in this district, in common with other parts of the Colony, a much larger number of ratepayers would have connected with the mains, and the amount of outstanding rates would have been smaller. The Board have already drawn the attention of the Hon. the Minister to the necessity of providing for the construction of the duplicate suction and rising mains and connections, also the drain in connection with the storage reservoir, and extensions of reticulation. The number of houses connected with the water at the time of the initiation of the Board was 3,018, and this number has been increased by 600 up to the 31st December last. The total population of the district contiguous to the water mains is about 61,000, and the number in reach of the mains about 55,000, of which only one-third are actually consumers. Included in the assets transferred to the Board was a quantity of reticulation pipes and fittings,

ittings, valued at, roughly, £15,000; in order to make this asset interest, bearing the Board have initiated several extensions, which will, when complete, return a revenue of from 10 to 25 per cent. on the cost, and when funds are made available further extensions will be gone on with.

Compulsory Connections.—The Board have not exercised the powers given under the Act, enabling them to compel connections to the mains, owing to the depression.

Amendment of the Act.—The views held by the Board in connection with the urgent necessity of amending the Act have been fully placed before the Hon. the Minister, and hardly need recapitulation, beyond stating that the ratepayers of the Hunter District would, if the Board's views were adopted, have £6,549 per annum less to provide than at present, which would, of course, mean a considerable reduction in the rate. From the statement of revenue and expenditure it will be seen that the result for the eighteen months ending 31st December last has been very satisfactory, the surplus of revenue struck over expenditure amounting to £626 6s. 2d. If the present Act were based on the lines indicated by the Board, the rate struck, viz., 1s. in the £, would have given a surplus of £10,450 9s. 5d. for the eighteen months.

Summoning.—The number of summonses issued since the commencement of the Board are (to 31st December last): District Court 49, and Small Debts Court 776, making a total of 825. In five cases only have executions been issued by the Board, and in two cases only the President's warrant, and these on application of the landlord. There are at present fifty Small Debt verdicts outstanding, and the greater part of them are being reduced by instalments.

Outstandings.—The total amount of revenue outstanding on the 31st December last was £13,833 2s. 10d.; of this sum £6,200 is owing by the colliery properties referred to previously, and Government Departments £800. The balance is not excessive when the fact that the Board do not summon for the current half-year's rates is taken into consideration, and consequently a large amount of the rates struck for the half-year ending 31st December last remains unpaid on that date.

Future Prospects.—The depression in trade will, no doubt, affect the revenue for the current year to a considerable extent, and the consumption of water by the Railway Commissioners is also on the decrease. It is anticipated that the revenue for 1894 will reach £26,000, as against estimate of £29,800 for 1893.

ALEXANDER BROWN,
President.

ALFRED E. FRY,
Secretary.

STATEMENT showing Revenue of the Hunter District Water Supply and Sewerage Board from 1st July, 1892, to 31st December, 1893,—period of eighteen months. Referred to in President's Minute to Under Secretary, dated 13th February, 1894. No. 94—37.

Head of Receipt.	Struck.	Actually Received.	Outstanding.
	£ s. d.	£ s. d.	£ s. d.
Water rates	32,605 11 7	20,579 11 11	12,025 19 8
House supply	1,451 12 5	586 13 1	864 19 4
Meters	4,995 5 9	4,260 12 8	734 13 1
Do shipping	357 11 3	344 17 0	12 14 3
Special fees	88 11 0	71 8 6	17 2 6
Building fees	80 6 6	80 6 6	.....
Drilling fees	76 2 0	76 2 0	.....
Plumbers' licenses	39 10 6	39 10 6	.....
Meter-testing fees	9 7 6	9 7 6	.....
Sale of by-laws	2 15 6	2 15 6	.....
Witness' expenses	3 13 0	3 6 0	0 7 0
Penalties	0 12 6	0 12 6	.....
New mains	0 5 11	0 2 6	0 3 5
	39,711 5 5	26,055 7 2	13,655 19 3
<i>Losses cancelled and removed</i>	230 18 5	230 18 5	.....
Total.....£	39,480 7 0	25,824 8 9	13,655 19 3

ALFRED E. FRY,
Secretary.

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

HUNTER DISTRICT WATER SUPPLY AND SEWERAGE BOARD.

(RETURN OF REVENUE AND EXPENDITURE FROM 1st JULY, 1892, TO 31st DECEMBER, 1893.)

Ordered by the Legislative Assembly to be printed, 14 February, 1894.

STATEMENT of REVENUE and EXPENDITURE from 1st July, 1892, to 31st December, 1893—

Dr.	Period of 18 months.				Cr.				
REVENUE.	£	s.	d.	£	s.	d.			
To Water rates	32,876	13	7						
„ new mains.....	0	5	11						
„ new assessments ..	1,477	13	5						
Meters	4,668	1	9						
„ shipping	349	5	5						
„ in excess	339	8	10						
Gardens	24	1	3						
Stock	45	12	6						
Special fees.....	18	4	9						
Builders' supply.....	80	6	6						
Drilling fees	76	2	0						
Plumbers' license	39	10	6						
Sundry water supply	16	16	0						
Less—	40,010	2	5						
Cancelled or removed	404	10	9						
				39,605	11	8			
<hr/>									
				£39,605	11	8			
<hr/>									
				EXPENDITURE.	£	s.	d.		
<i>Maintenance.</i>									
The expenditure under this heading is regarded by the Board as not being a fair item to be shown as expenditure in addition to the annual repayments which, in their opinion, practically included it (vide printed correspondence). The amount for the eighteen months was £1,661 3s. 7d.									
<i>Working Expenses.</i>									
By Wages, coals, and stores, cartage, and miscellaneous expenses									
						3,930	12	10	
<i>Management Expenses.</i>									
By President's and Board Fees									
				1,448	0	0			
Salaries of staff									
				4,735	19	1			
Rent of offices.....									
				556	6	0			
Stationery, printing, advt. and office expenses									
				£541	19	10			
Less value of stock included, but unused									
				121	5	7			
					420	14	3		
Travelling expenses									
					197	16	0		
Legal expenses									
					135	17	1		
							7,494	2	5
<i>Annual instalments for repayment of Capital indebtedness in terms of section 120.</i>									
By Instalments in respect of permanent works to repay in 100 years.....									
					12,868	15	3		
Renewable works to repay in 30 years									
					14,685	15	0		
							27,554	10	3
							38,979	5	6
By Balance (surplus)									
							626	6	2
				£39,605	11	8			

ALFRED E. FRY,
Accountant.

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

COUNTRY TOWNS AND HUNTER DISTRICT WATER SUPPLY
AND SEWERAGE ACTS AMENDMENT BILL.

(MESSAGE No. 22.)

Ordered by the Legislative Assembly to be printed, 13 March, 1894.

R. W. DUFF,
Governor.

Message No. 22.

In accordance with the provisions contained in the 54th section of the Constitution Act, the Governor recommends for the consideration of the Legislative Assembly the expediency of making provision to meet the requisite expenses in connection with a Bill to amend such of the provisions of the "Country Towns Water and Sewerage Act of 1880," the "Country Towns Water and Sewerage Act Extension Act of 1887," and the "Hunter District Water Supply and Sewerage Act of 1892," as deal with the repayment of the cost of works of water supply and sewerage, and to extend the period of such repayment; to empower the Board established under the said "Hunter District Water Supply and Sewerage Act of 1892" to connect premises with the water-mains under their control, and to recover the expenses of such connections; to provide for the carrying out of such connections by the said Board on deferred payments; and to make other provisions subsidiary to or in connection with the objects aforesaid.

Government House,
Sydney, 8th March, 1894.

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

LITHGOW WATER SUPPLY WORKS BILL.

(MESSAGE No. 8.)

Ordered by the Legislative Assembly to be printed, 24 January, 1894.

R. W. DUFF,
Governor.

Message No. 8.

In accordance with the provisions contained in the 54th section of the Constitution Act, the Governor recommends for the consideration of the Legislative Assembly the expediency of making provision to meet the requisite expenses in connection with a Bill to sanction the construction of Works of Water Supply for the town of Lithgow, county of Cook.

*Government House,
Sydney, 23rd January, 1894.*

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

JUNEE WATER SUPPLY WORKS ACT
AMENDMENT BILL.

(MESSAGE No. 16.)

Ordered by the Legislative Assembly to be printed, 7 February, 1894.

R. W. DUFF,
Governor.

Message No. 16.

In accordance with the provisions contained in the 54th section of the Constitution Act, the Governor recommends for the consideration of the Legislative Assembly the expediency of making provision to meet the requisite expenses in connection with a Bill to amend the Junee Water Supply Works Act of 1893.

*Government House,
Sydney, 6th February, 1894.*

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

TAMWORTH WATER SUPPLY WORKS BILL.

(MESSAGE No. 39.)

Ordered by the Legislative Assembly to be printed, 25 April, 1894.

R. W. DUFF,
Governor.

Message No. 39.

In accordance with the provisions contained in the 54th section of the Constitution Act, the Governor recommends for the consideration of the Legislative Assembly the expediency of making provision to meet the requisite expenses in connection with a Bill to sanction the construction of works of Water Supply for the town of Tamworth, counties of Inglis and Parry; and to apply the provisions of the Country Towns Water and Sewerage Act of 1880, and any Act amending the same, to the said works.

*Government House,
Sydney, 25th April, 1894.*

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

ARMIDALE WATER SUPPLY WORKS BILL.

(MESSAGE No. 40.)

Ordered by the Legislative Assembly to be printed, 25 April, 1894.

R. W. DUFF,
Governor.

Message No. 40.

In accordance with the provisions contained in the 54th section of the Constitution Act, the Governor recommends for the consideration of the Legislative Assembly the expediency of making provision to meet the requisite expenses in connection with a Bill to sanction the construction of works of Water Supply for the town of Armidale, county of Sandon; and to apply the provisions of the Country Towns Water and Sewerage Act of 1880, and any Act amending the same, to the said works.

*Government House,
Sydney, 25th April, 1894.*

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

PUBLIC WORKS ACT OF 1888.
(RESUMPTION OF LAND FOR PARKES WATER SUPPLY.)

Ordered by the Legislative Assembly to be printed, 29 May, 1894.

**NOTIFICATION OF RESUMPTION OF LAND UNDER
THE "PUBLIC WORKS ACT OF 1888," 51 VICTORIA
No. 37.**

NEW SOUTH WALES,) Proclamation by His Excellency The
to wit. { Right Honourable Sir ROBERT WILLIAM
(L.S.) DUFF, a Member of Her Majesty's Most
Honourable Privy Council, a Knight
Grand Cross of the Most Distinguished
Order of Saint Michael and Saint George,
Governor and Commander-in-Chief of
the Colony of New South Wales and its
Dependencies.

WHEREAS I, Sir ROBERT WILLIAM DUFF, the Governor aforesaid, with the advice of the Executive Council, have directed that a certain public work, that is to say, Supply of Water to the town of Parkes, in the said Colony, the estimated cost of which does not exceed twenty thousand pounds, shall be carried out under the provisions of the "Public Works Act of 1888" as an authorised work by the Minister for Public Works as Constructing Authority; and that the land described in the Schedule hereto, which is in my opinion required for carrying out the said work, shall be acquired by taking the same under the "Lands for Public Purposes Acquisition Act," as adopted by the "Public Works Act of 1888": Now, therefore, I, the said Governor, with the advice aforesaid, in pursuance of the "Public Works Act of 1888," do declare by this notification, to be published in the Government Gazette, and in one or more newspapers published or circulated in the Police District wherein the said lands are situated, that the Crown Land comprised within the descriptions set forth in the Schedule hereto has been appropriated, and the private property within such descriptions has been resumed, for the public purpose aforesaid, to the intent that upon the publication of this notification in the Gazette, the said lands described in the said Schedule hereto shall forthwith be vested in the said Constructing Authority as a corporation sole on behalf of Her Majesty, for the purposes of the said "Public Works Act of 1888," for an estate in fee simple in possession, freed and discharged from all trusts, obligations, estates, interests, contracts, charges, rates, rights-of-way, or other encumbrances whatsoever; and to the further intent that the legal estate therein, together with all powers incident thereto or conferred by the said last-mentioned Act, shall be vested in such Constructing Authority as a Trustee: And I declare that the following is the Schedule of the land hereinbefore referred to:—

1. All that piece or parcel of land situate in the parishes of Kamandra and Parkes, county of Ashburnham, and Colony of

New South Wales, being part of travelling stock reserve 7,286 (now a reserve for occupation, &c., notified 25th July, 1893) in the first-named parish, and part of camping reserve 1,112 in the parish of Parkes: Commencing at the north-west corner of W. T. Barker's portion 125 of 7 acres 2 roods 21 perches in the parish of Kamandra, at the Billabong Creek; and bounded thence on the east by part of the west boundary of the said portion 125 bearing south 153 feet 3 inches; thence by a line crossing the said Billabong Creek and by the north boundary of John Kenworthy's portion 231 of 1 acre 3 roods 30 perches bearing west in all 685 feet 4 inches; thence by part of the west boundary of the said portion 231 bearing south 65 feet 4 inches; thence by a line bearing south 44 degrees 41 minutes west 398 feet 1 inch; thence south 4 degrees 40 minutes east 201 feet 5 inches to the Parkes-Orange Road; thence by part of the north side of the said road bearing north 89 degrees 5 minutes west 274 feet 8 inches; thence by a line bearing north 13 degrees 39 minutes east 2,072 feet 9 inches; thence by a line bearing south 72 degrees 43 minutes east 1,089 feet; and thence by a line south 17 degrees 17 minutes west 1,036 feet 10 inches, to the point of commencement,—containing 36 acres 2 roods 87 perches or thereabouts, and said to be in the possession of the Crown.

2. All that piece or parcel of land situate in the parish of Parkes, county of Ashburnham, and Colony of New South Wales, being part of John Kenworthy's portion 231 of 1 acre 3 roods 30 perches on the Billabong Creek: Commencing at the north-west corner of the said portion 231; and bounded thence on the north by part of camping reserve 1,112 bearing east 65 feet 4 inches; thence on the south-east by other part of the aforesaid portion 231 bearing south-westerly 92 feet 4 inches; and thence on the west by other part of the said camping reserve 1,112 bearing north 65 feet 4 inches, to the point of commencement,—containing 7½ perches or thereabouts, be the said dimensions a little more or less, and said to be in the possession and occupation of John Kenworthy.

In witness whereof I have hereunto set my Hand, and caused the Great Seal of the Colony to be hereto affixed, at Government House, Sydney, this sixteenth day of May, in the year of our Lord one thousand eight hundred and ninety-four, and in the fifty-seventh year of Her Majesty's Reign.

By His Excellency's Command,

WILLIAM JOHN LYNE.

GOD SAVE THE QUEEN!

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

ARTESIAN WELLS REGULATION BILL.

(MESSAGE No. 21.)

Ordered by the Legislative Assembly to be printed, 13 March, 1894.

R. W. DUFF,
Governor.

Message No. 21.

In accordance with the provisions contained in the 54th section of the Constitution Act, the Governor recommends for the consideration of the Legislative Assembly the expediency of making provision to meet the requisite expenses in connection with a Bill for the regulation of Artesian Wells, and for preventing the waste of water derived therefrom.

*Government House,
Sydney, 12th March, 1894.*

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

ARTESIAN WELLS AND GOVERNMENT TANKS WITHIN
THE COLONY.

(RETURN RESPECTING.)

Ordered by the Legislative Assembly to be printed, 12 April, 1894.

[Laid upon the Table of this House in answer to Questions Nos. 8 and 9, of 3 April, 1894.]

Question.

- (8.) ARTESIAN WELLS WITHIN THE COLONY:—Mr. WILLIS asked THE SECRETARY FOR MINES,—
- (1.) How many artesian wells have the Department put down within the Colony?
 - (2.) How many have been successful?
 - (3.) How many have been failures?
 - (4.) What is the total cost of construction, including regulating out-flow pipes and cost of management?
 - (5.) How many contracts are now let; what is the aggregate amount of money for such contracts; who are the contractors; and when will the contracts expire?
 - (6.) What is the revenue derived from these artesian wells since the commencement?
 - (7.) What has been the total expenditure for office management or supervision?
 - (8.) How many acres of land (if any) under crops, trees, or vegetables?
 - (9.) How many bores are leased; and to whom; and what is the rent derived from same?

Answer.

- (1.) Twenty-one are completed: ten are in progress; representing 40,000 feet of boring.
- (2.) Nineteen are flowing wells: five are sub-artesian, yielding pumping supply.
- (3.) One, the Bourke Trucking-yards Bore, has been an absolute failure.
- (4.) Cost of bores completed, including casing, regulating valves, carriage, caretakers' wages, &c., £52,303.
- (5.) Contracts are let for the following additional bores:—
Four bores, Ivanhoe-Menindie Road, J. H. Stubbs, contractor—Contract time expired 15th June, 1893; an extension has been granted.
Three bores, Box Creek-Arumbo Road, J. H. Stubbs, contractor—Contract time expired 15th June, 1893; an extension has been granted.
Four bores, Hay and Ivanhoe districts, Petrolia Boring Co., contractors—Contract time expired 14th November, 1893, but was extended.
Two bores, Morce-Boggabilla Road, C. E. Mayes, contractor—Contract time expired 6th January, 1893, but was extended.
Three bores, Milparinka-Wanaaring Road, William Pickering, contractor—Contract time expired 10th June, 1893, but was extended.
Thirteen bores, Bourke, Walgett, and Angledool districts, Petrolia Boring Co., contractors—Contract time will expire in 1896.
The aggregate estimated amount of the above contracts is £69,000, including casing.
- (6.) Revenue collected by caretakers, £752 7s. 8d.; annual revenue from tenants, £450
- (7.) This expenditure, as nearly as can be approximately gauged, has been from 1890 to March, 1894, about £7,100.
- (8.) Sixty-four acres. The areas are being increased by the tenants.
- (9.) Eight are leased, yielding £450 per annum, to the following tenants:—Reynolds, Buckley, King, Davey, Howatson, Jenkins, M'Caughy, and Manser.

Question.

- (9.) GOVERNMENT TANKS WITHIN THE COLONY :—Mr. WILLIS *asked* THE SECRETARY FOR MINES,—
- (1.) How many Government tanks have the Department made within the Colony?
 - (2.) What is the total cost of construction and cost of management?
 - (3.) How many contracts are now let; what is the aggregate amount of such contracts; who are the contractors; and when will the contracts expire?
 - (4.) What is the revenue derived from these tanks since the commencement?
 - (5.) What has been the total expenditure for office management or supervision?
 - (6.) How many acres of land (if any) under crops, trees, or vegetables?
 - (7.) How many tanks are leased; and to whom; and what rent is derived from same?

Answer.

- (1.) Twenty-four have been constructed by the Public Watering Places Branch.
- (2.) Cost of construction, caretakers' wages, &c., £34,887.
- (3.) Three contracts are in progress, embracing two tanks and one well; £1,423; Messrs. Welsh, Best, and Drummond; the contract time for the several works expired on 6th, 11th, and 16th January, 1894, respectively.
- (4.) Revenue collected by caretakers, £610 5s. 1d.; annual rental from tenants, £270.
- (5.) This expenditure, as nearly as can be approximately gauged, has been from 1890 to March, 1894, about £10,500.
- (6.) Approximately, 1,600 acres cultivated, 2,000 ready for plough, 4,000 scrubbed and ring-barked.
- (7.) Four of the above twenty-four are leased to Messrs. Fingleton, Gunn, M'Keown, and Farquharson; annual rental, £270.

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

ARTESIAN WELLS IN THE BULLOO AND DARLING
RIVER BASINS.
(PROGRESS REPORT ON).

Ordered by the Legislative Assembly to be printed, 2 May, 1894.

The Chief Engineer, Water Conservation, &c., to The Under Secretary for Public Works.

Artesian Bores west of the river Darling.

THE accompanying report by Mr. Czarlinski is the outcome of a request made by the Minister that a competent officer should be sent to inspect all artesian bores in the north-western district. The only official report previously available was a compilation of information and statistics from various sources. On such an important subject as that of artesian boring the value of a report prepared after careful inspection of the bores and inquiry into the circumstances connected with them was obvious.

Some of the facts brought to light in Mr. Czarlinski's report are of great importance, and show the necessity for dealing in a scientific manner with the construction of artesian bores.

It is necessary to explain that the numerous excellent photographs* which accompany the report were taken and enlarged by Mr. Czarlinski personally. In addition to this, the chemical tests to determine the hardness of the waters were applied by Mr. Czarlinski, who carried out all the arrangements of his tour single-handed, and thus brought its cost to the lowest practicable limit.

Regarding the conclusions arrived at, and the information furnished, a brief statement of their outline is necessary. In the basin of the Upper Darling we have what may be compared to a great sea of alluvial deposits. This sea of alluvium extends far north of the Queensland border. The alluvial deposits extend up the river valleys like estuaries, and in many cases cover part of the watersheds. Beneath this sea of alluvium are the hills and valleys of former geological periods. These points are well illustrated in the ideal section included in Mr. Czarlinski's report, which explains all the ordinary phenomena of artesian flow. Among important matters brought to light in the report is the necessity for care in obtaining approximately the level of a site before starting an artesian bore. The importance of this is well illustrated by the success of Messrs. Killen, of Elsinora, who, in view of the experience gained from two bores which did not overflow, fixed on a lower site in the same neighbourhood, and obtained a large overflowing supply.

It is clear from the report that the precaution taken in this case would have been useful if adopted in others. Another point explained in the report is the advisability of not putting bores too near one another, and not putting down bores in the immediate neighbourhood of mud springs. The necessity for properly gauging the flow of artesian bores is shown by the incorrect and contradictory reports on this subject, which have been published from time to time.

Among other points dealt with in the report are the importance of charting the correct position of bores, the objection to allowing water to run to waste, the objections to carrying the casing too high above the ground, the permanency of the supply of water, and the small proportion of absorption area required to account for the artesian flow. Regarding the last two points it is sufficient to state that there is every reason to believe that only a small fraction of the available artesian supply in this Colony has yet been tapped.

Among the more important conclusions to be drawn from Mr. Czarlinski's report are:—

- (1.) That in selecting sites for bores the relative level of the ground should be at least approximately determined.
- (2.) That sites of bores should be accurately charted on record maps.
- (3.) That the supply from artesian bores should be accurately gauged periodically.
- (4.) That there should be a law under which the following points should be provided for:—
 - (a) That sites for bores should be approved before boring is allowed to be started.
 - (b) That in fixing sites care should be taken not to have them too near mud springs or other bores.
 - (c) That waste of water should be prohibited.
 - (d) That all owners of artesian bores should be required to furnish returns giving details of the bores, and of the amount of the supply of water, and the uses to which it is put.

* It has not been deemed necessary to re-produce these photographs here.

Mr. Czarliuski was instructed to collect as much information as possible regarding the natural features of the district in which his duties lay. In attending to this he has afforded the necessary data for charting on the maps numerous features in the basins of the Bulloo and Paroo Rivers. Mr. Czarliuski's report is a very valuable one, and will be most useful for reference in connection with bores yet to be put down.

H. G. MCKINNEY,
Chief Engineer.

28th February, 1894.

Progress Report on Artesian Wells in the Bulloo and Darling Rivers Basins.

BEFORE proceeding with the description of the artesian wells visited by me, I think it will be found convenient and necessary to touch upon current but wrong theories on the subject of the flow of artesian waters, as well as to give in a concise introductory note the theory as it is accepted by scientists, and which has been proved true on mathematical principles as well as by practical experience.

My reasons are the following:—

- 1st. A wrong conception of the phenomena connected with the artesian flow of water, and principally of the acting force, is apt to lead—and in the course of my inspection I have found has led—to unnecessary expenditure on bores, private as well as Governmental, in places which some knowledge of the subject would have shown *a priori* to be unsuitable.
- 2nd. In my observations I have been guided by the theory adopted by professional men, and in condensing it here, many tedious repetitions will be saved in the course of my account of these observations and deductions from the facts elicited.

Wrong theories.

The fact of the considerable rise of the water in the bores, and in many instances to such a height as to cause an overflow above the surface from depths reaching 3,000 feet, has been attributed to various causes incompatible with known physical laws. Thus one of the theories is that at the beginning of the solidification of our globe, water may have gathered under the cooling surface, in a basin of gigantic dimensions, and that the motive power throwing the water up, when tapped by a bore, is the compression this same water has had to undergo in consequence of the contraction of the earth crust through the cooling process. Propounders of this theory are naturally led to the belief that the water discharge is only temporary, and will fail as soon as there is sufficient relaxation of the compression. The premises being erroneous ones, the consequences cannot happen through such a cause. Water being incompressible the earth crust would have burst first. To the incompressibility of the water, the power of the hydraulic press is due.

Others while admitting the water to have its origin in the rain now falling, believe it to be thrown up by the centrifugal force engendered by the rotation of the earth. If this be true, it is perhaps a wonder why our buildings, ourselves, and everything else on the surface of the earth, where this force is greatest, are not subjected to the same law.

A theory which may look more rational at first is the one attributing the rising of the water to steam pressure engendered through the heat at great depths. Supposing the water in reaching these deep regions to be turned into steam, it would naturally rise at first in the form of steam, but in the passage upwards the steam would get condensed and return to the form of water. The centre steam bubbles cooling slower and being lighter would therefore find their way through the heavier water to the top. If we take the instance of a steam boiler, everybody knows that the steam is engendered nearest to the heating surface, and that the steam bubbles rise through, and to the surface of the water, and that if the pressure of the steam rises above a certain tension, the steam escapes into the air through the safety-valve, but no one has ever seen the steam remain inside and throw out the water, for the simple reason that what is lighter goes to the top.

There are, probably, other extraordinary explanations in the minds of persons trying to unravel a mystery long solved in the most simple way, and by the aid of such a simple and well-known law of nature as that of gravity.

Theory accepted by scientists.

Based on this law alone, Dupuit and Darcy, two engineers with world-wide reputations, have expressed the flow of artesian waters in a mathematical formula, and the results obtained have been fully proved to be correct for all practical purposes by direct experiment.

Imagining a number of cups of different sizes placed one inside the other, and the spaces left open between them filled with water, then a hole pierced in the centre, it is evident that the water will spout out with the tendency to attain its hydrostatic level. Successive layers of the earth from the surface towards its centre, strata permeable to water alternating with impermeable ones, have been curved by the rising of the mountains. The raised ends of the strata crop out on the slopes of the mountains that tore them up, the oldest being nearest to the summit. The permeable strata there absorb a portion of the rain water. As they fill up the open space in the strata they come to a position of imprisonment between the over and underlying impermeable strata. They then have realised the conditions of flow in closed conduits, but of very great dimensions, and with a motion restrained by the presence of materials through which they must filter. Tapped by a bore they must rise, and will flow over the surface where the hydrostatic level is higher than the surface. Such waters are artesian, and the described conditions are necessary to make them so.

Diagram No. 1.

Diagram 1 shows a section from near the foot of the mountains, to the sea, and which though ideal and of course not to scale, I have designed from conditions I have found on my tour of inspection. In reality it is not necessary for the artesian water-bearing strata to empty into the sea; they may discharge at the bottom of rivers, or end in natural artesian springs or mud springs. The Youleen Springs in the Paroo Basin, of which particulars will be given further on, are undoubtedly a group of such springs. Plate 8 represents a photographic view of one of these, and plate 9 a large reservoir in Youleen Creek filled from these springs. Plates 10, 11, 12 show mud springs.

Curves of pressure.

If a series of bores were executed in the direction of the flow (*Diagram 1*), and the water allowed to rise in tubes of indefinite height, and then lines were drawn through the points at which it stops rising, the curves obtained measure the pressure of the water for each stratum. The curve A B C D will always be below the horizontal A E, a result due to the loss of head through friction of the filtering mass of water, the amount of loss being measured by the difference of level from point to point. Uniformity of section throughout a conduit filled with materials of the same co-efficient of permeability, would give a uniform loss of head which would reduce the curve to the straight line A D. The

The last conditions are, however, never realised, the permeable strata are found sometimes wide, sometimes contracted, here thin, there deepening into hollows. The filling material is of various porosity; gravel offers different facilities to the motion of the water from sand or any other material. Again, the space may be free from obstruction altogether, as in a grotto or a pipe which may be syphon-shaped, and acting like one. This variety of condition of shape and matter cannot but seriously affect the form of the curve, or more correctly surface of pressure.

Under the first artesian stratum there may be one or more similar strata. Considering their necessarily more elevated area of absorption, it will seem probable that their water-yielding capacity should be superior, or that the water should rise higher. This is, however, not always so, everything depending upon the variation of their respective sections. In two bores in close proximity to each other, and drawing on the same artesian strata, the difference in the height to which the water will rise cannot be great, as the relative height of the mountainous country to the development in length of the plains is insignificant.

As said before, problems in relation to artesian bores may be solved by calculation. A consequence of the facility offered to the water to escape through a bore will be an immediate modification of the original form of the surface of pressure. If the bore tube is cut some distance under the surface of pressure determined by the point P (where the water stops flowing), a discharge will take place which must be proportionate to H (Diagram 2).

The water converging from all around the bore towards its lower opening, the surface of pressure will assume the form of a convex-shaped cone, with the outflow opening of the bore tube as its summit. It is the meridian of this cone that has been expressed in an equation. One of the factors is the distance from the bore to the point of junction of the curve with the primitive line of pressure, which is evidently at the point where the influence of the discharge from the bore ceases—a very important point to know, and which can only be accurately ascertained by experiment. This distance in the case of the Paris Grenelle and Passy bores has been found to be $2\frac{1}{2}$ miles (4,000 metres). From that formula is deducted another, for the calculation of the discharge.* Notwithstanding the difficulty in the way of using these equations their results are of great importance, as they undeniably show that:—

1. The curve of the surface of pressure is independent of the discharge, the thickness of the filtering stratum, and the co-efficient of permeability.
2. The discharge is dependent on the thickness of the water-bearing stratum, the head—that is, the height from the outflow to the original surface of pressure and the degree of permeability. This last result clearly shows the mistake so often made with some bores in this country, in unnecessarily letting the water flow out a great height above the ground.
3. The diameter of the bore does not materially affect the discharge, as in doubling it the flow obtained is only increased about 8 per cent., which is no gain if the great increase in the cost of boring and casing is considered. The diameter must, however, not be too small, as it would produce great friction in the ascensional movement in the bore. With the proper diameter the loss of head due to this friction is only about 2 per cent. of the loss due to filtration. Some engineers, however, doubt the correctness of the theory under this point, as they consider that the distance (L) may not be so great in proportion to the diameter as believed, but the following practical instance fully confirms the theory. The lower part of the tube in the Grenelle bore having been bent, a considerable loss in the discharge was noticed, due to accumulation of debris which could not be cleaned out. To remedy the evil, the casing was pierced at the bend, and a second pipe lowered to the water bearing stratum; however, as to some height at the bottom of the bore an empty space had formed itself, this second pipe, unsupported on the sides, gave also signs of deviation. It was then decided to fix the tube in the solid ground by means of an iron point at its lower end. This was done, and although the water now has no access from the bottom, but only by slots cut in the side of a pipe of smaller radius, and although this pipe is, moreover, obstructed by a square bar of iron in its centre, the discharge has increased to its former volume.

It has been seen that the effect of a bore is to lower the curve of pressure over a certain distance L (Diagram 2), this distance then measures the area inside which the bore will exercise an influence over the flow of any other bore. Supposing a second bore C has been pierced, it will not discharge any water unless the outflow is allowed to take place, below the curve of pressure due to the first bore. Thus, if the pipe were cut at the point "A" there will be no discharge although there would have before the existence of the first bore. In C, there will be a flow, but immediately the flow from the older bore will be affected, and this last will stop running altogether if the pipe of the second bore is cut in C, as the curve of pressure produced by the new bore will pass through the opening of the first bore.

If, as represented in Diagram 3, a number of wells are bored on a circle round a central bore "O," and the water let rise in pipes in indefinite lengths, the water will assume, in each of these new bores, levels corresponding with points on the meridian of the surface of pressure created by the flow of the central bore. Of course these levels, A, B, C, and D will be lower than the original surface of pressure, and their relative heights will depend upon the radius of the circle and the position of the bore. If now the pipe of the central bore is sufficiently lengthened to stop the flow, the effect of the then raised surface of pressure will be to cause flows from all the bores in the circle, and the sum of their total discharges will be a little less than the volume discharged by the single central bore.

If all the surrounding bore-pipes were cut sufficiently low the central bore, or any group of inside bores would cease running, and, of those on the perimeter, those on the upstream side will give more water than those on the down stream side.

$$2\pi RH$$

* $Q = \mu' \log \frac{\lambda}{R}$ in which "Q" stands for discharge, "Z" mean thickness of stratum, "λ" mean distance in lieu of "L," "R" radius of bore, and " μ' " = $\frac{\mu}{m}$ in which " μ " coefficient of permeability, "m" proportion of empty to filled space in the permeable strata, "H" for head. This clearly proves the small influence the diameter of the bore has on the total discharge, for "λ" being always an enormous quantity in proportion to "R," $\frac{\lambda}{R}$ is always a very great number; but the difference of logarithms of great numbers is always very small.

The influence of bores on one another, sometimes even when separated by considerable distances, has also been proved true in several cases—notably the reduction of discharge from the Grenelle well by the Passy bore, the distance between the two being $2\frac{1}{4}$ miles.

Protection of bores by legislation.

The circumstances are perhaps such as to call for legislation to protect existing bores in this country. Private bores executed by pastoralists in the resumed areas are generally protected by a 10,240-acre reserve. This may not be sufficient, as even when the bore is placed in the centre of the area, the distance from the boundary would only be 2 miles, which is somewhat less than the distance separating the two Paris bores mentioned, and it has been by no means yet proved to be the extreme limit of reciprocal action. In any case this is sufficient indication to conclude that the minimum distance between two bores should not be under 5 miles. In several cases on pastoral holdings I have found the bores situated right in the corner of the reserve, as for instance Brindigabba No. 2 bore with an outflow at the height of about 18 feet above the surface. A bore put down close to it, and allowed to run out above the surface would ruin this bore.

Experiments with Colonial bores.
Appendix A.

A great opportunity of making experiments in this Colony in that direction has been missed when Toorale bore No. 5 was made. It is 45 chains distance from Goonery Government bore, on the Bourke to Wanaaring Road. (See sketch.) Toorale No. 1 bore, although at the greater distance of $5\frac{1}{2}$ miles, might possibly yet, by simple, but careful observation, be found to be situated in the mutual influence sphere of these three bores.

The Government and Toorale No. 5 bores yield trifling supplies. Toorale No. 1 is an important water source of 360,000 gallons per day. All three are shallow bores. From now obtainable data it is impossible to draw accurate conclusions. In the Chief Inspector of Public Watering Places' report for 1891, on folio 12, the discharge of Goonery bore is stated to be 24,000 gallons. According to the Appendix 15 to the same report, it is, however, only 1,000 gallons, but by the information I gathered before I started on my tour of inspection, from the Government Statistician's Office, as supplied to that office by Mr. Boulthbee, the discharge is 12,000 gallons. I found it to be last August 2,460 gallons per day, and a licensed surveyor, who, at the time when the bore was completed, was engaged in that district, informed me that the bore then yielded 2,500 gallons, or practically the same as I found it to yield myself.

Bores close to mud springs.

For similar reasons, with regard to position of bores, the sites should not be chosen too close to mud springs, as these are natural artesian outlets.*

The Goonery, Warroo, and Youngarina Government bores are within a few chains of such outlets. The Goonery bore I have stated to be insignificant. The Warroo and Youngarina bores I was prevented from measuring, as reported. In Mr. Boulthbee's report, folio 12, the Youngarina bore is stated to yield 175,000 gallons per day, although, from section , Appendix 9, it would appear that a supply of half a million was struck. The Warroo bore is stated to give 17,000 gallons. However, several gentlemen engaged in pastoral pursuits, and others in the district, assured me that these bores only yield these supplies after having been shut off for some time, but that, when running, the supply very soon falls off. I intended, therefore, to gauge these bores in the evening and regauge the flows the next morning after a whole night's flow. Important information would thus have been obtained. If, in some instances, bores close to mud springs afford a good permanent supply, this will be due to circumstances which I have not had the opportunity to study. In any way the majority of cases speak against the placing of bores under the influence of mud or other artesian springs.

Importance of correct charting of position of bores.

It also follows from what has been said before that the actual position of bores should be defined as accurately as possible, otherwise, the falling off or total failing of such wells might be ascribed to causes not existing in reality. Referring to Appendix 40 in the report already named, the Wangamana Station bore is situated 27 miles east of the 75-mile post, on the Bourke to Wanaaring road. This is a position about 4 miles west of Toorale bore No. 2, and about 5 miles a little east of north from Toorale No. 1 bore, and on Toorale territory. Toorale No. 2 bore I found to yield 20,000 gallons per day, and I was informed that it had dwindled down to that quantity from over 200,000 gallons. An idea of its present small discharge might be gathered from the photo. given with the description of the bore. A perfectly legitimate conclusion to arrive at in an office in Sydney, would be that the Wangamana bore has ruined Toorale No. 2 bore. In reality the Wangamana bore is $29\frac{1}{2}$ miles, by a line bearing 294 degrees 50 minutes away from this bore, or $12\frac{1}{2}$ miles true north from the said 75-mile post. The position here now indicated has been fixed by accurate survey.

Permanency of supply.

The supply from artesian bores does vary but very little, whatever the extreme limits between dry or wet seasons might be. They consequently never fail, except from causes already dwelt upon, or through silting up at the inflow, or other obstructions gathering in the ascensional tube, and which are generally removable. When the artesian supply is freshly struck, it generally gives for a short period a discharge superior to that which would be found some time later. It is the supply which may be called normal that varies little. At this place I intend, however, to confine the remarks to the influence of seasons, and endeavour to dispel some wrong ideas about the great height of mountains, and voluminous rainfall thought to be necessary to give the magnificent flows already obtained here, and in other parts of Australia. It is not necessary to search for our source of supply in New Zealand or Asia. In connection with the Grenelle bore, it has been found that the loss of head due to filtration in the stratum is only about 172 feet.

Supposing a whole year's rainfall fell in one day, we would be able to gauge the extreme limits of variations of the level of the artesian strata.

This height will correspond to the absorbed portion of rain multiplied by 2, 3, 4, 5, or 6, co-efficient of permeability of the soil. Taking a yearly rainfall of only 10 inches at the mountains, we can certainly admit that if this rain came down in one day 5 inches would be absorbed, for the particular strata we have to consider are naturally very porous. Thus, with a rainfall of 10 inches, the extreme variation of the level would be about 30 inches. With a rainfall of 30 inches, the extreme variation would be about 8 feet, or only a very small portion of the head of pressure. In reality the rain is divided over a certain number of days, and although these may be far apart, the variations of the rain have a much smaller influence

*They soon cease to run after the outburst, which is accompanied with detonations audible in a radius of 15 miles. However, they continued to discharge water, which was absorbed by evaporation from the moist mud on the top, where a small quantity of water can always be drained off. I have seen in the Queensland portion of the Paroo Basin whole valleys covered over an area of several square miles with these mud mounds, notably on Boorara Station.

influence on the variations of the level of waters feeding the artesian strata; consequently the head of pressure and the discharge must remain about the same. There is, however, the condition that the outflow of the bore is sufficiently low in regard to the upper level of the water. This furnishes another reason why bores should be placed on low ground, and the tubing not unnecessarily elevated above the surface.

An instructive lesson might, perhaps, be learned from a comparison of the quantity of water discharged through an artesian flow with the amount of rain absorbed by the infiltration area, as it might serve as an indication of the possibilities in the dry back country. The limits of the geological formation at the heads of our artesian supplies are not by far yet sufficiently defined to allow of an Australian example. Referring then, again, to the Paris basin, the area of infiltration feeding the bores is known to cover 2,125 square miles, equal to about one-fourteenth of the whole area of the basin, which is 30,380 square miles. The supply of a whole year from one bore discharging 1,000,000 gallons daily will cover that infiltration area with a sheet of water 0.118 of an inch; in other words, 5 inches of rain absorbed would feed 423 wells flowing continuously at the rate of 1,000,000 gallons per day.

With the same quantity of rain absorbed by the infiltration area and a similar proportion of this area to the whole of the Bulloo River basin, 208 such wells would flow in the New South Wales portion of that basin.*

The supposed quantity of 5 inches is evidently much below reality, as it corresponds to the minimum falls in the driest parts of the basin, while the rain to be considered is that at the heads, where it is not an uncommon occurrence to get that much rain in a day or two. At present the flowing wells in that basin total only six, two in Queensland, and four in New South Wales. Of these, the most abundant—the Thargomindah bore—gives out 1,000,000 gallons per day. I have no particulars of the other bore in Queensland. It is said to yield about 200,000 gallons per day. Of the New South Wales bores, Elsinora No. 2 discharges about 500,000 gallons per day; Binjiwilpa bore, on Yancannia Station, 130,000 gallons; the Gilwapa, or Yancannia No. 2, and Salisbury Downs No. 2 bores yield small supplies of 1,440 gallons and 2,160 gallons respectively.

Passing to the consideration of the position the bore should occupy with regard to the configuration of the surface of the soil, and the influence exercised by the relative position within the boundaries of the artesian basin on the flows and depths of bores, it will be noticed on diagram I that in the position marked 1, near the head of the aquiferous stratum, or in any other position near the outskirts of that stratum, the bore will be comparatively shallow and no other waters will be met with. A flow will be obtained, and it might even be copious, as the curve of pressure passes sufficiently high above the surface of the ground.

In II, first, some water from local or neighbouring soakage, but not, or only slightly rising, will be pierced. It is often salt. The next water struck is the upper artesian, which will just rise to the surface as the curve of pressure of that stratum just cuts the level of ground. But a good flow can be obtained from the lower artesian strata.

In position III the depth of bore will be much less, a good flow being obtained from the first, and a still greater from the second water stratum.

In position IV, near the centre of the basin, no flow will be obtained, although the well was bored to the greatest depth, and the same artesian strata tapped; but a comparatively slight displacement to the right would have brought the possible outflow above the ground, below both curves of pressure.

In V, with a bore of medium depth, a good supply will result from the upper artesian stratum, while from the lower one the water might, through reasons already stated, either not rise to the same height, or increase the supply only very slightly, as here the difference of the two curves of pressure cannot be great.

On the diagram the curve of pressure has been given a position ending in the sea level, which will happen as a rule when the waters are discharged into the sea. If the level be superior, the result will be a fresh water spout through the salt water. But if it empties into rivers, or water-holes in rivers, the curve will coincide with the respective water-level, or, if higher, produce a geyser. We have no such in this country.

From the sections and descriptions of the particular bores, an idea might be gathered to which of the described types they belong. But it is appropriate to say here that to the injudicious choice of bore sites is due the theory about the absence of artesian water on the west side of the Paroo River. In fact, from none of the Government bores between Wanaaring and Milparinka and at Tibooburra has, so far, a flow been obtained.

Nor were Salisbury Downs in three, Bootra in one, Urisino in two, and Elsinora stations in one bore more fortunate. The desire to get flows at certain distances on a road or at the corner of four paddocks is natural, but there are other considerations to guide in the choice of sites for bores. At 7 miles west of Wanaaring begins the ascent of ridges that form the division between the Bulloo and Paroo Rivers watersheds. Between the 124th and the 125th mile-posts, or about 13 miles from Wanaaring, seems to be the highest point; thence to the 82nd mile-post extends a table-land of almost level plains, with only slightly rolling downs now and then, or over a distance of about 46 miles. At the 76, 78, 80, and 82 mile-posts again, higher desert sandstone ridges are crossed by the road, which runs almost straight east and west. Although so slight is the fall on the great plains that in Urisino territory no water-courses or depressions indicating such are observed, the general fall is from south to north—as parallel with the Milparinka Road, and on its south side run the divide of the waters draining north to the Berawinnia Creek. This creek, although very much silted up at its lower end, must, nevertheless, be recognised as a tributary of the Bulloo. On the south side the drainage is towards water-courses feeding, in times of thunderstorms, Yancannia Creek. This empties into Lake Yantara, a remaining depression of a once much larger receptacle of all the waters of a watershed closed on all sides, and in which the Bulloo River is the most important channel. From the description it will be gathered that the road over the table-land occupies almost the highest position in the whole district. Right on it, at about 121, 107, and 91 mile-posts Government bores have been sunk, the last mentioned is yet in progress, but although already approaching a depth of about 2,000 feet, no flow has, as yet, been obtained. A much better site could have been found about half a mile away from the present one.

Four

* Total area of the Bulloo basin is approximately 32,560 square miles; it is therefore a little greater than the Seine basin. Thirteen thousand six hundred square miles are within the territory of New South Wales.

Four miles south of the 83-mile distance is situated Urisino No. 2 bore; artesian water has been struck, but rising only to 85 feet beneath the surface.

Six miles on the north side is situated Urisino No. 1 bore; no flow is obtained, but the water rose to within 17 feet of the surface. Mr. Killen, of Elsinora Station, having a well bored, in which the water rose from a depth of 1,240 feet (*see Diagram*) to 65 feet from the surface, and hearing of a rise of water in Urisino bore to such short distance off the ground, before engaging in a new boring operation, took levels from his bore No. 1 to Urisino No. 1. He found a difference of 40 feet, his being the higher situated bore. He then decided to fix the new site at 61 feet lower than Urisino No. 1, and 101 feet lower than Elsinora No. 1. The result is a flow of half a million gallons 6 feet above the surface. From an examination of the diagram it will be seen that the main artesian veins struck in the three bores are the same. They rise to points on the same surfaces of pressure, as I was informed by the gentleman who executed the bore that the water rose in a test tube to some 30 feet above the ground. He was good enough to make this experiment at my request when I visited the bore before the supply was struck. The sketch also shows that bores Elsinora No. 1 and Urisino No. 1 are in the condition of type IV.

I am aware that several geologists advised to place the bores on top of ridges, on the plea that the sinking would be shallower. First, this is by no means certain, as the underground strata do not always even approximately follow the fall of the surface ground, over certain distances at least, although they do in a general way from the heads of the rivers, in the direction of the flow of the surface waters.

In the case of the Grenelle and Passy bores, the artesian conduit falls in the opposite direction, to the inclination of the surface soil. At Passy the bore is about 48 feet higher than at Grenelle, and the same aquiferous stratum was found to be 42 feet lower, or in total, 90 feet more boring was necessary to reach that stratum. In the second place, and not the least important besides geological considerations, there are, as I have endeavoured to show, other factors to be consulted.

Before closing these considerations on the question of artesian bores, I must yet mention a very simple graphical method of determining points of the curves of pressure. The method is illustrated in Diagram 4. On the vertical line, the heights of outflows are marked from which discharges of the same bore have been gauged, opposite in the horizontal direction are measured off to scale corresponding discharges. By joining the ends of these, and prolonging the line, the point of intersection with the vertical will fix the height at which the bore will stop flowing. In reality the line should be parabolic, but the difference with the straight is so slight, that for all practical purposes the straight line is sufficiently exact. If constructing such diagram the point of intersection is much lower than that found by mathematics, or the curve of pressure already known from another bore fed by the same strata, this would be an indication of escape in the casing. Diagram 5 illustrates the case. With bores of small flow the point could be found directly by screwing on an extra length or two of piping, and measuring the elevation of the water-level above a peg driven in the soil, which could easily be connected to by survey. Valuable information would now be to hand if the graphic method (by pipe lengthening) had been applied to each bore already existing in the country; as, in time, from the points so obtained, a whole network of curves, measuring the pressure of our artesian currents, could be plotted. From this, and the surveys and levels taken by this Department, a fairly accurate idea could be gathered of the suitability or otherwise, of sites for intended wells.

While it would be advisable to have a valve on each bore, the total failing of bores under a sufficient head of pressure is not to be feared. From what I said of their permanency of supply, it follows that they cannot be worked out like a gold or silver mine. But I have seen bores, the shutting down of which would mean their ruin. Such are bores, either with notable escapes at some point in the casing, or especially where water comes outside the casing right from the bottom. This would undoubtedly happen to Brindigabba No. 3 bore, and the Government bore at Kelly's Camp, on the Bourke to Hungerford Road, where the water outside the bore brings up with it fine sand drift. I would perhaps not have noticed this but for the bore being shut down.

At each bore there should perhaps be provided a fixed arrangement of appliances, according to local circumstances, for a periodical, easy, and accurate gauging of the flow. Out of the sixty bores visited I found it in two cases impossible to take the measurements, as the ground was too level over too great a distance to allow of the making of a prismatic channel for the measurement of the velocity or of taking proper sections. I could also not resort to the method of filling recipients, as there were none of any sort, nor was it possible, without a long ladder, to reach the top of the bore for putting a hose on.

Geological formations looked to for artesian strata are the cretaceous, the jurassic and the triassic. Any of these may be overlain by newer beds. The fact of the surface crust being composed of tertiary deposits does not render the particular locality unsuitable for a bore, if any of the artesian water-bearing formations can reasonably be expected to lie underneath. But to gain this knowledge, an inspection of the locality only would obviously be insufficient. The scientific data upon which the forecast of the chances must be based, can only be derived from a thorough study of the geological constitution of the soil over a great extent of country. That is why, in studying the artesian water possibilities in this Colony, it is necessary to also gain a good knowledge of those parts of Queensland where all the northern tributaries of the Darling and the Bulloo Rivers rise.

Tertiary, and even more recent deposits, overlies, in great patches, the cretaceous area on both sides of the Darling.*

Oolitic beds, of the middle or brown jura, by reason of their great porosity, absorb such volumes of rain, that where they are overlain by neocomian deposits (of which there is a great extent in New South Wales) they are capable of bursting these clay beds.

So far no indications have been found of existence of oolitic beds in this Colony.

Such deposits seem to exist in Queensland.

A bore, carried down into the triassic formation at the Naval Hospital at Rochefort (France), yields a flow of about 50,000 gallons per day, the temperature of the water being 108° Fahr. The comparatively small supply is perhaps due to the nearness of the sea. There are beds of the trias in New South Wales.

The water from an artesian source is generally very clear, by reason of the natural filtration it passes through. The deeper, however, it goes, the warmer it gets, and sometimes through dissolving great quantities of carbonic or sulphuretted hydrogen gases, it easily absorbs considerable quantities of mineral salts, which it still contains when it comes to the surface.

Rev

* In a report published as an appendix to the final report of the Water Conservation Commission, I expressed, seven years ago, the opinion that the presence of artesian water on this side of the Darling is undoubted.

Appendix B.

Shutting down of bore.

Gauging.

Artesian water-bearing formations.

Quality of water.

Few waters are so bad as to be detrimental in irrigation. However, acid waters are not favourable to vegetation; such as are heavily charged with sulphate of iron, while they are very injurious to grasses, may be used with advantage on calcareous soils for certain vegetation.

Waters containing great quantities of salts of lime and magnesia are liable to kill vegetation by choking the cells. Those containing abnormal proportions of carbonate of soda and common salt may be found unsuitable, at least for surface irrigation, by depositing it on the soil. However, a calcareous ground will be benefited by alkaline, and argillaceous soils by calcareous waters. It is therefore advisable to have the soil analysed as well as the water. In any case, the waters are more injurious when allowed to remain stagnant than when flowing. An irrigation field to be well laid out must permit of the water flowing over it steadily, and in equal quantities. I have found the waters of several bores—I may say the majority—to be heavily charged with carbonate of soda; in these cases a system of underground watering should perhaps be resorted to, as the deposit would chiefly take place in the feeding drains; these should be arranged so as to allow of the deposits of soda and salt being removed periodically.

For domestic purposes and boilers a much smaller quantity of salts of lime in the water is admissible. According to some authorities in chemistry, the limit for a drinkable water is 35 grains of solid residue per gallon. In France, a water for dietetic purposes must not mark over 20 hydrotimetric degrees, which corresponds to 11 grains, of lime or magnesia per gallon.

A very ready, and for practical purposes, very valuable test of the waters may be made by the hydrotimeter. It is an improved method based on Dr. Clarke's soap test. I have applied it to the waters of the bores visited, and the results will be found with the descriptions of the particular bores. One hydro-metric degree corresponds to 0.70 grains of salts of lime or magnesia, or both combined per gallon. The presence of carbonate of soda neutralises a portion of the salts of lime, and consequently such waters will mark a lower degree of hardness. Test by the hydrotimeter.

To illustrate the effect of the soda, I may mention that an English engineer residing in Paris is the patentee of a filter, which, by the addition of soda, reduced to 4 degrees a water marking originally 11 degrees and destroying a steam boiler. The owner of the boiler testifies that since he uses the so-treated water the incrustations have ceased. Reduction of hardness by soda.

The use of the hydrotimeter has to me been serviceable in choosing waters as types for complete analysis. The results of these made by Mr. Hamlet, the Government Analyst, will be attached to my final report, and a classification of all the waters will then be possible.

To the hydrotimeter is also due the important discovery that the quality of bore waters fluctuates with the seasons. Thus a diagram of weekly records of the hardness, and underneath, of the daily heights of the rivers at the head of the artesian strata, kept up for about three years, shows the hardness of the same water to vary from 9 to 12 degrees, corresponding to an increase of 25 per cent. in earthy salts. The minimum occurs after wet and the maximum after dry seasons. The effect made itself felt between six to twelve months later. Quality of water not constant.

I now proceed to the description of the bores, positions of which will be found on the accompanying sketch map. They have also been marked on the office county maps, the much larger scale of which permits a more accurate location.

2nd Part.—Description of the bores.

1. Basin of the Bulloo River.

UNUSINO Pastoral Holding No. 1 is situated on the plateau described in connection with the consideration generally of position of bores. The immediate surroundings are a level plain of hard, slightly sandy, red soil, timbered with mulga trees and scrub, white wood, fuschia, turpentine, emu, and other bushes, with a few scattered moolley apple-trees called in other districts grey. In the north-east, about a mile away, is visible a hill of rocks. I passed a similar stony outcrop between the bore and the 83-mile post on the Milparinka-Wanaaring road. The bore starts at the bottom of an 8-ft. x 8-ft. shaft 29 feet 6 inches deep. The depth from the surface to the bottom of the bore is 1,680 feet. The main water supply rises from a depth of 1,680 through 1,500 feet of 5-inch casing to heights varying between 14 and 19 feet (mean 16 feet 6 inches) of the surface of the soil. The variation of the level has been observed by several persons, but no accurate notice has been taken of its periodicity. It is simply attributed by some to the ebb and flow of the sea; by others, I saw in the Sydney press, it is taken as a proof conclusive of the variation of supply from bores. To my mind, neither of the two theories is correct. The sea has such effect only on subterranean waters when they are sufficiently near to the sea. This possible influence of the rising and receding of the sea level is well known, but the explanation is not called for here. If the other suggestion were true, Elsinora bores Nos. 1 and 2 should be similarly affected, as I have shown that the three bores are fed from the same stratum, or, in any case, from branches of the same main stratum. The phenomenon observed in the position of this bore indicates in the subterranean conduit the existence of a hollow from which the water is further discharged by a conduit of a shape and with the action of a syphon, discharging more water than the hollow receives in the unit of time, for, as the water is lowered in the hollow, the syphon ceases to act till the hole is again filled to the level of the high point of the syphon. Such configuration of the underground stratum in the neighbourhood of the bore would there produce the oscillation of level without affecting the levels of the other bores situated further away.

Experiments at two different times on the water-yielding capacity of the bore have been made by Mr. Fowler, the manager of the station, and Mr. L. V. d'Apice, licensed surveyor; they are represented graphically in the diagram here attached.* * Appendix C.

In comparing the curves representing the time occupied by the rise of the water per foot, it will be seen that the velocity in Mr. Fowler's experiment was constant—3 minutes per foot up to 7 feet, then 3 minutes 6 seconds per foot up to 10 feet from the bottom of the bore. Mr. d'Apice's experiment began at the height of 4 feet 6 inches above the pipe, but for corresponding heights he obtained much smaller velocities, as from 0 to 4 feet above his starting level they oscillate between 4 minutes 10 seconds and 4 minutes 20 seconds per foot; then they first very gradually decrease to 5 feet 4 inches; then rapidly to fill the last foot in the shaft it takes 29 minutes 15 seconds. The supplies available calculated on the basis of the two experiments are naturally different; while during Mr. d'Apice's the yield was 135,500 gallons at 21 feet 6 inches from surface, according to Mr. Fowler's velocity the discharge would have been at that height about 192,000. Altogether the curves of time and discharges are abnormal and prove the reality of the oscillation in the supply of this well. The

At 640 feet fresh water was struck in 20 feet of grey sand. At 1,325 feet from surface a water-bearing drift was struck, 125 feet thick. The water rose to within 56 feet of the surface. Most probably it is the Urisino and Elsinore stratum. No more water was found underneath. I found the hardness of the water to be 8 degrees. The water was, however, very muddy from the drilling.

There are some other Government bores in the Bulloo basin, namely, at Milparinka and Tibbooburra. I did not visit these, as, if the object of the bores was the obtaining of artesian flows, no money should ever have been spent on them, the formation belonging to the oldest in the country. It is perhaps obvious that no flows were obtained.

SALISBURY DOWNS Pastoral Holding No. 1.—Situation, on the west edge of a cane-grass flat, in sandy and undulating salt-bush plain, with sandy ridge on the east side. The total depth of the bore is 1,365 feet. The water rises in 1,315 feet of 5-inch casing to within 16 feet of the surface. There are three outer strings of casing left, viz., 850 feet 6 inches, 420 feet 8 inches, 100 feet 12 inches. The water flowed at the rate of 200 gallons per day just to surface. A pump in a few minutes lowered the level so much that the supply became intermittent, and yielding only about 2,800 gallons per day. Then the 6-inch casing was perforated at 840 feet over a length of 6 feet, and the present pumping supply of 45,000 gallons per diem was obtained, but at the same time the quality of the water was deteriorated, as the upper water is brackish.

The degree of hardness of the mixed water is $22\frac{1}{2}$, or unsuitable for domestic purposes or boilers. On the spoil heap from the bore I found blue clays, green sandy marls, and pieces of gypsum. The temperature when pumping is 108 degrees.

The bore has not been sunk deep enough, and it is also intended to deepen it, which is always a precarious and delicate operation; but in the position of this bore, only a short distance from the Bulloo flood-waters, a good supply should be expected.

The bore was put down in 1888, at a cost of about £3 per foot, by the Ontario Boring Co., of which the station afterwards acquired the whole plant.

No. 2 is situated in a wide salt-bush plain, with clay pans and broken sand hummocks. Coming from the south, on the east side of the bore, it turns northward to join the Bulloo flood-water country, which itself is there about 15 to 20 miles wide.

By this plain the Tiltabrianna Creek waters meet the Bulloo water in very heavy floods.

The total depth of bore is 1,568 feet; at 440 feet struck water very salt, which rose to 18 feet from the surface. At 495 feet, more of similar water was met. Fair water, said to have flown over the surface at the rate of 14,400 gallons (by Appendix 37 of Mr. Boulton's report, 17,000 gallons), was struck at 940 feet, increasing at 990 feet, but it got salt through salt-water getting in through the casing. The fresh water was struck at 1,568 feet, in a coarse sand with quartz pebbles under a bank of green sandstone 25 feet thick. The bore was lowered 2 feet in the sand. The flow is said to have been 21,000 gallons, which soon went back to 7,000 gallons per day, it is now 2,160. The loss may be due either to escapes, or, more likely, by some rough pebbles obstructing the inlet. This supply runs into a timbered tank with galvanised iron lining of 6 ft. x 20 ft. x 20 ft., through 1,513 feet of 5-inch casing resting on the green sandstone.

The supply from the upper water runs out at the surface from the outer 8-inch pipe 520 feet long. It runs away over the plain, and it is heavily charged with sulphuretted hydrogen gas, which burns freely on the surface. I found this water to mark in the hydrotimeter 158 degrees. The fresh water, of a hardness of $8\frac{1}{2}$ degrees, not yielding enough for the supply of stock; a pumping-station is built, the whole arrangement of which is represented on plate 17.

The temperature of the naturally-flowing fresh water I found $103\frac{1}{2}$, and that of the salt water 100. I was informed that the flow of the deeper water was preceded for about one hour by the flow of black oil. There is no reason why the bore should not have been proceeded with deeper down.

Down to 1,340 feet the boring was done by contract, when the station bought the plant. Cost about £2 15s. per foot; date of boring, 1889.

No. 3, about 3 miles west of Nunga Creek; it is in the centre of a basin formed by low ridges all round, and being towards the heads of drainage, it is too high up. The red sand-soil plain about the bore is open mulga, white wood, turpentine, &c.

The bore is 1,404 feet deep; at 825 feet small supply of very good water was struck in 10 feet of green sand. The water, rising to 120 feet from the surface, comes from 210 feet of micaceous sand-drift, forming the bottom end of the bore. It is very good in taste, and shows only 3 degrees of hardness. The temperature is 103, and said to get warmer after longer pumping.

The pumping arrangements consist of a 3-inch pump and 8 horse-power engine, with a stroke of 22 inches, and about thirty-eight to forty-two revolutions per minute, corresponding to a supply of about 35,000 gallons per day, drawing at a depth of 300 feet, the pumping will lower the level 20 feet, when it remains stationary.

The site for the bore has been chosen by consideration of convenience to water several paddocks, Appendix D. as shown on the sketch.

The bore is represented on plate 18. Started on the 5th October, 1891, the boring was stopped 10th July, 1892. Borers, Messrs. Dean and Chappel. The casing left in the bore is 12 feet of 12-inch, and 1,400 feet of 5-inch.

No. 4, or Limestone Well bore, started in October, 1892, was in progress at the time of my visit in last October (1893). It starts at the bottom of a shaft 6 feet by 3 feet and 98 feet deep. This was an old well in which the water was standing 40 feet from the surface. During the boring the well water disappeared in dry sand-drift passed through. Finally, as I was later informed, at 1,310 feet water was struck in a sand-drift. Till then none had been met with. The bore was continued to 1,344 feet in slate. Pumping at the rate of 40,000 gallons per day during one week, the level of the water, which rose to 140 feet from the surface, was only lowered 4 feet. The casing left in the bore is 150 feet of 5 inch, and 1,278 feet of 6 inch.

The bore is situated on a wide red-soil box flat, being part of one of the head tributaries of Yancannia Creek. The surrounding country is slightly scrubby, with higher stony ridges, and over a great extent unsuitable for a bore if a flow is desired.

No previous information has been published on the last two bores which have been put down with station plant at the rate of 12s. 6d. per foot to 1,000 feet, 15s. to 1,600 feet, the station supplying wood, water, and casing.

BOOTRA Pastoral Holding.—One bore located towards the heads of a creek on scattered box and mulga-tree plains. No detail record of strata passed; they are stated by Mr. Dean (the bores) to have been grey and blue clays and shales, with bars of quartzite. I have found that very often the rock so called is desert sandstone, and was by one borer designated "basalt."

The total depth of the bore is 1,100 feet. It starts at the bottom of a well 6 feet by 3 feet and 300 feet deep. The only water besides the surface well water met was at 960 feet, in 4 feet 6 inches of white sand-drift, with light green sandstone above, and grey "cretaceous formation" (*sic*, probably shale), with bars of "quartzite" underneath. The water rose to 80 feet from the surface; 820 feet of 5-inch casing stands out 26 feet above bottom of well. The water is lifted by a whim, as shown on plate 20.

The water-test, after reducing the water level by 5 feet, marked 5 degrees hardness.

The bore was commenced 11th June, 1891, and finished 10th September, 1891.

There were no previous records published of this bore. The position of the bore is not advantageous, but once started it should certainly not have been left off in the middle of the cretaceous beds.

YANCANNIA Pastoral Holding No. 1, or "Binjiwilpa" bore, is situated on the north-eastern side of an old man salt-bush swamp, in which, by sinking at a depth of 9 feet, fresh water can be got anywhere; but there is no natural spring, as marked on the county maps. A hole made by the blacks may have been mistaken for such. The depth of the bore 203½ feet. The water struck at this depth under grey sandstone being quite sufficient for the watering of stock, the boring was stopped. The flow rises by a 10-inch pipe through the bottom of, and into a 200-gallon tank; thence it is led by an iron flume 200 feet long to a drain on the side of a rise on the edge of the swamp. By this drain it reaches Maroola Creek, which itself drains towards Lake Altaboolka, but the creek is so level that the bore water, when required, is let run in the opposite direction; the soil is so porous as to cause great loss.

The water carries an enormous quantity of gas, which will burn for some time under the cover of the tank.

I found this supply, estimated in Appendix 54, Mr. Boulton's Report, at 480,000 gallons, to be 130,000 gallons. Possibly the water might escape through the pipe not being tight in the tank. However, the embankment supporting the tank and iron flume showed no signs of such being the case. The hardness of the water is 11 degrees, and the taste is slightly salt. Temperature, 85 degrees. Bore, commenced 7th January, 1891, was finished 7th February, 1891.

No. 2 bore (plate 21) is on the side of a sandhill, near the left bank of main channel of Yancannia Creek, although it is called Cockulby Creek, and near a tank excavated in the channel of the creek, into which the small supply of 1,440 gallons per day is let run. The total depth of the bore is 1,130 feet, of which the last 628 feet are through rock, declared, it appears, in Melbourne as "bed" rock. The water comes from a depth of 485 feet. It is in taste similar to that of No. 1, and also marks 11 degrees of hardness, but the temperature is only 80. The position of this bore is I think much higher than No. 1. This bore was commenced in March, 1891, and terminated June, 1893, with nine months' interruption. There are 500 feet of 6-inch casing.

About 150 feet north of this bore, in a shaft of 15 feet x 12 feet x 4 feet, two other bores were tried. One, 270 feet in sand-drift, was abandoned through inability of getting through with the 8-inch casing. When the other, 5 feet from the last, was down 120 feet, the soil between the two bores caved in, and, meeting with the same difficulty, the plant was removed to the position of the present bore. On the spoil heap I found yellow clay, kaolin, and pieces of gypsum, although the last is not mentioned in the records of strata passed.

No. 3, on sandy plain interspersed with swamps, the bore was, when I visited it, in progress at a depth of 665 feet. At about 440 feet water was struck, which rose to within 80 feet of the surface. It was very salt and bitter, and marked over 200. I have learned since from Mr. Reid, of Yancannia, that no progress had been made since, owing to the departure of the borer, but that it is intended to go deeper.

THARGOMINDAH Queensland Government bore, situated in the centre of the Bulloo Basin, in which it is the deepest bore, is about 60 chains a little west of the north of the town, on a level, stony, and gravelly plain, covered with thin and small mulga scrub. The red, strong loam of the surface is only about 2 feet thick, with a hard, sandy cement, mixed with oxide of iron. The bore is 2,650 feet deep, out of which flows the water at the rate of 1,000,000 gallons per day through a 3-inch elbow, about 4 feet above the ground. There is a flow-regulating valve, but it is almost always full on. From the bore the water runs all over the plain in small drains, of which two cross the town, and empty into the Bulloo River. As it is polluted by pigs and all kinds of animals the residents do not use it at present. About 300 yards from the bore some of the water is stored in a reservoir formed by an earthen dam. It is there allowed to cool for several hours, when it is led on to a 9-acre crop of oats. The irrigation is laid on in a very rudimentary style, the water running hither and thither; and the whole preparation of the soil consisted of one ploughing. The result is, therefore, very patchy, but where the proper amount reached and flowed the crop was unrivalled.

The Chinamen complain that the bore water mixing with the river water used by them is killing their melons. Somewhere else a certain creeper suffers from the water, the leaves all curling up, while another, of a wax plant kind, is growing luxuriantly, and young pepper-trees in a dying condition were brought back to life by the use of the bore water.

Its temperature I found 160 degrees, and the hardness 3 degrees, with a good but slight mineral taste. The water leaves on the edges a black, seemingly iron, deposit.

The first water was struck at about 2,450 feet, flowing at the rate of about 40,000 gallons per day; at 2,510 feet the sandstone yielded about 200,000 gallons; at 2,550 feet, about 400,000; and the supply increased to the last. The residents desired to have the bore made deeper still by another 50 feet, the Divisional Board offering to pay the expenses. The Government did not fall in with the proposal.

The bore is now rented by the Divisional Board for £50 for nine months, at the end of which it is intended to either purchase the bore or to get a long lease, when the water will be laid on properly to the town. Photograph plates 23 and 24.

2. Basin of the Darling River, watershed of the Middle Paroo River and Cuttaburra Creek.

WANGAMANA Pastoral Holding.—The bore is situated in a level red soil plain surrounded at some distance by stone and sand ridges. The country is open—mulga, corkwood, bloodwood, box, and beefwood. The position is near the outer edge of the country, of which the surface waters would be drained into the Cuttaburra Creek, and at a height of 386 feet above sea-level. The bore starts at the bottom of a shaft of 10 ft. x 4 ft. x 6 ft. in clay. The shaft is not timbered. A small supply was struck at 1,050 feet. The next water flowing over the surface was met with at about 1,270 feet in sand and gravel drift. The bore was continued to the depth of 1,605 feet, but no more water being obtained, it was stopped there and slots cut in the casing at the 1,270 feet level, where the present supply is drawn from. Appendix 40 to Mr. Boulton's report gives the discharge as 224,000 gallons and as coming from the 1,600 level. My measurements of the flow give 12,960 gallons per day, and Mr. Howatson, the owner of the station, stated that he had never known the flow to be over 33,000 gallons. He had noticed the falling off, and attributes it to some obstruction at the perforations for letting in the water. The outflow from 6-inch casing is about 2 feet above the ground. The water is let into a trough at which 25,000 sheep were watered for four months.

The temperature is 100 degrees, and the hardness 3 degrees; the taste of the water is very good. Vegetables have been raised with it with great success.

The bore was commenced in December, 1888, and completed only in March, 1890, through some trouble to pierce a boulder with the 6-inch casing. The 5-inch casing was then used. The total length cased is 1,500 feet. Total cost, £2,800.

TINCHBROOKA Government Bores.—They are both in the same shaft, about 2 feet apart. The shaft is situated about 25 chains north of 75 miles 25 chains (Bourke-Wanaaring Road) on the western edge of Wirra-warra Creek. Both sides of the creek are slightly undulating, with sandy loamy slopes, well grassed and park-like, timbered with mulga and gidgia trees.

The supply of the older bore, probably, is given in Mr. Boulton's report, folio 12, as 33,000 gallons. I was informed, that intending to deepen the bore, the casing was being taken out when it broke, and that ultimately the bore got choked up, and the present bore was put down alongside. Another version is that there was an escape in the old bore, and that the waters were falling off. The flow from the new bore reaches the creek (which is dammed lower down) by means of a pipe under the ground.

The discharge is 40,500 gallons per day. The list of Government bores obtained from the Government Statistician's Office mentions one bore at 75 miles on Bourke-Wanaaring Road (probably the new one) giving 75,000 gallons. The new bore would thus also be falling off, if the above measurement was correct.

The temperature is 96 degrees Fahr. Hardness, 9 degrees, somewhat salt. The depth of the old bore was about 976 feet. The new one is 1,231 feet deep.

KULKYNE Government Bore.—The bore is situated on the west bank of the Kulkynne Creek, on a sand ridge between the creek and the flood channel, about half-a-mile north of the main Bourke-Wanaaring Road. The outflow of 6-inch pipe is flush with the ground, and the water is led by a drain into a small dam, thence into the creek just above the Government tank, which backs up the rain-water in the creek as represented on Plate 25. The discharge is 1,800 gallons per day. The hardness I found to be 58 degrees, and the taste salt and disagreeable. Carcasses of dead kangaroos were lying about there, said to have died from the effects of this water. The water is really so bad, that when the Government tank is emptied the water for the caretaker is carted from a tank 9 miles away. The bore was finished about December, 1892, or January, 1893. It is intended to put down a second bore.

In the list obtained in August last, the bore is mentioned as "in progress; small supply, 2,500 gallons."

CUTTABURRA Government Bores.—Situation about 2 miles west of the Cuttaburra Creek, and 11 miles east of Wanaaring. There is one bore flowing at the rate of 5,760 gallons per day, the delivery taking place through a 5-inch pipe, bent at 8 feet above the soil. The temperature of the water from this bore is 92 degrees. The taste of the water, which is 33 degrees hard, is salt and sulphurous; the depth of the bore, 965 feet. A new well is being put down about 150 feet east of this bore, the rig of which is shown on plate 26. At the time of my visit, in September last, the depth reached was 1,150 feet. At 255 feet some salt water was struck, and at 385 feet, in 5 feet of white sand-drift, brackish water which rose to the surface, just trickling over. By Mr. Boulton's report, fo. 12, the old Cuttaburra bore gave 24,664 gallons. In the list mentioned previously, the new one alone appears as being in progress and giving out 22,464 gallons.

WANAARING Pastoral Holding.—Number 1 bore is situated on buddah and mulga covered red sandy soil level plain, about 20 feet more elevated than the ground at No. 2 bore. The delivery pipe (6 inches), is carried about 2 feet above the ground, and empties into an iron trough for the watering of stock; thence it runs over the plains. The discharge is 10,322 gallons per day. The water stops running 6 feet above the surface of the soil; the temperature is 100 degrees; hardness is 23 degrees; taste is somewhat salt, and salt deposits are visible in the trough.

Number 2 bore is situated near one of the Cuttaburra branches, on a red sandy rise, with open buddah and mulga. The water stops running 18 feet above the ground level; the 6-inch casing is bent about 18 inches below the surface, and in that position it delivers 142,000 gallons per day.

A drain carries the water to a tank $1\frac{1}{2}$ miles distant. Two acres of ground have been ploughed for lucerne to be irrigated from the bore. The depth of the bore is about 1,400 feet. The discharge does not seem to have decreased. Local persons even say it has increased. The aggregate flow of the two Wanaaring bores has, however, been stated in the list mentioned to have been 215,000 gallons. The temperature of this water is 112 degrees. The hardness is 21 degrees, and the water is so heavily charged with gas that it will burn in the elbow of the pipe till put out.

NOCOLECHE Pastoral Holding.—Number 1, or Mallara bore, is situated at the foot of a slight rise of good, red, sandy loam. The bore is 916 feet deep. At 860 feet, the supply was struck which it is said was 200,000 gallons, but which I have found to be 73,400 gallons per day, flowing out at 3 ft. 6 in. above the ground from a 5-inch pipe. The water stops rising 15 feet above the surface of the ground. The water runs by a galvanised iron trough into a clay pan, where it forms a shallow lake of about $\frac{3}{4}$ mile in circumference.

circumference. A good crop of wheat was grown by watering with this water, which eats away the iron in the trough. The temperature is 94 degrees, the hardness is 10 degrees, and the taste of the water is slightly salt. The bore was started 10th September, 1888, and was finished on the 18th of December, 1888.

No. 2 bore is situated between the hills of the divide between the Bulloo and Paroo Rivers waters. It is 1,700 feet deep. Several water strata were met. The main supply is the one struck at 1,300 feet. It rose to within 13 feet from the surface. Now it stands at 66 feet from the top of the bore. The lowering of the level may be attributed to escape, possibly caused through pulling out 800 feet of casing, of a total length of 1,300 feet.

The water was only once used by pumping for stock in the drought of 1892. With the pump down to 120 feet, the water supply appeared insufficient for the 3-inch pump, worked with an 8 horse-power engine. Lowered to 160 feet, blue mud came up for about an hour, when the water was abundant enough to supply 18,000 gallons per twenty-four hours. The hardness was 1 degree, and the taste of the water was soft and fresh. This bore was commenced on the 12th of February, 1889, and finished on the 28th September, 1889.

The bottom rock is said to have been of green stone, pronounced by geologists bed rock, but Mr. McMillan, the borer, is not quite sure from what depth the specimen submitted came, as it was a piece of caving.

No. 3, or "Numbardi bore," is situated on a bank of the Kulkynie Creek, at the north-east corner of a tank excavated in the channel.

The water is let run either into the creek above the dam of the tank, or into the tank over the embankment, by a flume of corrugated iron. (*See Plate 27.*) The surplus water from the tank is led in a drain 3 miles long, in the bed of the creek to another tank. The drain is 18 inches wide on the top and 6 inches deep. The fall being very small, the flow is sluggish, spreading out over the banks, resulting in great waste of water chiefly through evaporation. The land on the south side of the creek is well suited for irrigation from the tank, but this is not done. Another drain is being branched off the main drain to lead the water to another tank.

The bore is 1,227 feet deep. At 50 feet stationary salt water was met with. At 910 feet water rose from 10 feet of sand drift to within 35 feet from the surface. Water met with at 1,090 feet came over the surface. At 1,130 feet the second supply of fresh water was struck, and at 1,200 feet the main supply, which flows out of the 6-inch pipe 8 feet 6 inches above the ground, delivering there 600,000 gallons per day. When struck, it was measured at 4 feet above the surface, where it is said to have flowed at the rate of 725,000 gallons per day. The temperature was 107 degrees; hardness, 3 degrees; taste, slightly mineral. The bore was commenced 5th November, 1889, and terminated at New Year, 1890. The cost was at £1 per foot to 1,000 feet, and 30s. below that depth, with water and fuel carted and plant and casing found by the station.

V. CZARLINSKI, C.E.

[Nine diagrams and one map.]

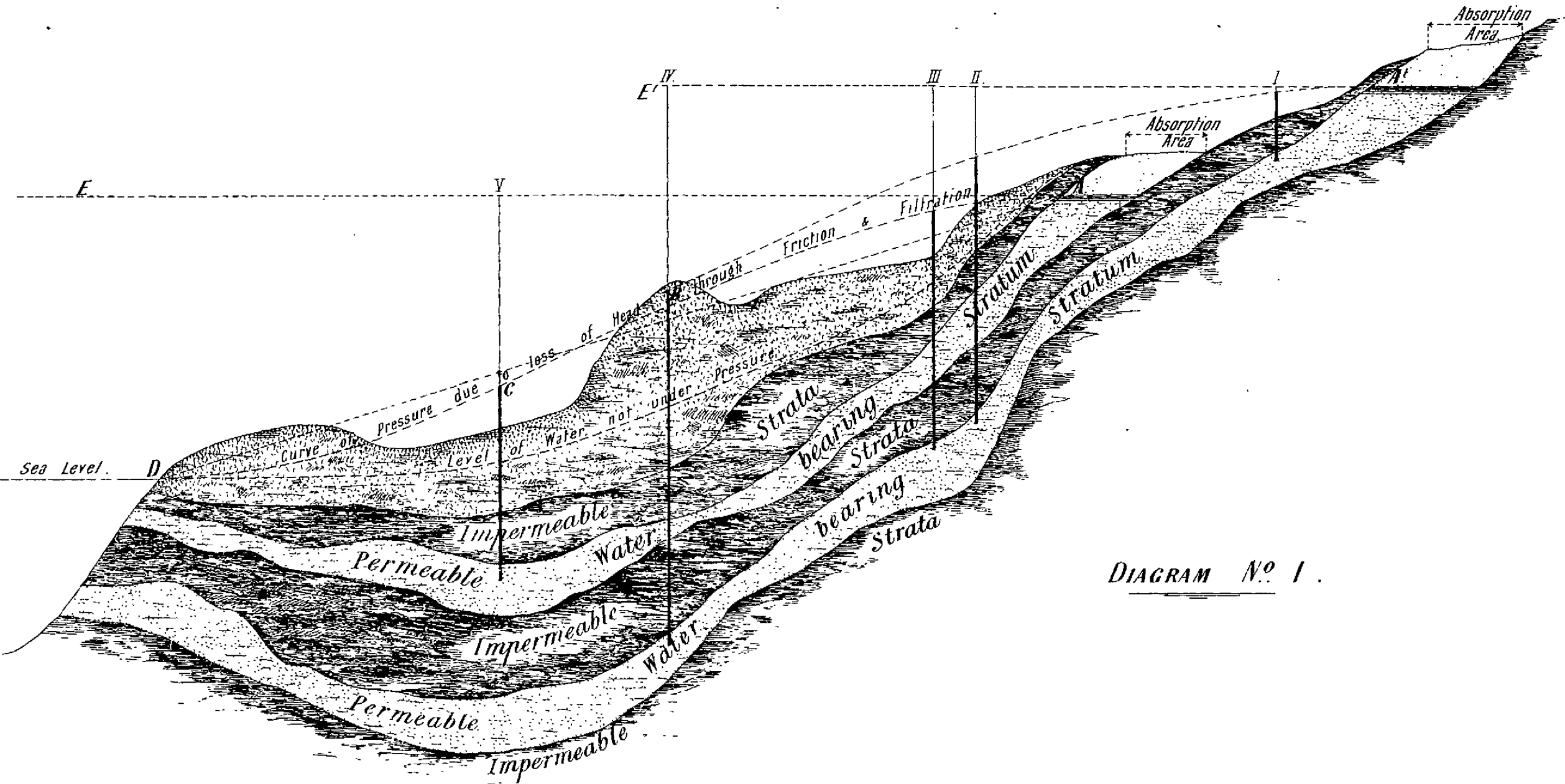
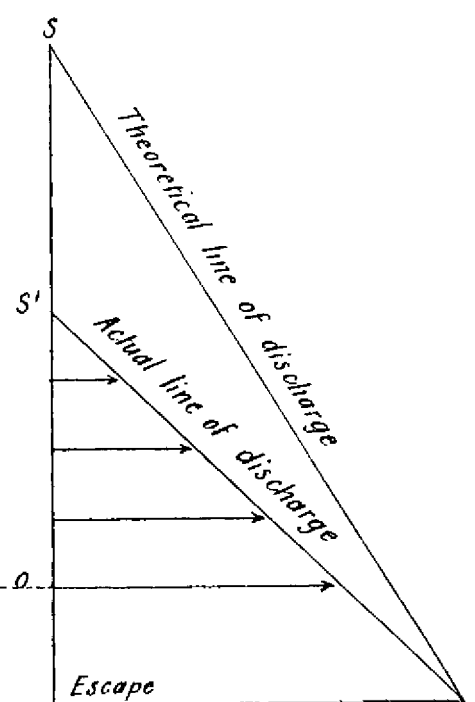
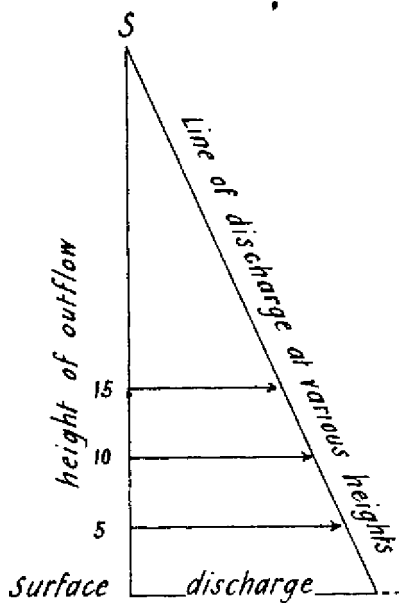
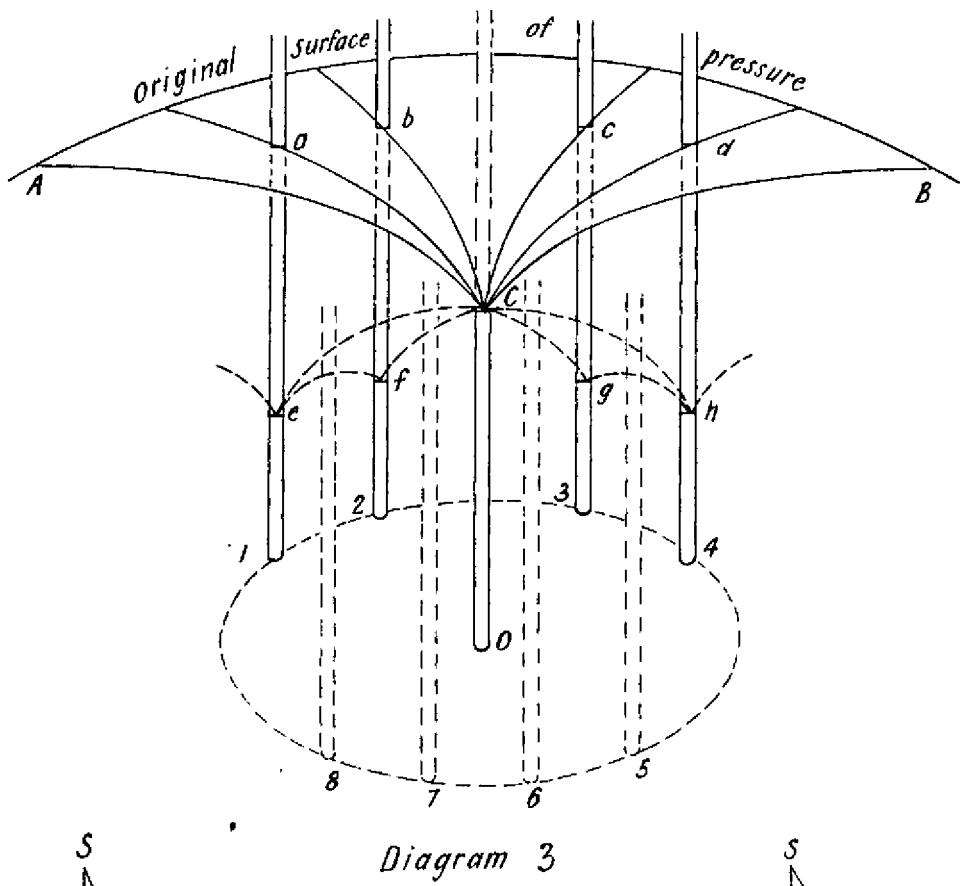
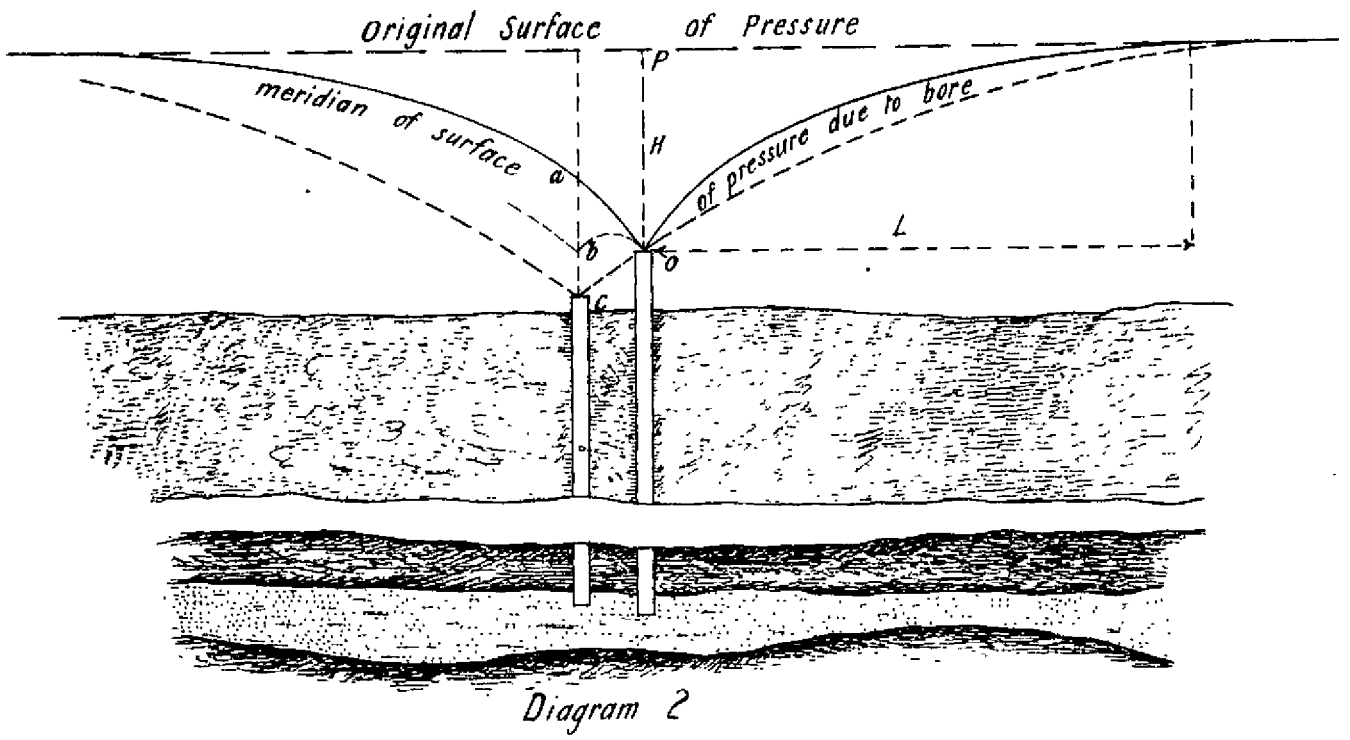
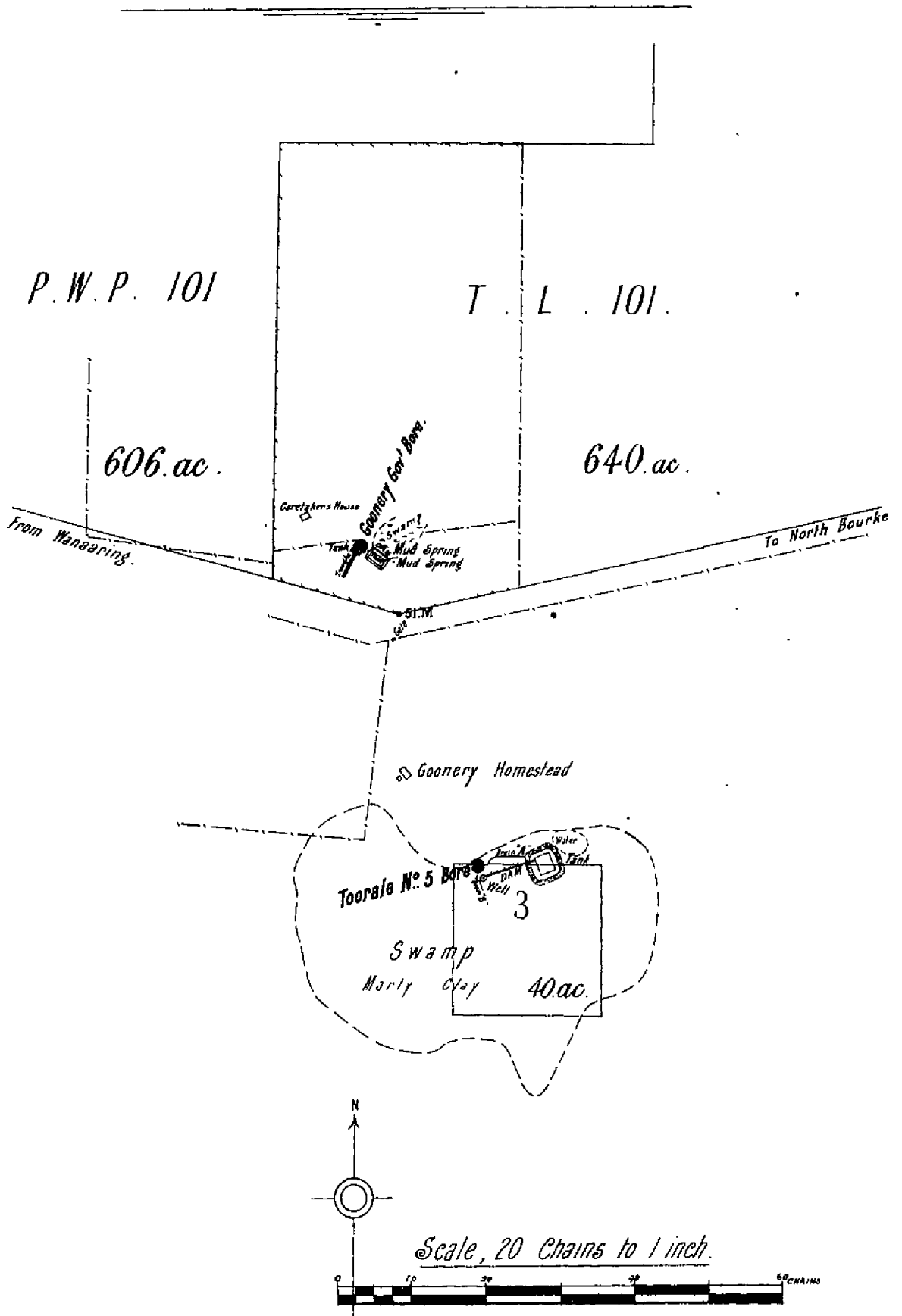
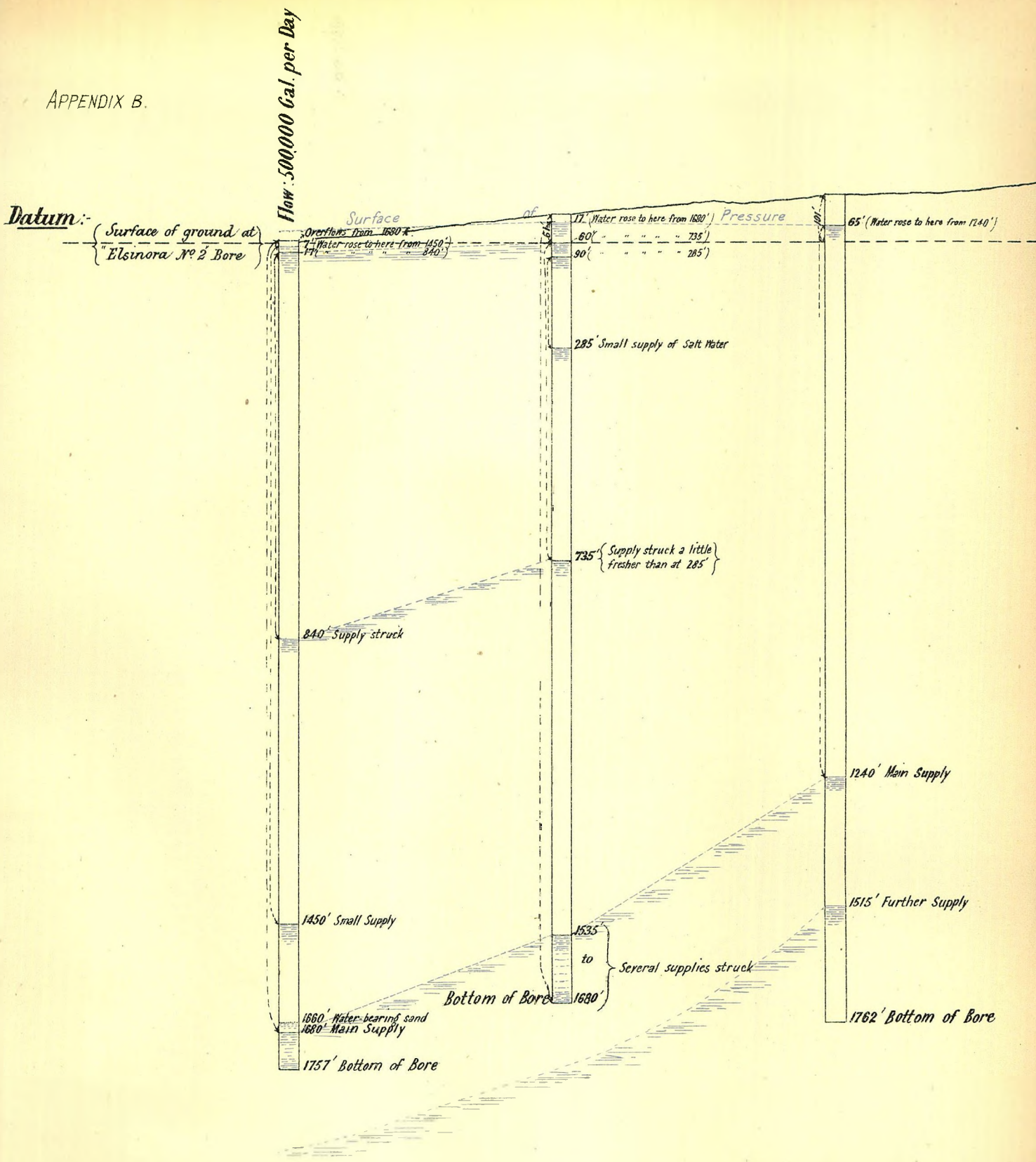


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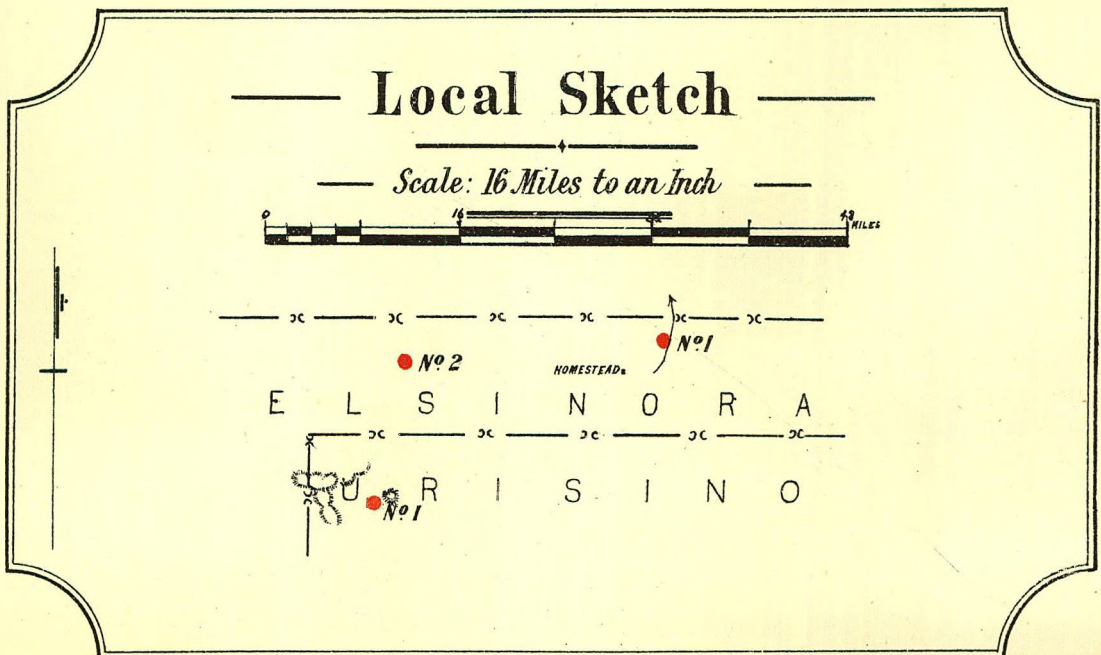


SKETCH SHEWING POSITIONS OF GOONERY GOVT. & TOORALE N^o 5 BORES.

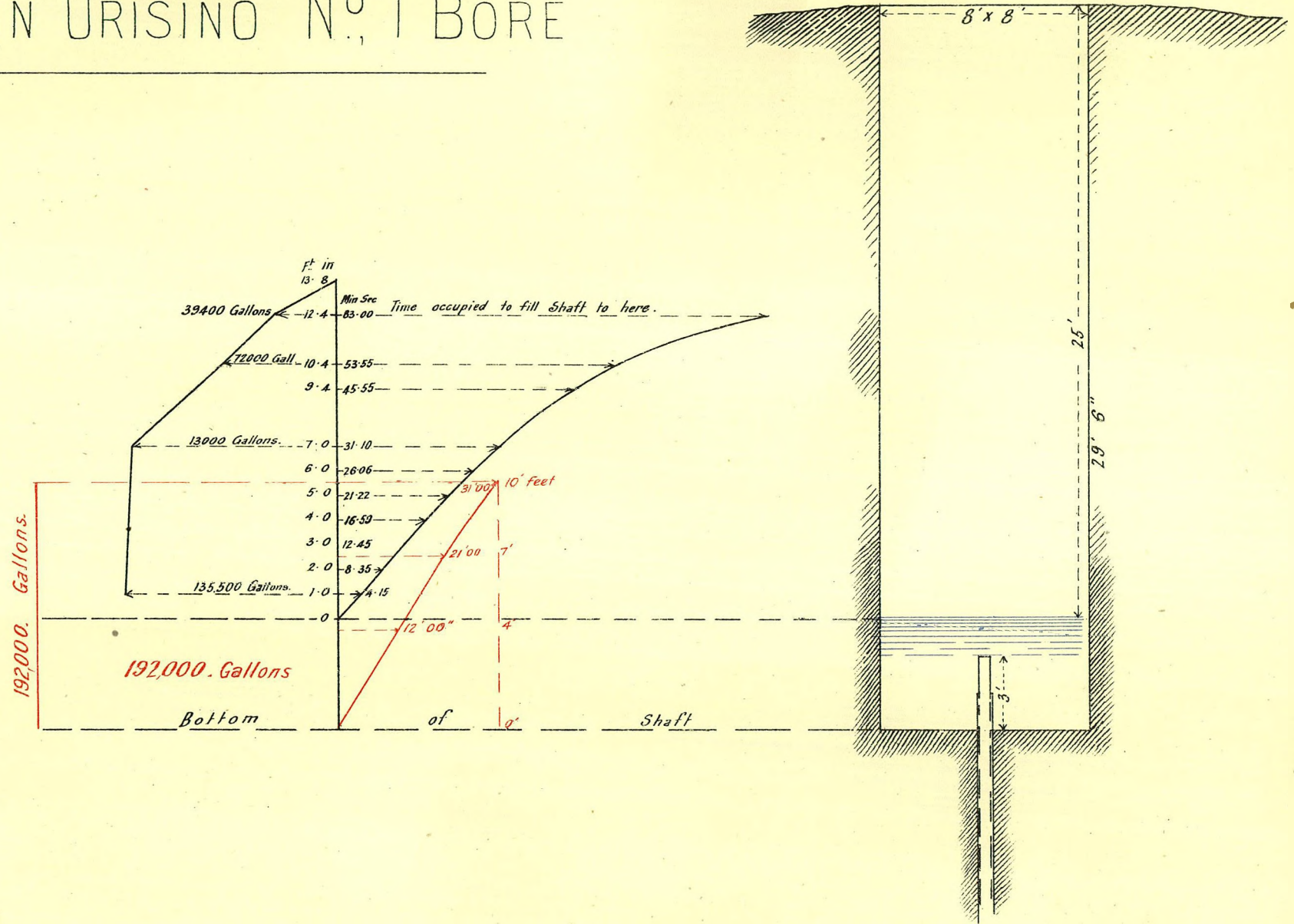




— ELSINORA No 2 : URISINO No 1 : ELSINORA No 1 —



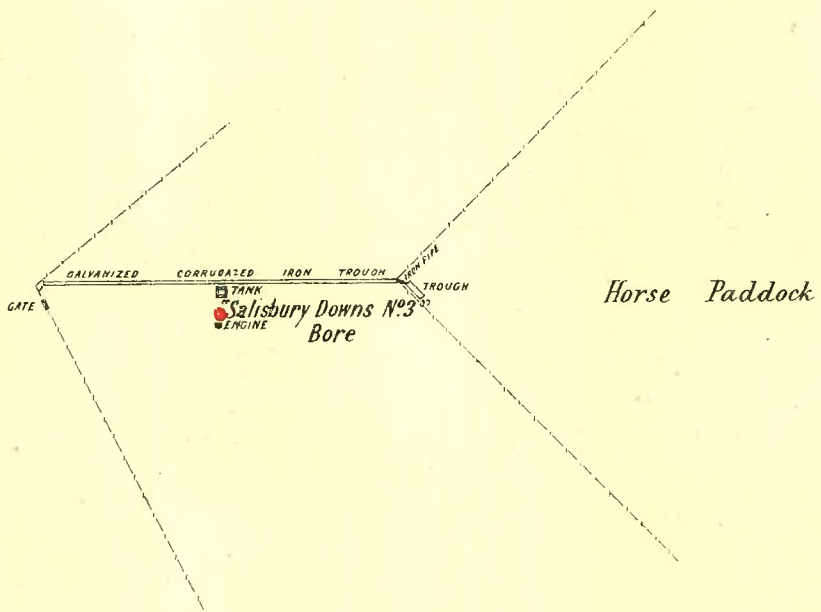
WATER SUPPLY IN URISINO N^o. 1 BORE



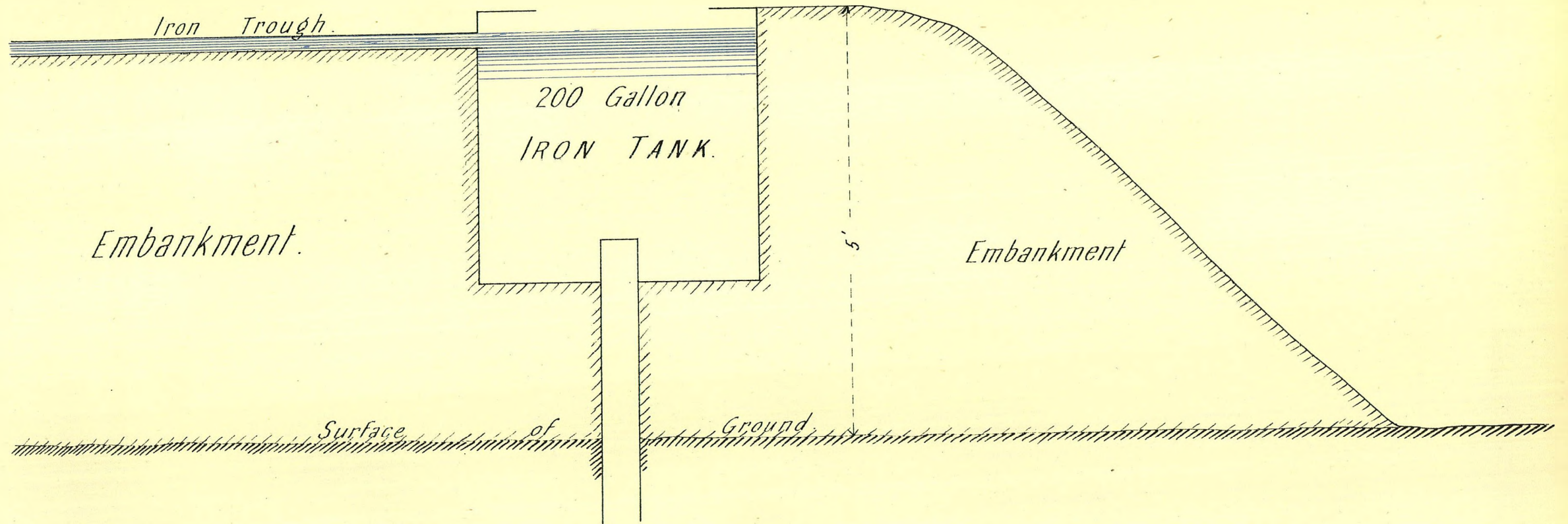


APPENDIX D

— "SALISBURY DOWNS N^o 3" BORE —



YANCANNIA N^o 1 BORE

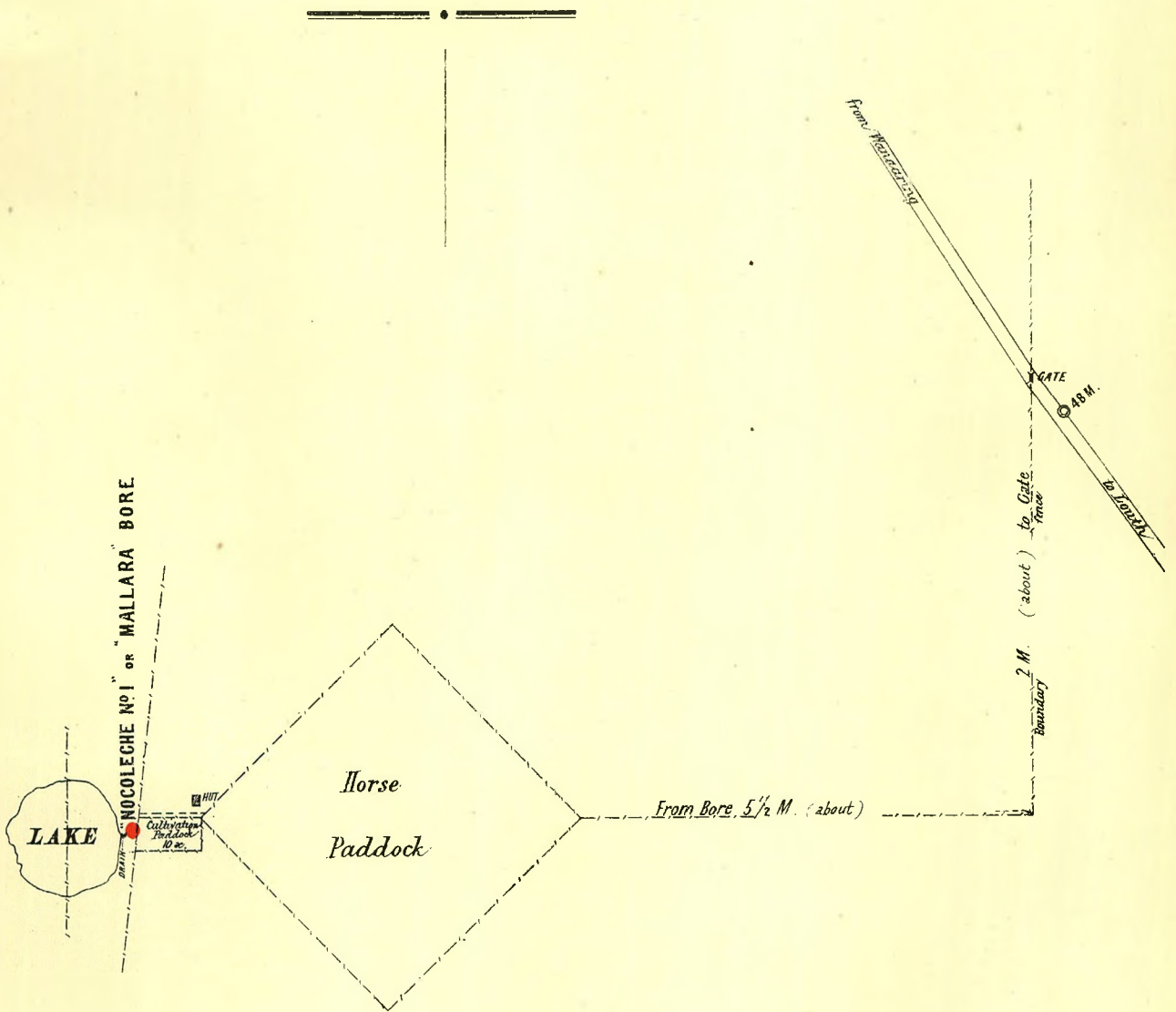




SKETCH

showing position of

“NOCOLECHE” N°1” OR “MALLARA” BORE



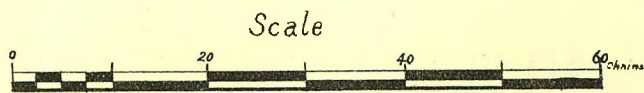
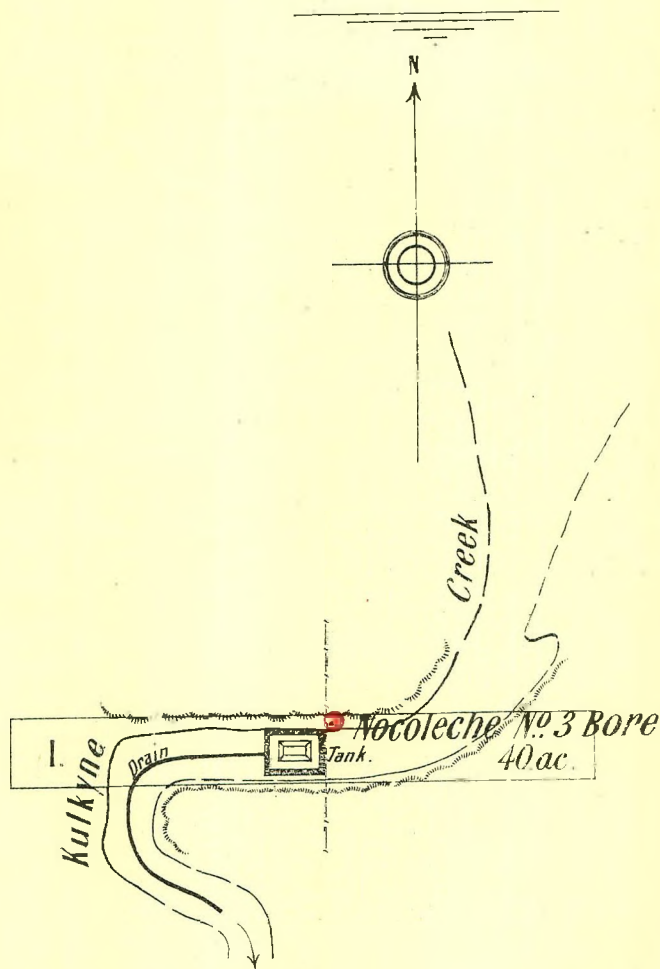
Scale. 40 Chains to an Inch

APPENDIX G.

NOCOLECHE N^o. 3

OR

NUMBARDI BORE



Scale 20 Chains to an Inch.

Sig. 190

SKETCH MAP

Shewing Positions of

ARTESIAN WELLS

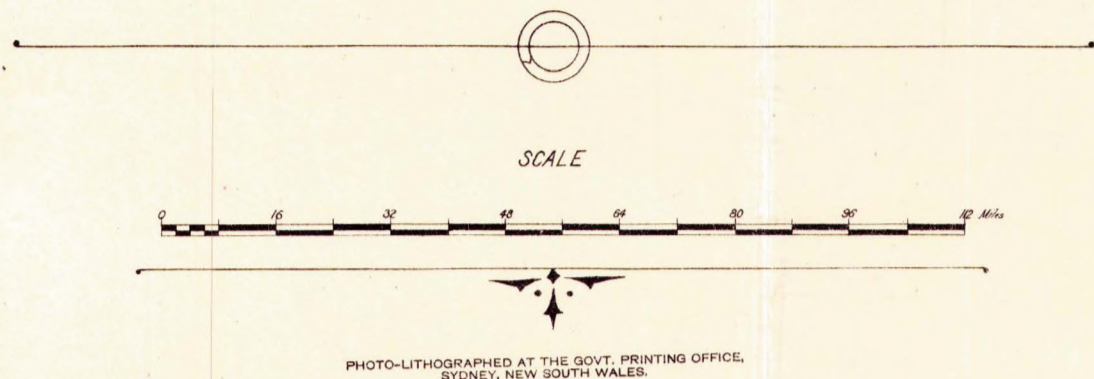
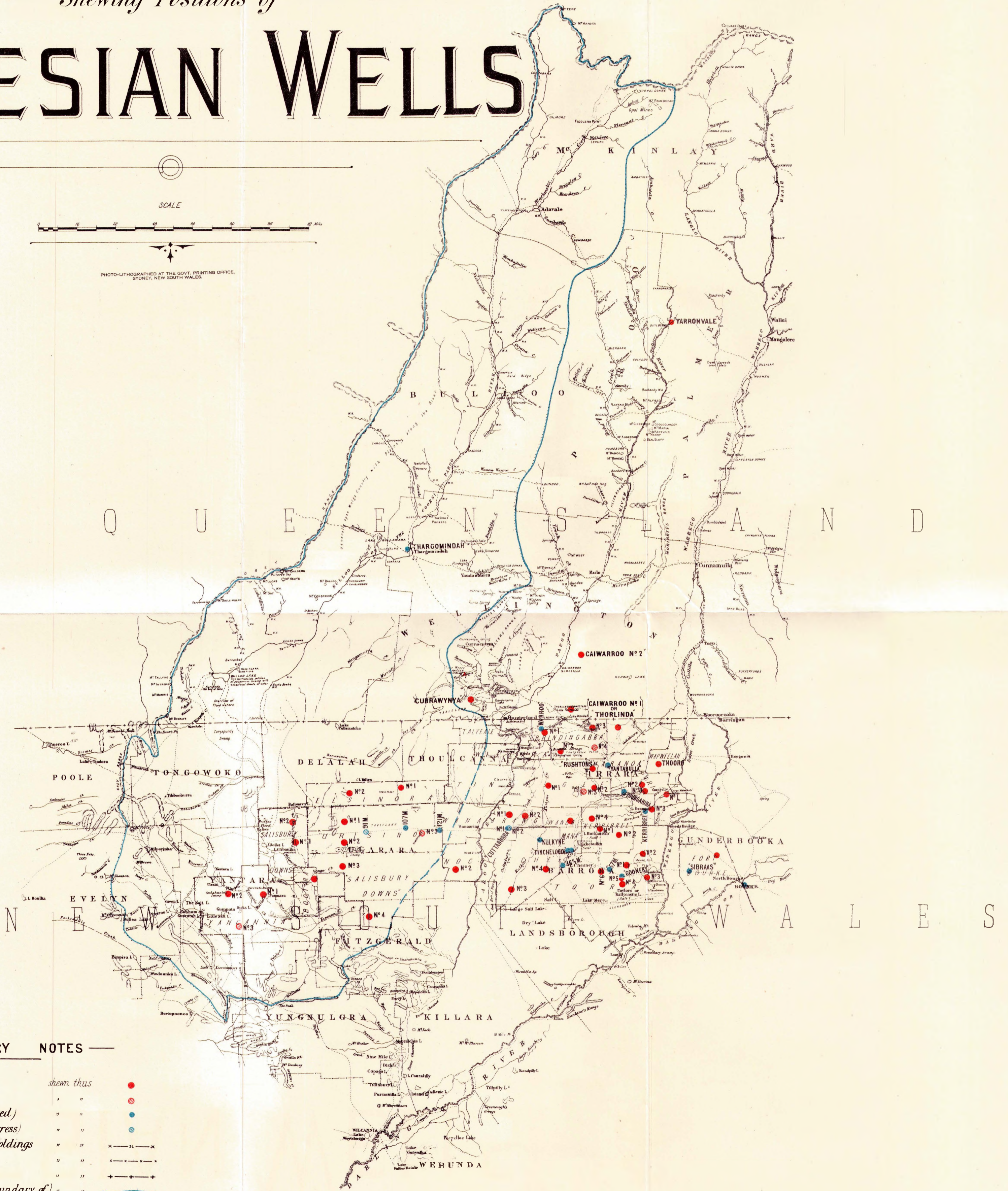
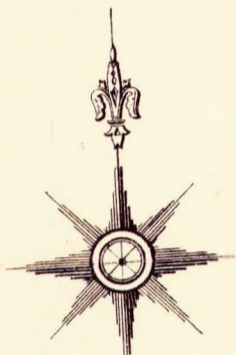


PHOTO-LITHOGRAPHED AT THE GOVT. PRINTING OFFICE, SYDNEY, NEW SOUTH WALES.



EXPLANATORY NOTES

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|-------------------------------------|-----------|-------|
| Private Bores (completed) | shew thus | ● |
| " " (in progress) | " " | ○ |
| Government Bores (completed) | " " | ● |
| " " (in progress) | " " | ○ |
| Boundaries of Pastoral Holdings | " " | —x—x— |
| County Boundaries | " " | —x—x— |
| Colony Boundary | " " | —+—+— |
| Basin of Bulloo River (Boundary of) | " " | —+—+— |

1894.

NEW SOUTH WALES.

PARLIAMENTARY STANDING COMMITTEE ON
PUBLIC WORKS.

SECOND REPORT

TOGETHER WITH

MINUTES OF EVIDENCE, APPENDICES, AND PLAN,

RELATING TO THE

PROPOSED SEWERAGE WORKS

FOR

PARRAMATTA.

Presented to Parliament in accordance with the provisions of the Public Works Act,
51 Vic. No. 37.

SYDNEY: CHARLES POTTER, GOVERNMENT PRINTER.

MEMBERS OF THE COMMITTEE.

LEGISLATIVE COUNCIL.

The Honorable WILLIAM HENRY SUTTOR, Vice-Chairman.
 The Honorable JAMES HOSKINS.
 The Honorable FREDERICK THOMAS HUMPHREY.
 The Honorable JOHN DAVIES, C.M.G.
 The Honorable WILLIAM JOSEPH TRICKETT.

LEGISLATIVE ASSEMBLY.

JACOB GARRARD, Esquire, Chairman.
 THOMAS THOMSON EWING, Esquire.
 WILLIAM CHANDOS WALL, Esquire.
 WILLIAM McCOURT, Esquire.
 JOHN CASH NELD, Esquire.
 EDWARD WILLIAM O'SULLIVAN, Esquire.
 CHARLES COLLINS, Esquire.
 HENRY DAWSON, Esquire.

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PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS.

SEWERAGE WORKS FOR PARRAMATTA.

SECOND REPORT.

THE PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS, appointed during the first session of the present Parliament, under the Public Works Act of 1888, 51 Vic. No. 37, the Public Works Act Amendment Act of 1889, 52 Vic. No. 26, and the Public Works (Committees' Remuneration) Act of 1889, 53 Vic. No. 11, to whom was remitted for further consideration and report "the expediency of constructing sewerage works for the town of Parramatta," have, after further inquiry, resolved that it is not expedient the proposed works should be constructed, and in accordance with the provision of sub-section IV, of clause 13, of the Public Works Act, report their resolution to the Legislative Assembly :—

1. A detailed description of the proposed Sewerage Works and of their estimated cost was given in the First Report of the Committee, and need not be repeated here; but a short description taken from that Report will enable this Second Report to be the more easily understood. The proposed works are designed to drain an area of 1,383 acres, 803½ of which are on the north side and 579½ on the south side of the Parramatta River, but for the present it is intended to provide for the sewerage of only 929 acres, 421 on the north side and 508 on the south side of the river. The works consist of main, storm-water, and subsidiary sewers, a pumping-station, and a sewage farm. The area of the sewage farm is 62 acres, 22 of which are above, and 40 below high-water level. The portion below high-water it would be necessary to reclaim by filling it in with silt and river sand enclosed within fascine embankments. Cereals and other crops would be grown upon the farm, and practically it would be dealt with as is done at Webb's Grant, Botany, in connection with the drainage of the western suburbs of Sydney. The estimated total cost of the proposed works is £75,926, of which amount £16,000 has already been spent or arranged for. The annual cost of the works is estimated at £4,268, which is made up as follows: Interest and payment of principal in sixty years at 4 per cent. on £76,000, £3,040; coal and stores for the engine-house, £162; wages and expense of working the sewage farm, £860; repairs to engines calculated at 5 per cent. on the total cost, £206.

2. The First Report by the Committee with reference to these proposed works, dated 4 October, 1892, represented "that it is not expedient the proposed Sewerage Works should be constructed, for the reason that, in the opinion of the Committee, the sewage farm included in the proposed works is too small for the purpose, and the sewage should be dealt with at the proposed pumping-station at Clay Cliff Creek, by a system of precipitation and filtration or other effective modern process."

Reason for the further consideration of the proposed works.

3. On 1 February, 1894, the Legislative Assembly, on the motion of Mr. Lyne, passed the following resolution:—

That it is expedient that the Report of the Parliamentary Standing Committee on Public Works upon the proposed construction of Sewerage Works for the Town of Parramatta be remitted to the said Committee for its further consideration and report, for the following reason: That since the said report was made, a Commission of Experts has reported favourably upon the scheme proposed by the Department, subject to certain modifications, a consideration of which report might lead the Committee to arrive at a different and more favourable conclusion.

As explained to the Committee, in evidence, by the Under Secretary for Public Works, the "Commission of Experts" was appointed in consequence of a report by the Engineer-in-Chief for Sewerage, dated 12 November, 1892, in which he dissented from the conclusion arrived at by the Committee in their first inquiry, and urged that no action should be taken in the matter by the Minister for Public Works until the scheme had been further investigated by a board of engineering experts. The Minister concurring in this recommendation, a board, consisting of Messrs. W. W. Wardell, M.I.C.E., G. Chamier, M.I.C.E., and C. Napier Bell, M.I.C.E., was appointed, and they reported in favour of the scheme as submitted to the Committee with the exception that they advocated, in connection with the sewage itself, the adoption of the separate system instead of the partially separate system.

The second inquiry.

4. In carrying out their second inquiry, the Committee have had before them the reports of the Engineer-in-Chief for Sewerage and the Board of Experts, as well as other documents, and have examined a number of witnesses including the Engineer-in-Chief, the members of the Board, the Medical Adviser to the Government, the Engineer for Sewerage, connected with the Metropolitan Board of Water Supply and Sewerage, Mr. G. A. Stayton, M.I.C.E., who, in their first inquiry the Committee engaged to make a special examination of the scheme and to report upon it, the Assessor to the Metropolitan Board of Water Supply and Sewerage, and the Mayor of Parramatta. They have also made a second visit of inspection to the site of the proposed sewage farm at Parramatta, and to the sewage farm at Webb's Grant, Botany.

The Engineer-in-Chief's Report.

5. The report by the Engineer-in-Chief on the conclusion arrived at by the Committee in their first inquiry, consists largely of quotations from statements and writings by sanitary engineers and public bodies in Europe and America on the subject of sewage farms, favorable to sewage farming whenever the circumstances justify it. Before dealing with "the main question" in the Committee's Report the Engineer-in-Chief draws attention to a statement in the Report indicating that it was only in the late stages of the inquiry that the Department appeared to have anything like a proper conception of the portion of the scheme relating to the sewage farm. With regard to this he asserts that, "before submitting the scheme to the Committee, the Department had carefully studied the applicability of all the known arrangements for sewage disposal and utilisation, and had worked out the details of the farm as fully as was necessary to arrive at a just conclusion." But, "in presenting a report to a non-professional committee," he proceeds to say, "it was deemed unnecessary to enter upon such details, and these were omitted not only in the description of the sewage farm but of the main works." Summarising his report he submits that he succeeds in showing, "First—that it is only under exceptional circumstances, such as the impossibility of procuring suitable land for filtration, that precipitation should be allowed; second—that no such difficulty exists in the case of Parramatta; third—that the site selected and purchased at Duck River is suitable for a farm, while that at Clay Cliff Creek is not, and that the material of which it is proposed to construct the farm is proved to have qualities superior to any other for destroying all noxious matter hurtful to life and health; fourth—that land irrigation and filtration is the only known means of procuring a pure effluent; fifth—that all sanitarians agree, and statistics show, that sewage farms, properly managed, are not injurious to health, nor do they create a nuisance; sixth—that the area resumed will be amply sufficient for requirements, not only of the present, but for the prospective population in twenty-five years, and, with modification of arrangements, for the ultimate population of 48,500 also."

The Report of the Board of Experts.

6. The Board of Experts state in their report that all the conditions necessary to make sewage-farming successful are present in the case of Parramatta, and that the

the portion of the area comprising the farm which it is necessary to reclaim, when filled in with the sandy material proposed to be used, would be "amply large enough to meet the requirement of the sewage of Parramatta for many years to come." The more elevated portion of the total farm area, consisting of 22 acres above high-water mark, it will not be requisite at the present time, in their opinion, to bring into use. With this reduction in the initial cost of preparing the farm area for the reception of sewage, and the diversion of all rain water from the sewers, which would reduce the size and cost of the mains and reticulation, the Board approve of the departmental scheme.

7. Had the official evidence given in the present inquiry respecting the sewage farm and sewage farms generally been put before the Committee in their first inquiry it is possible that instead of passing a resolution opposed to the carrying out of the works without certain extra provisions to ensure their effectiveness, the scheme, as far as it relates to the disposal of the sewage, would have met with the Committee's approval. But, as the report of the Engineer-in-Chief for Sewerage upon the Report of the Committee shows, information necessary to enable the Committee to arrive at a right conclusion in their investigation was not placed before them. Evidence, too, respecting the presence of microbes and their action in relation to sewage has been given in the present inquiry with a fullness of detail not supplied in the first inquiry, and from authorities whose testimony necessarily carries considerable weight. The principal witness on this subject was the present Medical Adviser to the Government, whose evidence must have an important bearing on sanitary questions in which the Government are concerned. In the first inquiry the Medical Adviser to the Government was examined, but the gentleman then occupying that position did not explain to the Committee this microbe theory in a manner which gave it any special significance in connection with the disposal and treatment of sewage, probably because the investigations of the scientists, who are the authors of the theory, were not at that time so complete as to attach to it the importance it now appears to bear. Added to these omissions from the inquiry when the proposed works were first referred to the Committee was the fact that until the first inquiry had proceeded almost to its close the Department had not an adequate knowledge of some of the most important details of the scheme; and when, as the inquiry drew to a close, certain matters were stated which should have been put before the Committee at the opening of the inquiry, the explanation was given in such a way as to impart to the information much less importance than under other circumstances would have been attached to it. During the inquiry it was represented by the Department that 40 acres of the area proposed to be used for the sewage farm were above high-water mark and, with the exception of sub-soil drainage, ready for the reception of sewage, and 22 acres were below high-water mark and would have to be filled in and raised; whereas the 40 acres were below high-water mark and the 22 acres above. The Committee also understood until a late stage of the inquiry that the filling in would not be carried to a height more than 18in. or 2ft. above high-water, and the nature of the material to be used for this purpose was, as described in the evidence, both indefinite and unsatisfactory.

8. These important matters have been more satisfactorily explained in the present inquiry, but the effect this explanation might be expected to have upon the deliberations of the Committee is nullified now by other evidence of equal importance to a right decision in the case. In their present inquiry the Committee have learned that it is proposed to set aside the 22 acres of land forming that part of the sewage farm area above high water, and to use for the disposal of the sewage the 40 acres now below high-water mark, filling in this portion to a height of 5 feet above high water with silt and sand of a kind well suited to the purpose. These 40 acres, in the opinion of the Board of Experts, are amply sufficient for the reception and treatment of the sewage of Parramatta for many years to come, and in this opinion the Engineer-in-Chief concurs. Prepared in the manner described, this area would probably dispose of the sewage unobjectionably, except, perhaps, for the occasional odours which appear to be inseparable from sewage-farming. Some method of precipitation and filtration, as recommended in the Committee's First Report, would, undoubtedly, promote the greater efficiency of the scheme, but with land prepared as now explained this is not so necessary as it was in the circumstances of the first inquiry.

Matters upon which the question of carrying out the works depend.

9. The question whether the proposed works should be carried out depends now, however, on evidence which relates to matters other than either the nature of the farm or the method of dealing with the sewage. With the additional details of the proposal which this second inquiry has elicited, it is doubtful whether the scheme has been adequately considered. The estimated cost (£75,926), large as it is, does not include the whole of the intended expenditure. The filling in of the farm is proposed to be done at the expense of the Department of Harbours and Rivers, though it is as much a part of the cost of the scheme as any other portion of the expenditure. With the cost of the filling-in added to the estimate of the cost of the other works, the total amount would be something like £90,000, a serious amount to expend in connection with the municipality of Parramatta. But a stronger objection to the scheme is evidence brought out in the present inquiry, that Parramatta is neither willing nor able to pay the rate necessary to provide the interest on the expenditure, and does not, in fact, want the proposed works.

The position of Parramatta in relation to the scheme.

10. The position of Parramatta in relation to the scheme was stated to the Committee by the Mayor, who was twice under examination. On the first occasion, though declaring the town to be healthy, with an efficient pan system in operation, he asserted that the people would willingly pay the rate chargeable on the cost of the proposed works, in order to put a stop to the pollution of the river by sewage from the Government establishments. He spoke, however, with some hesitation, as he thought the estimated total cost excessive; but of the amount required for interest he expected the Government to contribute a large part. Before his second examination took place a meeting of the Municipal Council of Parramatta was held, at which a resolution was passed affirming the necessity for the Council to know its exact position with regard to the cost of the proposed works, and the amount of sewerage rates to be paid by the Government, and adjourning the meeting for a month to afford time for obtaining the information. In the meantime, the Committee called before them the Assessor of the Metropolitan Board of Water Supply and Sewerage, for the purpose of ascertaining from him the system under which the Board assess Government institutions in Sydney for sewerage rates, and from that system judging the amount the Government would probably pay for the asylums and gaol at Parramatta under the proposed sewerage scheme there. This officer carefully considered the whole matter, and from his evidence it appears that, by adopting the Board's ordinary system of valuation, and fixing the sewerage rate to be charged at Parramatta at 11d., the lowest rate that, under the circumstances, could be charged, the Government's contribution to the annual cost of the scheme would be about £820, leaving nearly £3,500 to be found by the people of Parramatta. Possibly the rate would be higher than 11d., for as about 10 per cent, of the property in the municipality would not be served by the sewerage scheme that proportion would escape the liability to be rated, and the duty of finding the requisite amount of money would consequently press the more heavily upon the remainder. The rating of Government institutions in Sydney by the Board of Water Supply and Sewerage is based upon what is considered to be a fair average rental of the buildings, the Board taking the assessment of the Municipal Councils if there be any, and making their own valuation, subject to appeal as in municipalities, if there be not. Visiting Parramatta in order to make the information desired by the Committee as complete as possible, the Assessor valued the Government institutions and land there, and found the total annual ratable value of these properties to be, according to the Board's system of valuation, £17,511. This amount was made up as follows:—Gaol, £3,500; Industrial School, £1,000; post office, North Parramatta, £36; post office, South Parramatta, £350; school and residence in Macquarie-street, £300; school and residence, North Parramatta, £300; court-house, Parramatta, £600; police barracks, £500; Lunatic Asylum, £7,000; George-street Asylum, £2,000; asylum, Macquarie-street, £800; asylum, Harris-street, £250; Cottage Homes, £200; land resumed for court-house, £425; land at corner of Windsor-street and George-street, £250. This list does not include the two railway stations at Parramatta. Railway properties are exempt from certain rates and taxes, and are not liable for sewerage rates unless connected with the sewers; but if so connected the Parramatta railway stations would pay on an 11d. rate the sum of £18 6s. 8d. a year, a little more than half what they are now paying the Council under the pan system. This £18 6s. 8d. forms part of the

£820 represented by the Assessor to be the utmost amount likely to be obtained from the whole of the Government ratable property in the town. On being made acquainted with these figures the Mayor, when before the Committee the second time, at once stated that Parramatta could not pay the amount which it appeared would be expected from the people, and in the circumstances would rather be without the scheme. During the Committee's first inquiry with reference to these proposed works the then Mayor of Parramatta appeared to be satisfied with the scheme and the obligations connected with it, and the Municipal Council, the Committee were informed, had expressed their approval of it; but from the evidence of the present Mayor in this, the second inquiry, it is clear that the matter had not been fully considered, and that throughout it has been very imperfectly understood. The financial position of the Municipal Council of Parramatta is not such as to indicate ability to incur any new heavy liability. The municipality is in debt to the extent of £56,000, upon which it pays 6 per cent. interest, and has borrowed up to its limit. The people are rated to the extent of 2s. in the £, and in addition, under present circumstances, have to pay a charge for the pan system. In this condition of affairs the Mayor is quite sure the people would not be inclined to pay £3,000 a year for sewerage, and that now, knowing what the proposed scheme is likely to cost them, the Council will speedily rescind any resolution they have passed approving of it.

11. In view of the evidence given the Committee decided against the construction of the proposed works. Doubtless where there is any large population suffering from insanitary conditions in which the Government are concerned it is the duty of the Government to do what they can to remove or mitigate the evil; but it is not desirable for elaborate and expensive works to be carried out at the public cost for a municipality unwilling to accept the responsibility and consequent liability. The principal grievance in the matter of defective drainage which the residents of Parramatta complain of, at any rate so far as their views are expressed through the Mayor of the municipality, is the pollution of the river, which, it is asserted, is caused by drainage from the Government institutions in the vicinity. If that were stopped, the Mayor states, there would be no necessity for any new sewerage system for the town. The whole of the evidence in the inquiry was taken into consideration by the Committee on the 13th instant, and they decided that it was not expedient the works as proposed should be carried out. Their resolution will be seen in the following extract from their Minutes of Proceedings:—

Conclusion arrived at by the Committee.

Mr. O'Sullivan moved—

“That, inasmuch as the evidence with regard to the sewage farm in connection with the proposed works at Parramatta, and in relation to sewage farms generally, has in the present inquiry been placed before the Committee with much more detail and force than in the first inquiry, the Committee now consider it expedient that the proposed Sewerage Works for Parramatta, as referred to them by the Legislative Assembly, be carried out—provided, 1st, that the surface level of the sewage farm be raised with suitable material at least five feet above high-water mark; 2nd—that on completion the whole of the works be vested in the Metropolitan Board of Water Supply and Sewerage.”

Mr. Garrard seconded the motion *pro forma*.

Mr. Humphery moved as an amendment—

“That all the words after the word ‘That’ be omitted, with a view to insert the following words: ‘in the opinion of this Committee, it is not expedient that the proposed Sewerage Works for Parramatta, as referred to the Committee by the Legislative Assembly, be carried out.’”

Mr. Davies seconded the amendment.

On the question, “That the words proposed to be omitted stand part of the motion,” the Committee divided, with the following result:—

Ayes, 2.
Mr. Garrard,
Mr. O'Sullivan.

Noes, 10.
Mr. Suttor,
Mr. Hoskins,
Mr. Humphery,
Mr. Davies,
Mr. Trickett,
Mr. Ewing,
Mr. Wall,
Mr. McCourt,
Mr. Neild,
Mr. Collins.

The

The words proposed to be inserted were then inserted, and the motion as amended was passed on the following division:—

Ayes, 10.
Mr. Suttor,
Mr. Hoskins,
Mr. Humphery,
Mr. Davies,
Mr. Trickett,
Mr. Ewing,
Mr. Wall,
Mr. McCourt,
Mr. Neild,
Mr. Collins.

Noes, 2.
Mr. Garrard,
Mr. O'Sullivan.

J. GARRARD,
Chairman.

Office of the Parliamentary Standing Committee on Public Works,
Sydney, 22 March, 1894.

PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS.

MINUTES OF EVIDENCE.

PROPOSED SEWERAGE WORKS FOR PARRAMATTA.

WEDNESDAY, 7 FEBRUARY, 1894.

Present:—

JACOB GARRARD, Esq. (CHAIRMAN).

The Hon. WILLIAM HENRY SUTTOR.
The Hon. JAMES HOSKINS.
The Hon. FREDERICK THOMAS HUMPHERY.
The Hon. JOHN DAVIES, C.M.G.
The Hon. WILLIAM JOSEPH TRICKETT.
THOMAS THOMSON EWING, Esq.

WILLIAM CHANDOS WALL, Esq.
WILLIAM MCCOURT, Esq.
JOHN CASH NEILD, Esq.
EDWARD WILLIAM O'SULLIVAN, Esq.
CHARLES COLLINS, Esq.
HENRY DAWSON, Esq.

The Committee proceeded to consider the proposed Sewerage Works for Parramatta.

Joseph Barling, Esq., Under Secretary, Department of Public Works, sworn, and examined:—

1. *Chairman.*] Will you kindly recount to the Committee the various steps which have been taken in regard to this matter since the Committee last reported upon it, together with the reasons for again submitting it for investigation? Yes. On the 14th September, 1892, this Committee came to the conclusion, with regard to the proposal which was then before them as to the expediency of constructing sewerage works for the town of Parramatta, that it was not expedient to carry the work out for the reason that, in the opinion of the Committee, "the Sewage Farm is too small for the purpose, and that the sewage should be dealt with at the pumping station at Clay Cliff Creek, by a system of precipitation and filtration, or other effective modern process," and in due course the report of the Committee was laid before Parliament. On the report being printed and distributed, it was brought under the attention of Mr. Hickson, the Engineer-in-Chief for Sewerage, and this officer then submitted a long report, dated 12th November, 1892, in which he gave his reasons for not concurring with the opinion of the Committee, and he concluded by strongly urging that no action should be taken in the matter until a further investigation by engineering experts had been carried out. [*Vide Appendix.*] As the result of continued agitation on the part of the Member for Parramatta, Mr. Hugh Taylor, who was no doubt set in motion by the municipal authorities, Mr. Secretary Lyne approved of the appointment of a Board to further consider the whole matter, and on the 15th July, 1893, a Board consisting of Messrs. Wardell, Chamier, and Bell, Civil Engineers, were appointed to investigate the subject. For the information of the Committee I will read the letter setting forth the terms under which these gentlemen were appointed:—

J. Barling,
Esq.
7 Feb, 1894.

Gentlemen,

Department of Public Works, Sydney, 15 July, 1893.

I am directed to inform you that Mr. Secretary Lyne has been pleased to appoint you a Board, for the purpose of inquiring into the proposals which have been made for the construction of Sewerage Works for the town of Parramatta.

From the papers which are forwarded herewith, you will see that the Parliamentary Standing Committee on Public Works has reported on the subject, and has come to the conclusion that it is not expedient to carry out the scheme proposed by the Department, for the reason that in their opinion the Sewage Farm is too small for the purpose, and that the sewage should be dealt with at the pumping station at Clay Cliff Creek, by a system of precipitation and filtration, or other effective modern process.

The Engineer-in-Chief for Sewerage however adheres to the recommendation he has already made on the subject, and has entered very lengthily into his reasons for so doing. As the matter involves questions of a highly technical character, which only experts can properly determine, the Minister has come to the conclusion to appoint a Board of experts to fully review the evidence already given, and, after inspection, to call such further evidence as they may think necessary; and, after thus fully and diligently inquiring into the premises, to advise him on the merits of the whole question. I am therefore to request that you will undertake this duty. The fees will be 50 guineas each, with an additional fee of 6 guineas to Mr. Bell, as he has had to travel from Melbourne, specially, to undertake these duties; and I am to add that Mr. Secretary Lyne has been pleased to appoint you, W. W. Wardell, Esq., Chairman of the said Board.

I have, &c.,

J. BARLING,

Under Secretary.

W. W. Wardell, G. Chamier, and C. N. Bell, Esqs., C.E.

The Board at once entered upon the inquiry entrusted to them, and after investigation presented their report, dated 28th July, 1893, to the Minister. The conclusion of this report was, that subject to a suggestion made therein, viz., that the system be a "separate system" instead of a "partially separate system," as proposed by the Department, their judgment and experience confirmed the recommendation of the Department, supported—to quote their words—"by the opinion of those who are accepted as the best authorities in Europe on this branch of the science." I do not think I need further enlarge upon this matter as I hand in a copy of the Board's report [*Vide Appendix*], together with Mr. Hickson's

J. Barling, Esq.
7 Feb., 1894.

comments thereon, dated 27th September, 1893 [*Vide Appendix*]. It will be seen by a reference to the report that the Board estimate that the cost of constructing the works would be reduced by 25 per cent. if their proposed modification be carried out. I shall probably be asked by the Committee what is the Minister's view on this particular point, and if so I am to say that Mr. Secretary Lyne has no particular opinion on the matter, other than that he wishes to see the best scheme carried out. The question is one of a highly technical character, and as the point of relative cost is not a question on which will hang the adoption or otherwise of a sewerage scheme for Parramatta, I am to say that in the event of the scheme being passed, and on the details being worked out, it is found that the large saving mentioned by the Board can be effected, their proposal will be adopted. Mr. Hickson whom I have seen on the subject, is, however, doubtful whether this large saving will result. He points out that it is hardly possible that 25 per cent. could be saved on the total amount, and he thinks that the Board must have meant 25 per cent. on the cost of the works above the Pumping Station; that is to say, on about £45,000, or roughly, a saving of £11,500. As, however, the members of the Board are to be examined by the Committee, I would suggest that their evidence on this point be obtained direct. With regard to the attitude of the Municipal Council on the question, I may mention that in addition to the continual representations made by Mr. Taylor as to its urgency, the following letter, dated 25th September, 1893, was received by the Minister from the Council:—

Sir,

Town Hall, Parramatta, 25 September, 1893.

I am directed by his Worship the Mayor, to inform you that at a special meeting of the Council of the borough of Parramatta, held on the 14th instant, the following resolution was passed, viz. :—

"That his Worship the Mayor cause a letter to be forwarded to the Honorable the Minister for Public Works, informing him that this Council approves of the scheme for the sewerage works for this borough being carried out as submitted in the report from Messrs. Wardell, M.I.C.E., G. Napier Bell, M.I.C.E., and G. Chamier, M.I.C.E., and asking him to cause all necessary steps to be taken forthwith so that tenders may be invited for the construction of all necessary works."

And to request that you will kindly give the matter as contained in the foregoing resolution your most favourable consideration.

I have, &c.,

S. WICKHAM, Council Clerk.

The Honorable the Minister for Public Works.

On the 6th February a further letter was received, practically to the same effect, which I will also read:—

Sir,

Town Hall, Parramatta, 6th February, 1894.

I have the honor to again urge upon you the great necessity of commencing as quickly as possible, the sewerage scheme for Parramatta.

The report from Messrs. Wardell, M.I.C.E., G. Napier Bell, M.I.C.E., and G. Chamier, M.I.C.E., having been adopted by the Council, at a meeting of Council held on the 14th September, 1893, should convince the Public Works Committee of the necessity of sanctioning the work or some other which will afford the same relief. The river is greatly polluted with sewage from the Government establishments, and it is absolutely necessary that something should be done immediately to abate the nuisance and prevent disease.

I have, &c.,

CHARLES BYRNES, Mayor.

The Honorable the Minister for Public Works.

I might say, with regard to the last sentence, that we certainly object to the statement that the river is polluted by the sewage from the Government establishments. It may be polluted by the sewage to a certain extent; but I am advised that the pollution is chiefly caused by the sewage from the town.

2. *Mr. Hoskins.*] Evidence has been given showing that the Government establishments deal with their own sewage? Yes; though I am not prepared to say that none of it goes into the river. Still we have taken great care to prevent the pollution of the river. For the foregoing reasons Mr. Secretary Lyne, on the 1st February, submitted the following Resolution to Parliament:—"That it is expedient that the Report of the Parliamentary Standing Committee on Public Works upon the proposed construction of Sewerage Works for the Town of Parramatta, be remitted to the said Committee for its further consideration and report, for the following reason:—That since the said report was made, a Commission of Experts has reported favourably upon the scheme proposed by the Department, subject to a certain modification, a consideration of which report might lead the Committee to arrive at a different and more favourable conclusion." This was passed by the House, and in pursuance thereof the matter is again brought before the Committee.

3. *Chairman.*] You have nothing to add to that statement? No; I have nothing to add to it.

THURSDAY, 8 FEBRUARY, 1894.

Present:—

JACOB GARRARD, Esq. (CHAIRMAN).

The Hon. WILLIAM HENRY SUTTOR.

The Hon. JAMES HOSKINS.

The Hon. FREDERICK THOMAS HUMPHERY.

The Hon. JOHN DAVIES, C.M.G.

The Hon. WILLIAM JOSEPH TRICKETT.

THOMAS THOMSON EWING, Esq.

WILLIAM CHANDOS WALL, Esq.

WILLIAM MCCOURT, Esq.

JOHN CASH NEILD, Esq.

EDWARD WILLIAM O'SULLIVAN, Esq.

CHARLES COLLINS, Esq.

HENRY DAWSON, Esq.

The Committee further considered the proposed Sewerage Works for Parramatta.

Charles Napier Bell, Esq., M.I.C.E., sworn, and examined:—

C. N. Bell, Esq., M.I.C.E.

8 Feb., 1894.

4. *Chairman.*] How long have you been a member of the Institute of Civil Engineers? Since 1867.

5. You are a full member, of course? Yes.

6. Are you practising your profession in New South Wales? No, in New Zealand mostly, and also in Tasmania. I have been here for some little time, off and on.

7. I suppose you were first engaged in civil engineering in the old country? I have been engaged in my profession in many countries—in Russia, Spain, Germany, and South America.

8. The Committee would like to hear, briefly, your history as a professional man. Would you mind telling us where you served your articles? I first served with Messrs. Bell and Miller, of Glasgow, who are dock engineers. As a young man I made surveys and did other work in connection with docks and patent slips. I carried out land surveys, and did various work of that kind. I made surveys in the towns of Edinburgh and Glasgow. After perfecting myself in my profession as well as I could, I went to

to London, and immediately obtained employment on railway works in Brazil. I was employed in Brazil for about nine years, on railway works chiefly, right through from the Argentine up to Pernambuco, on harbour works in Buenos Ayres, and on harbour works and tramway works in South Brazil. Leaving Brazil, I went to Germany and Holland, where I was engaged on railway works. I also went to Russia for an English company, in connection with the obtaining of a concession for gasworks and waterworks. Then I was employed in Spain, in going over railway routes which were proposed to be made by English companies. As I have said, I was engaged for two years or more on railway works in Holland and Germany. I afterwards came to New Zealand, and was connected with the first public works carried out there. I have been connected with most of the railways of New Zealand, and have also been connected with their harbour works and sewer works, and have made innumerable reports on engineering subjects both for the Government and private individuals.

C. N. Bell,
Esq.,
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9. Was it in New Zealand that you first had anything to do, directly, with sewerage works? Yes; I carried out the sewerage of Christchurch. That was a large work, and is connected with a sewage farm. I also designed the sewerage for Napier, which has been carried out for a long time, and also the sewerage for Westport, which I think is now under construction. I have revised other sewerage works—one for Hastings, and other smaller works.

10. Have you been engaged in Australia in connection with sewerage works? No.

11. The Committee are to understand that your experience in connection with sewerage works has been confined to New Zealand? Yes.

12. At Christchurch the sewage is treated on the farm? Yes.

13. Is it dealt with in the same way at Napier? No; there is no suitable land available there.

14. Then what is the system of disposal? It is discharged into the harbour.

15. You, together with Messrs. Wardell and Chamier, formed a Board which reported upon the proposed sewerage works for Parramatta? Yes.

16. The unanimous conclusion of the Board was that the scheme was a good one, and that the area of land proposed to be set aside for the purpose of a sewage farm was ample. You also stated that you thought that the 40 acres which were to be filled up with dredging material, such as sand or silt, would be sufficient for the reception of the sewage for some time to come, and recommended that the 22 acres of natural soil—if I may use that term to distinguish it from the reclaimed land—should not be used for some years? That was the purport of our report.

17. You also recommended that, instead of the adoption of what is called the partially separate system, the whole of the storm-water should be excluded from the sewers, in order to reduce their size, and, consequently, their cost? Yes.

18. Are the Committee to understand that all three members of the Board were favourable to what is called the separate system of dealing with sewage? I think so; as far as I know the minds of the other two.

19. Is that the system adopted in Christchurch? Yes; strictly. There no rain-water is allowed into the sewers, and if I mistake not, people who let rain water run into the sewers are prosecuted.

20. You are aware that the whole of the sewerage system of Sydney is carried out upon what is known as the partially separate system? Yes; that is the general custom in sewerage works.

21. You are also aware that the quantity of flood-water to be admitted into the sewers at Parramatta is less than that admitted into the sewers at Sydney? Yes; considerably less.

22. Do you think that the Department might go a step further and entirely exclude all storm-water? The quantity of water proposed to be admitted into the Parramatta sewers is merely one cubic foot per minute per acre, but I think a great deal more than that will be admitted, only when it gets to the pumping-station it will be, I believe, overflowed. I think that is the system adopted in Parramatta.

23. You are under the impression that a great deal more than '92 cubic foot of storm-water is allowed to enter the sewers, and that when the water reaches the pumping-station, some of it is got rid of in order to lessen the pumping? Yes.

24. So that really only '92 per cent. is pumped on to the sewage farm? I believe that only 0'92 cubic foot is allowed to reach the farm.

25. The Board was unanimous in recommending the separate system? Yes. I know of no good reason for letting in the rain-water, especially in a town like Parramatta, which has a water supply, and which is situated on nice sloping land, so that the rain-water can readily find its way into the river, as it does now. If the rain-water is kept out of the sewers they can be greatly reduced in size, and thus their cost is lessened, while the cost of pumping is not so much, and the sewage which goes on to the land is more concentrated, and more easily dealt with.

26. But would not a greater fall per mile be required, because of the increased density of the sewage? I do not think the filthiness of the sewage would make the slightest difference in its flow on a gradient. What would obstruct it would be the fungus growth sticking to the pipes.

27. And would that vary according to the density of the sewage? It would probably be greater if the sewage were very dense; but the sewers should be flushed regularly with water.

28. How would the flushing be done; would all sewage matter be excluded for a time before the drains were flushed? Christchurch is a perfectly flat town, and presents great difficulties in connection with sewerage. There, at what is known as the "dead" end of every sewer, there is a concrete tank, generally holding about 1,200 gallons, and as there is no water supply in Christchurch, an artesian well is sunk in the bottom of each tank and keeps it full of water. The flushers, of whom three are employed for the whole district, go round, I think, three times a week and pull up the flap, allowing the water to go down the pipe. It is stopped at the next pipe and used to flush the next system, and so on from one to another, until it reaches the pumping-station. The flushing, however, could be done automatically, without the services of the flushers.

29. From your experience of Christchurch, you think that a greater fall would not be required, because of the density of the sewage? I do not think there is any necessity to consider the gradients in connection with the density of the sewage. The Christchurch sewers are set at as low a gradient as it is possible to set them, but they have been kept perfectly clean for ten years.

30. To get a greater gradient would increase the cost of sinking the sewer-pipes in the streets? If you made the gradients steeper I suppose the trenches would have to be deeper, or you would have to bring the pipes nearer the surface, and that is always objectionable.

- C. N. Bell,
Esq.,
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31. If it were necessary to have a sharper grade, the outlet at the pumping-station would have to be very much deeper too? Yes.
32. Consequently, there would be a greater lift for the pump in bringing the sewage up to the delivery-pipe? Yes.
33. What you would lose in quantity, because of the exclusion of storm-water, would be made up by the increased height which you would have to lift your sewage? No; I would not allow that argument, because there is no reason for increasing the gradients on account of the density of the sewage. It is necessary to make the gradients steeper where the sewers have to carry what is called road-grit—heavy sand and silt washed off the roads, which it is extremely difficult to get down the pipes. But where there is no sand or grit, the very lowest gradients given by authorities such as Bailey Denton are sufficient, and the Department have used those gradients in laying down the sewers in Parramatta.
34. You think that if the separate system were adopted, and storm water entirely excluded, perhaps 25 per cent. could be saved on the cost of the works above the pumping-station? Something like that. I got them to take it out again and they made it 30 per cent., but I think it is better to put it down at about 25 per cent.
35. And in view of the smaller quantity of sewage to be delivered from the pumping-station to the farm, there would be a slight decrease in the cost of the main outfall? That is included.
36. You estimate that there would be a saving of 25 per cent. on all works above the sewage farm? Yes, on the sewers, the delivery mains, and, I think, the reticulation ought also to be included.
37. Twenty-five per cent. would be the saving on the initial cost;—would there be any reduction, and, if so, how much, on the annual cost of pumping and dealing with the sewage? That could be reduced by the less interest which would have to be paid upon the capital cost, and also by the smaller volume of sewage to be handled; but there would not be a large reduction.
38. The largest reduction would be in the interest on the capital cost? Yes.
39. How long has the Christchurch system been in operation? I completed the work and left there eleven years ago.
40. So far as you know there has been no breakdown of the system, nor have complaints been made as to its effectiveness? No. I have always heard the Christchurch system spoken of as perfection, and there has not been a single word of complaint against it. There was no end of prognostications that it would be a failure, and that the farm would pollute the neighbourhood. There was a tremendous fight over the matter, which lasted a year or more, but eventually the work was carried out, and I may say that it has been an unqualified success.
41. So far as the question of flushing is concerned, Parramatta would be in a better position than Christchurch, because of its water supply? Yes; we had no water supply in Christchurch.
42. You had to create a water supply for flushing purposes there? When I say that there is no water supply I must add that we have artesian wells.
43. You had to sink artesian wells in order to carry out your flushing arrangements? At first we did not make very much provision for flushing, but after a month or two the smell from some of the sewers was so bad that I put flushing tanks at the blind or top-heads of all the sewers. In some cases land springs were let in and used instead of artesian bores. After that the sewers were flushed regularly three times a week, and there was not the slightest trouble with smells.
44. The Board of which you were a member personally examined the proposed site for the Parramatta sewage farm? Yes.
45. To what depth were you informed that the Department proposed to place silt or sand on the reclaimed land? The site it was proposed to reclaim was enclosed by a fascine bank, and divided by one or more cross banks. As I understand the proposal, the land is to be filled up to high-water mark with anything which the dredges deliver there, and from high-water mark to 5 feet above it, it will be filled in with sand similar to that which we saw being put upon the reclaimed land at Neutral Bay. That would make the land 5 feet above high water.
46. Do you think that that would provide sufficient sand for filtration purposes? I think it would be enough, especially if the area were broken up by a number of cross drains.
47. Is the reclaimed land intersected with cross drains? If it is not intersected with cross drains, the only drainage will be round the border by the river, where the water will leak out. If the land is cut up by one or more drains, the drainage will be more thorough.
48. The water will drain out to the river below high-water mark, instead of being confined to high-water mark? The effective drainage will be somewhat below high-water mark; it will be at nearly the mean sea level, because there will be some hours when the tide is below high-water mark, and some hours when it is above it.
49. I understand that up to high-water mark the stuff deposited on the land will be more or less impervious to wet, and that only the upper stratum of 5 feet of sand will form the filter bed? The soil will be saturated up to the water mark. That we can infer without experimenting.
50. Would it be very expensive to intersect the land by drains? Not very. The area is not very large.
51. Was an estimate of the proposed cost of the various works connected with the sewage farm put before the Board? Yes, we had all that information before us.
52. Did the Board come to the conclusion that in those estimates reasonable amounts were allowed? We did not take into account the estimated cost of reclamation, because we were given to understand that the Harbours and Rivers Department would do that work free of charge.
53. But I mean estimates for draining, and so on? I made out an estimate myself of what the cost of reclamation would be, but that was only for the higher part of the ground, which is clayey soil.
54. You mean that you estimated the cost of properly preparing the upper 22 acres, to make it fit for dealing with sewage? Yes.
55. But your Board recommended that that land should be put on one side altogether, and no expense incurred in connection with it, while silt and sand were to have been deposited upon the lower forty acres? Yes.
56. I asked you, had the Board put before it the departmental estimate of the cost of various works in connection with the reclamation of this land, and if so, do you think that the estimate gives the probable cost. Your answer is, that you understood that the reclamation was to be done for nothing
by

by the Harbours and Rivers Department. I refer, however, to the cost of draining, and doing other work in connection with the scheme? The departmental estimate for that was £40 an acre.

57. Did the Board agree that that was a reasonable estimate? Yes.

58. Do you say that you made a calculation yourself as to the probable cost of preparing for use the 22 acres above the reclamation limit? Yes; I made out an estimate in detail.

59. Did it correspond with the departmental estimate? I do not remember that we had a departmental estimate for that work apart from the reclamation work.

60. Will you kindly give us your estimate? My estimate for preparing the clayey land came to £84 an acre. The details are as follows:—

	£	s.	d.
Excavating and spreading soil, 400 cubic yards	23	6	4
Carting and filling sand	17	0	0
Two-inch tiled drain-pipes	17	6	8
Ti-tree fascine bundles to put in the drains over the pipes ..	12	6	0
Stumping and grubbing the land	3	0	0
Ploughing 18 inches deep	1	8	0
Cross-ploughing twice	0	8	0
Harrowing three strokes	0	5	0
Outlet pipe to river, 16 chains long, 9 inches diameter	6	12	0
Sewage carrier ditches and bank over the land, 6 chains at 8s. a chain ...	2	8	0
Total	£84	0	0

The departmental estimate of the cost of preparing the reclaimed land is £40 per acre.

61. But you have told us that you did not take into your calculation the cost of preparing the reclaimed land? I have not got the details, because the Department made out the estimate.

62. Did the Board consider the departmental estimate of £40 an acre a fair one? Yes; we considered it fair enough, considering that there is only the dressing-up of the land and the making of banks to be done.

63. Excluding the first cost of the material, whatever it may be? Yes, it seems fair enough. You have only to deal with sand which is perfectly level, so that there is nothing to be done but to make-up the different ditches and banks forming the plots which are going to be used.

64. How long were you connected with the Christchurch sewerage system after its completion? The sewerage of Christchurch was designed by Mr. William Clark, who designed some of the Sydney sewerage. As I was, at the time, the engineer of the Local Drainage Board, I carried out the work, and Mr. Clark's designs were considerably modified. He allowed for a certain quantity of rain water going through the sewers, but we excluded the rain water altogether.

65. While, in carrying out the Sydney sewerage scheme, Mr. William Clark's recommendations were closely followed, in carrying out the Christchurch scheme, you had the courage to go beyond his recommendation to some extent? Yes; we excluded the rain water altogether, but we let in the sub-soil water in a great many cases where it was found beneficial to land upon which houses were situated to do so. That also brought down the sub-soil water all over the area immediately.

66. Had you charge of the Christchurch system after it was completed and in proper working order? Yes, from 1876 to 1883.

67. During that time were there any complaints of a nuisance arising from the deposit of sewage upon the farm? The complaints were more in the nature of anticipations of what would happen. There were numerous complaints of that kind.

68. You have already told us that you had a big fight about the matter, and I want to know if, after the scheme was in operation, serious objection was taken to any nuisance arising from the deposit of sewage upon the farm? No, there has never been a complaint of that kind. The complaints made at first were more in the nature of anticipations, but as the work went on they subsided, and now we never hear them. No one ever dreams of complaining now.

69. Is the Christchurch sewage farm worked at a profit? I think not, but I do not think that the loss, if any, is very great.

70. Is it true that since the farm was established it has been surrounded more or less thickly by residences? Yes, there are a considerable number of residences there. The suburb of Linwood, which lies $1\frac{1}{4}$ miles to leeward of the farm, has grown very much.

71. Why do you speak of it as to leeward? Because in summer time the wind is north-east, and this place lies to the south-west of the farm.

72. No objection has been taken to it by the inhabitants of Linwood? I never heard of any.

73. How long is it since you were in Christchurch? I went over the farm with the Scientific Congress which met at Christchurch in 1891 or 1892; and in 1892 I also went over it with the engineer.

74. What is its area? The Board possess 470 acres.

75. At present they only use about 42 acres? That is the area which has been horse-shovelled and laid out into plots. It receives the drainage of about 30,000 inhabitants. In summer time the farm does not receive enough sewage to keep the 42 acres going, because of the dry weather. But of course in winter time there is enough.

76. What is the nature of the soil? Loamy or discoloured sand, with a small amount of earth below.

77. It is not such pure sand as you have at Botany? It is very like it. The Botany sand has layers of silt below.

78. In your opinion is pure sand better adapted for the work of a sewage farm than sand mixed with loam? Pure sand is supposed by the authorities, to be the best, and it answers exceedingly well in Christchurch.

79. Knowing the position of the proposed farm in Parramatta, do you think it would be likely to create a nuisance which would be detrimental to Granville and to the people on the other side of the river? I think that if the farm is attended to with proper and ordinary care, there will not be the slightest nuisance.

80. Have you considered the various mechanical and chemical methods used for dealing with sewage? I have made myself acquainted so far as I can, with all the methods for purifying sewage that have come up from time to time, but they are almost innumerable, and every year presents several new ones.

C. N. Bell,
Esq.,
M.I.C.E.

8 Feb., 1894.

81. All more or less short-lived? After a few years they are generally put aside for some novelty.
82. Have you given any attention to what is known as the International system? I have read all I could about it, but I have not seen it in operation. It has not been adopted in these colonies.
83. Do you know from your reading whether it has been tried anywhere upon a sufficiently large scale to allow of a proper judgment being made as to its utility? I have read that there are several places in England where it has been tried and approved of, but I have also read of one or two places where it has been tried, and the results have been thought doubtful. The preponderance of evidence, I think, is that it is satisfactory.
84. Are you of opinion that where a suitable site for a farm for dealing with sewage is available, it is preferable to put the sewage upon the land rather than to treat it by chemical or mechanical means? I should always be inclined to recommend a natural means of dealing with it, instead of an artificial means. The only instance where I remember seeing the result of a mechanical process was at Rio de Janeiro, but there they had unlimited trouble. They found, as would certainly be found to be the case in these colonies, that it was impossible to sell the sludge, and when I saw them last they were obstructed with a mountain of sludge with which they could do nothing, but which they did not like to throw into the harbour. That sludge is of low manurial value, and the farmers prefer to use bone dust, guano, and super-phosphates. In Christchurch a private firm made a much more concentrated manure than is proposed to be made by the International system, but it could not get a sale for it.
85. Suppose this scheme were carried out, and the area of land was found to be not sufficient to deal with the sewage, and that a nuisance was caused, would it be possible to supplement the farm treatment with a chemical treatment at the pumping-station;—if the sewage farm was found not to be meeting expectations, could we add that system to the present system? Certainly; except that you would have thrown away the farm and the carriers, which lead the sewage from the pumps to the farm.
86. Could not the sewage be dealt with at the pumping-station by chemical methods, and purified to a certain extent, and then be sent on to the sewage farm? You could turn the effluent from the precipitation works on to the sewage farm, but it would be unnecessary, because the effluent would not be much more than common water if it had been thoroughly purified at the International works.
87. Mr. Hickson, in a report which formed the basis of your examination, states that these artificial or chemical methods do not actually destroy the objectionable matter in sewage, but merely clarify it, so that there is still a danger of the effluent developing unpleasant, if not dangerous, microbes? I should not be too positive in my assertion about that, as there seems to be some amount of contrary opinion. Those who are patenting and selling the International process say that it clarifies everything; while others assert that it does not do so. We know very little about the International process, except from the patentees; but it cannot, in any case, do more than sand does in the filtration of sewage.
88. It is only a question of using a chemical process instead of a natural one? Yes. When sewage is spread upon the land, not only do the microbes, but even the plants attack it and live upon it. They both feed on its impurities. With a chemical process, however, you make a sludge of very slight manurial value which it is difficult for farmers to deal with because of the bulk, and that has to be put on the land, so that you have a complex process, instead of a simple direct one.
89. What is grown upon the Christchurch farm? The chief crops are rye-grass, and red clover, from which very large quantities of hay are made. They also grow vegetables—carrots, mangels, and turnips.
90. For home consumption? No. The farm carries about 100 head of cattle, and they are always buying store cattle, and selling them fattened.
91. The produce of the farm is used to feed the stock run upon it? Yes. Nothing that is produced there is consumed by human beings. There are a large number of cattle, and a few sheep, and they eat up almost everything. The farm authorities sell some hundreds of pounds worth of hay every year.
92. Is it because it is feared that evil consequences might arise from the consumption of these carrots by human beings, that they are not sold to outsiders? No; I do not think that. It is because you cannot grow grain upon the soil, because it is so saturated with water. Then, too, carrots, mangels, and turnips are not readily saleable in large quantities.
93. Does the farm only grow enough to feed the stock? Some of the land is divided into small plots and devoted to the growing of mangels and carrots, but three-fourths of it or more is devoted to the growth of rye grass and red clover.
94. Are no vegetables grown for the use of the employees upon the farms? Each man has a little garden, but I notice that they keep their gardens away from the sewage.
95. Do you think that it would be unwise for them to use the sewage on their own plots? No; but the sewage plots are drowned with water every now and then, and you could not very well deal with a small garden plot under those circumstances.
96. You do not anticipate any danger to their health? I do not believe for a moment that in the process of growth, microbes and injurious organisms can be passed through the tissues of a plant.
97. You would have no objection to consuming vegetables grown upon the farm? Not the slightest. The only danger is that if there were injurious microbes, such as typhoid and diphtheria present, they might lodge on the surface of the leaves and the animals might eat them, but they could not enter into the tissues of the plants.
98. If due care is taken the sewage need not be allowed to get upon the leaves of the plants? But it does sometimes. A plot ought not to be flooded so deeply as to submerge the crop, but it does happen sometimes.
99. *Mr. Humphrey.*] Do you think it would be well to follow out the suggestion of the Board and use the 40 acres of reclaimed land before dealing with the 32 acres of land which are not subject to tidal influence? I am inclined to think that the 40 acres would be sufficient; but if I had the means, I think I would bring in the 22 acres also.
100. Which portion would you recommend should be dealt with first? That which is easiest got at and trenched—the sandy portion.
101. The 42 acres which are subject to tidal influence? Yes.
102. You would not use the 22 acres until the increasing sewage rendered it necessary? If there were the means of bringing it under cultivation, I should use it at once.
103. At Christchurch were you engineer to the Government or to the Local Drainage Board? The Drainage Board.

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104. Can you say what the cost of the system was when banded over complete, that is, including reticulation? It is difficult to say. The total cost of the drainage system was about £275,000, but that included the cost of a large quantity of rural drainage. Great ditches had to be dug in the fields to carry off the storm-water, though they had really nothing to do with the sewerage system. The Drainage Board there has control over the whole of the country side round about for a great distance. The sewerage scheme proper only applied to Christchurch and its thickly peopled suburbs, where there is a population of about 30,000, and it cost, I think, a little over £130,000.
105. Is that including the mains as well as the reticulation-pipes? Everything: the pumps, the reticulation, and the sewage farm.
106. How is the cost of maintenance and interest upon the outlay made up? I am not certain what the cost of maintenance is, but if I remember rightly, it comes to about £700 a year, exclusive of interest.
107. That is the total cost of maintenance? That pays the attendance on the farm, the flushers, and the people who look after the pumps, and provides coal, oil, waste, and repairs.
108. That is the total annual cost of maintenance, exclusive of the interest upon the outlay? Yes; it comes to between £700 and £800.
109. Did you examine the silt at Neutral Bay? Yes.
110. Do you think it suitable for drainage purposes? I thought it was a very good kind of material for sewerage purposes. It is dirty sand, with streaks of silt in it.
111. You think it would be quite suitable for sewerage purposes? I think so; I do not know any reason why it would not do.
112. Do you approve of the proposal to raise the land now subject to tidal influences to a height of 5 feet above the highest tide by using this Neutral Bay sand? I think it will be entirely satisfactory if it is kept up to the height of 5 feet above high water, and is divided into smaller sections by one or two drains.
113. There is no doubt about the suitability of the silt? I reason by the analogy of the Christchurch farm, where the subsoil water was considerably less than 5 feet from the surface. In some places I do not think it was more than 3 feet below the surface. That is in the central parts, away from the drains.
114. So that a height of 5 feet would be more than ample? I have no doubt that you would not get more than 3 feet. The water will stand below the surface at a depth of about 3 feet, unless you cut up the land with drains, because, as I have said, the water will rise in the sand from high-water mark at the river side to a height determined by the water angle in the sand.
115. You mentioned just now that 470 acres had been reserved at Christchurch for the purpose of a sewage farm;—upon whose recommendation was that large area set apart? As soon as we found that Mr. William Clark was going to recommend a sewage farm, some reserves were at once claimed from the Government. About 470 acres of sand hills were got in this way without costing the Board anything.
116. You think that such a large area is quite unnecessary, and that 42 acres would be ample for all purposes for years to come? Well, 42 acres were laid out there originally, and they have never increased the area, because in summer time they have not enough sewage.
117. From that you reason that 60 acres would be ample to serve a population many times greater than the present population of Parramatta? From my experience of the Christchurch sewage farm, and from what I have seen of the Botany farm, I infer that it is ample for the small population of Parramatta.
118. You are speaking of the present population, but are you aware that the population of Parramatta has doubled itself within the last ten or twelve years;—have you taken the natural increase into consideration? We have taken into consideration the proposed increase up to 48,000; but I do not think the population will increase to that extent. My experience of towns in New Zealand is that while loan money is being spent, and everything is booming, a town will grow fast, and then will subside again.
119. The mayor of the adjacent borough has objected to the proposed sewage farm on the ground that it would be a nuisance, and would depreciate the value of property? These are *pro forma* objections, made simply as a matter of precaution. We had innumerable objections of that kind in Christchurch, but they all subsided when the work was carried out.
120. You have heard of no objections since the work was carried out? No. At first innumerable objections were preferred to the Board by various bodies, but these objections are generally put forward *pro forma* in order to stave off any responsibility.
121. Are there many houses close to the Christchurch sewage farm? There are one or two very nice villa houses close to the farm, and a good many cottages. The buildings have increased in number since the farm was established.
122. Are those buildings situate within the borough? The farm is outside the borough, and these buildings are situate upon land round about the farm—some of them very close to it. The farm is surrounded by a double belt of pine trees.
123. What is its distance from the nearest borough? The town of Linwood is about $1\frac{3}{4}$ miles distant, and I think the borough of Linwood has a population of 4,000 or 5,000, though there were very few people there when the farm was started.
124. *Mr. Hoskins.*] Are we to understand that you consider sand the most suitable soil to ensure the success of a sewage farm? As far as my small experience goes, I think sand is the best soil for a sewage farm, but these farms are made of every sort of soil. The soil on the Adelaide sewage farm is a red loamy clay, and the 8,000 acres which they are preparing for a sewage farm at Melbourne, are composed of a tough, ferruginous clay. They are breaking up the clay with deep-furrow ploughs 2 feet deep.
125. Have you seen Mr. Hickson's report of the 12th November, 1892, in which the opinion of a number of experts in regard to the disposal of sewage is given? Yes; I have read it.
126. Have you noticed that all the engineers quoted in the report recommend sand as the soil upon which sewage should be cast? Yes, and the most exhaustive experiments have been carried out in Massachusetts, U.S.A., in regard to the filtration of sewage, the report of the Massachusetts Board of Health being that sand is superior to all other soil.
127. Are you of that opinion? I have not had experience myself of other soils, but I presume that what they say is true.
128. What was the soil on the sewage farm at Christchurch? Sand.
129. What depth of sand is there? All sorts of depths. Some considerable distance down the soil becomes loamier and loamier until you get into hard silt, but there is sand to a considerable depth.
130. Have you seen the sewage farm at Adelaide? No, I have not. I only know it from what I have heard about it.

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131. Do you know of your own knowledge that the surface soil there is not sand but clay? I only know what I have been told, and I have heard that the soil there is red loamy earth.
132. Can you say whether any nuisance or disagreeable effluvium is experienced there because the surface is not composed of sand? I heard of complaints being made a long time ago about the Adelaide sewage farm, but I have been told that it is working satisfactorily now. I think the complaints that were made referred more to the state of the sewers than to the state of the farm.
133. You say that the soil of the Melbourne sewage farm is not sand? No, it is a tough, ferruginous clay.
134. Have you ascertained if they intend to cover it with sand? They do not propose to do anything of the kind. On the contrary, they are going, at a great expense, to break it up as small and as carefully as they can. They can only break it up to a depth of about 2 feet, but they intend to cross-plough it and harrow it until they get it somewhat into condition.
135. They intend to cross-plough it with a view to making the clay more absorbent than it would otherwise be? That is the only way they have of making it absorbent.
136. I am to infer that you confirm the opinions embodied in the report that sand is the best soil for a sewage farm? I think that it is.
137. Have you seen any of the sewage farms of England? I do not remember seeing any of them in England, though there are a great number there. I have read about them all.
138. Have you seen any of the sewage farms on the continent of Europe,—at Berlin, or Paris? No. The Berlin farm, I think, has a sandy soil.
139. In your reading on this subject, have you observed that there is a considerable difference of opinion amongst engineers as to whether disagreeable effluvia are not emitted from sewage farms even in England, and have not great complaints been made on the subject? There have been great complaints.
140. Do you not know that complaints are being made now? There have been great complaints, but I do not know whether they have been satisfied yet.
141. After several years experience of sewage farms, complaints have been made by residents living near of the nuisance created by them? Occasionally that has been so, but as far as I have read, such complaints have generally been caused by neglect in dealing with the sewage properly, owing to the economy practised by the various Boards of municipalities who have had charge of the work.
142. Do you not know that in England the Local Government Board are clothed with sufficient power to compel corporations and others who have control of sewage farms, to abate the nuisance caused by these farms? I suppose that when a nuisance becomes intolerable the Government Board steps in and compels the people to do away with it, which they accordingly do.
143. I suppose you know that there is a difference of opinion amongst engineers and sanitary authorities as to whether sewage farms are a nuisance or not to the neighbourhood in which they are situated? I think that the general opinion amongst engineers is that sewage farms are the best means of disposing with sewage yet known.
144. I am not asking you the opinions of engineers, but the opinions of sanitary authorities? Sanitary authorities also agree that they are the best means of disposing of sewage.
145. You are aware that there are great differences of opinion among them? I acknowledge that there are great differences of opinion among them.
146. I suppose you are aware that nearly all the surface soil of the 22 acres at Parramatta, which are above high-water mark, is clay? There are only 10 inches of soil on that land, and then you come to 2 feet of weathered earthy clay. Below that is a strong ferruginous clay, so that there is about 4 feet of disposable material altogether. The soil is weathered, and in a loose condition.
147. But the sub-soil is not suitable for a sewage farm? No; the subsoil is 3 feet down, and it is a very tight clay.
148. In reply to a question by Mr. Humphery you advised that this land should be made available for the disposal of sewage, and you said that you proposed to plough it and cross-plough it, and take other steps to prepare it, at a cost of £84 per acre? Yes. That includes the cost of draining it.
149. Having prepared the land by ploughing, sub-soil ploughing, and cross-ploughing, would you deposit sand on the surface as the best material to receive the sewage? No.
150. Would you put the sewage straight on to the clay? The clay would be ploughed, cross-ploughed, and harrowed, and by that means the 10 inches of soil would get into it and make it friable. If it was then allowed to absorb the sewage, and plants were grown upon it, it would, I presume, become similar to the soil on the Adelaide farm.
151. Suppose the clay was almost impermeable, would it not in time become so charged with sewage and so impure as to be a nuisance to the neighbourhood? It will not become impure or overcharged with sewage if it were not dosed too much, and if it were regularly drained.
152. Where do you propose to drain it? Into the river. I have provided for those drains in my estimate of £84.
153. Even supposing it were drained, the solid matter would be left, and would that not make the land impure and cause the farm to be a nuisance in a climate like that we have here? The clay soil would be no more subject to that contingency than sand would be, unless you overdosed it, and neglected to drain it. The microbes and the plants together would destroy the impurity, and if the land were properly pulverised for the reception of the sewage, would turn it into pure earth or *humus* again. As to the depth of the sub-soil, 3 feet is quite sufficient. Below that is the impervious clay with which you cannot deal, as, in the same way, below the 5 feet of reclaimed land is the standing water with which you cannot deal. Each piece of land is in the same case. If the 3 feet of soil on the higher piece of land is properly drained and not overdosed, and plants are allowed to grow on it, it will not be any worse than the sandy piece.
154. Is it not a fact that sewage is so improved by the action of sand that in course of time it becomes innocuous as regards smell, whereas if it is deposited on soil of a non-absorbent character, noisome exhalations are emitted that would not come from the sand? The clay would be absorbent, though not to the same extent as the sand. If you drained the clay, it would become perfectly absorbent, and all impurities in it would be consumed by the plants growing on it. If it were properly ploughed and drained, it would be under the same conditions as regards purification as the sandy soil, and I am sure that it would deal with the sewage as satisfactorily as the sand, though I do not think it would take anything like so much.
155. You admit that this friable clay would not take so much sewage as an equal area of sand would take? I do not think it would; but I am not talking of my personal experience.

156. If your views were given effect to, and these 22 acres of clay were ploughed, cross-ploughed, and properly prepared, would not the land be more expensive to keep in order than the reclaimed land? I do not know the grounds on which you make that supposition.

157. Would it not require a great deal of attention to keep the soil stirred and prevent the emission of disagreeable smells? The drains being underground drains would not be supposed to require any maintenance, while the surface of the ground would have to be ploughed from time to time, as would also the sandy portion.

158. But the sand would not require to be ploughed so frequently as the clay? There are means of dealing with this earthy land which are perfectly feasible, however tight the ground may be. It has been proved by experiments in England and elsewhere, that if you make trenches 10 or 12 feet apart, and fill them with sand or gravel, the land becomes highly porous.

159. Does not that infer the feasibility of my suggestion that it would be better to put sand on top of the land? Of course it would be better, but the expense would be large.

160. Would the sand not prevent a nuisance? I think, if trenches 1 foot wide were made and filled up with sand, they would be as efficacious as you could desire. If the land were trenched in that way, it would become highly porous.

161. You admit that the 22 acres of clay, whatever process they might be subjected to, would be more liable to cause a nuisance than the sand on which it is proposed to deposit the sewage;—that being so, do you not think it possible that the municipality of Granville, which adjoins the farm, and municipality of Rydalmere on the other side of the river, may make complaints and obtain an injunction from the Supreme Court, preventing the Government from allowing the nuisance to continue? I have no doubt that they will make complaints, whether there is a nuisance or not. That is my experience.

162. If, after the Government have gone to great expense in establishing the farm, these municipalities obtained an injunction from the Court preventing the Government from going on with the work, the country would be saddled with an enormous useless expense? That might happen. It has happened before.

163. I ask you if, after your experience of Christchurch, you think it advisable that the country should run the risk which the expenditure of money upon a sewage farm would entail, if other means could be adopted for getting rid of the sewage? My experience is, that no end of complaints will be made at first, but that when the farm is in operation they will die out, and you will hear no more about them.

164. You have been to the Botany sewage farm? Yes.

165. You know the nature of the soil there—sand? Yes.

166. According to the best authorities, and according to your own evidence, that is admittedly the best soil on which to deposit sewage? Yes.

167. When you visited the farm did you perceive an offensive smell coming from the sewage deposited upon the ground? No; I perceived nothing to which I could take exception. Close to the sewage there is a slightly nauseous smell, but a short distance away there is no perceptible smell. I found nothing to object to there.

168. I suppose you observed that the situation of that farm was especially suitable, inasmuch as there are not many residences near it, and there is a large area reserved for future use? I think there are people living in the neighbourhood, across the river.

169. That is a considerable distance away? Not very far off.

170. I suppose you admit that the circumstances surrounding the proposed farm at Parramatta are different from those surrounding the Botany farm, seeing that at Parramatta there are several townships in the immediate neighbourhood and no great depth of sand as there is at Botany? The two places are not very different.

171. Seeing that the land at Parramatta is very flat, that the district is an old settled one, that there are a large number of people living near the proposed farm, and that the soil is very different from the Botany soil, do you not think that the Government should proceed with great caution in considering the proposal? I do not know what influence the people of the district may bring to bear to prevent the project being carried out, or to ruin it, but my opinion is that it will not be a nuisance to anybody, however close he may live to it. There are three or four families of children living upon the sewage farm at Christchurch, and the people working there tell us that the children have never experienced better health elsewhere. I also heard that at Botany the people were perfectly healthy; and the statement that these farms have an injurious effect upon health has been disproved in Europe times out of number.

172. But you have not answered my question: While at Botany the Government own a large tract of land composed entirely of sand, at Parramatta the area is limited, and the soil very different, while the farm is situated close to a settled locality;—under these circumstances, do you not think that the Government should exercise great caution in dealing with this matter? If the Government expect that influence will be brought to bear to ruin the project, or to burst it up after it has started, of course they should use great caution.

173. What is the minimum depth of sand which you think ought to be spread over the 40 acres to insure that the sewage cast upon it will not cause a nuisance? It is impossible to say what should be the minimum, but I should think that 5 feet would do well enough. Of course if you had 8 feet it would be much better.

174. *Mr. Davies.* Did I understand you to say, in reply to the Chairman, that you were a recognised sanitary engineer? There is no such distinction as you seek to draw.

175. Are you a sanitary engineer? Not properly so called. I have done all sorts of work, sanitary engineering included.

176. That is not an answer to my question? I have not devoted myself to sanitary engineering alone, but I have done a good deal of it.

177. The only works you can refer to are at Christchurch? I have designed other sewerage works, but the principal works on which I have resided, and which I have carried out, are those at Christchurch.

178. Those works, you say, have been successful? Yes.

179. You have made yourself acquainted with the situation of the proposed sewage farm at Parramatta? Yes.

180. Do you tell the Committee that you approve of a large quantity of crude sewage and fecal matter being cast upon 30 or 40 acres of land, and allowed to drain into the Parramatta River? When you say cast

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cast upon the land, you should add, "With the precautions which constitute a properly-kept sewage farm." If you cast the sewage on the land, and take no care how you do it, you may create a great nuisance.

181. Do you think that the river mud, silt, and sand, which is to be put upon this land, are the proper ingredients for the filter-bed of the sewage farm? I think that sand and sandy silt are very good materials for a sewage farm.

182. Would silt and sludge already charged with sewage matter make a good filter? If only silt were used, care would be required; but you could make a sewage farm of even the toughest clay.

183. If this land is reclaimed and raised 5 feet above high-water mark, there can be no possible objection to placing crude sewage upon it, supposing it is drained in the way you speak of? No.

184. There would be no smell? The smell will not extend much beyond the boundaries of the farm—at least that is my experience of the sewage farms at Christchurch and Botany, where I could not perceive the smell at a short distance away.

185. You saw the crude sewage on the land at Botany? Yes.

186. Do you tell the Committee that no smell comes from it? There is a smell close to the plots on which the sewage is spread, but I could perceive no smell beyond the limits of the farm.

187. Do you mean to tell the Committee that there is no smell from the sewage when you are in such close contact with it as you were at Botany? There is a smell when you are on the land itself. There is always a mawkish smell.

188. Has not the fecal matter always a vile smell? No; it loses its fecal smell when it falls down the drains, and mingles with the other sewage. The well-known smell of sewage has nothing to do with the proper fecal smell. The smell of a water closet has not the slightest resemblance to the smell of crude sewage.

189. How do you account for that? Because of the organic changes which take place.

190. Would there be no smell from a bed of fecal matter under the hot sun of this Colony? There would be the smell of fresh sewage, which is not a fecal smell, properly so called.

191. Would there not be a very vile smell, and a vapour arising from the sewage-beds? There is a mawkish, sourish smell peculiar to sewage noticeable where the beds are soaked with it, but the smell is not strong, and does not extend far. I know of no reason to suppose that it is unhealthy; in fact it is not unhealthy, and has no influence at all upon health.

192. I suppose it is quite possible to become acclimatised to anything? It is not the smells or gases, such as sulphuretted hydrogen, that affect the health. What do affect the health are the dried bacilli found in the sewage. If they blow about and get into the system they become injurious, but the smell has no bad effect.

193. You regard the scheme submitted to you and your colleagues for report as a perfect scheme? I can conceive of conditions which would make it more perfect.

194. In what respect? Nothing in this world is quite perfect. If instead of 40 acres we had 400, that would be an improvement.

195. You think then that the area of the farm is not sufficiently large? On the contrary, we have evidence to show that it is sufficiently large.

196. But you say that if you had 400 acres the system would be more perfect? No doubt the greater the area the better it would be. But there is ample room at Parramatta. The farm can be extended to an area of 167 acres by the same means as are to be used for reclaiming the 40 acres. There is abundance of land, and it is only a question of filling it up, and erecting fascine banks.

197. Did you and your colleagues make a calculation as to the probable cost of increasing the area? We looked at the plan to see if it were possible to increase the area, and I think we saw that about 160 acres could be reclaimed there.

198. Can you point out to the Committee what land you think could be reclaimed? The land lying on the left hand side of Duck River could be reclaimed for a considerable distance around. We reckon that nearly twice as much could be got by extending the farm round that way with the same kind of reclamation as it is proposed to carry on there.

199. I understand that you and your colleagues came to the conclusion that it is quite possible to increase the area to 160 acres by reclaiming the land along the Duck River? Yes.

200. Do you think the farm would be improved if more land were reclaimed? No doubt the more land you have, and the less number of people draining upon it, the more easily is your farm managed, and the less trouble it would be to keep it clean.

201. That was the reason that prompted you and your colleagues to make an inquiry as to whether it was possible to get a larger slice of land? Yes.

202. You say that the river mud and silt were shown to you as the proposed material for making the reclamation? I was given to understand that the reclamation would be made by material similar to that which we saw at Neutral Bay, where the lower parts are being filled up with gravel, tough clay, black mud full of shells, &c. The top part was covered with various kinds of sand, some of it exceedingly fine, and some very coarse, with a little gravel or silt mixed in with it. They showed me that as a sample of the material to be used at Parramatta, and I think the rest of the Board came to the conclusion that it would do very well.

203. Did you see the silt and mud that had been raised by the dredges at Homebush Bay, close to the site of the proposed farm? Yes.

204. Do you think that it would be useful for filling-up purposes? Anything would be suitable for raising the land to high-water mark, and that does not come into the question at all. What we have to consider is, the character of the material to be used in raising the land from high-water mark to the 5 feet proposed by the Department. That material must be good, but the stuff on which it is placed is of no consequence.

205. The filtration will be done above high-water mark? It cannot be done below the water mark.

206. And it should be sharp sand? The purer the sand the better. With regard to the twenty-two acres of land which has been referred to, there is clay below 3 feet of top soil, but it is of no use our considering that. All we have to use is the 3 feet. In the same way, it does not matter what you put upon the 40 acres below the water level. It is what you put upon the high-water level which matters.

207. Do you know what provision is made for the drainage? No, I cannot remember.

208. Is it not absolutely necessary that there shall be a thorough system of drainage? At Botany there are

are no drains, and I believe they get satisfactory results there; but if the land were cut up with drains, it would facilitate the drying of the soil, and would get the sub-soil water as low as possible.

209. The liquid matter runs into the side drains? Yes, and the more side drains you have, the lower you reduce the water level.

210. They have no system of drainage at Botany? No; there are no drains there.

211. Are there not side drains for taking away the water after the land has been flooded? There may be a drain at the back of the plots and the river at the front, but the land is not cut up by drains. In Christchurch the sub-soil water rose and made ponds upon the surface, and we had to make drains 7, 8, and 9 feet deep in order to lower the water. These drains are maintained with great difficulty.

212. How were they constructed? They were dug out with a shovel and faced with fascines of manuka. That immediately lowered all the sub-soil waters in the farm.

213. You regard the Parramatta sewerage system as a fairly perfect one? I think it is the best that could be proposed.

214. And it would be effective? I am not partial to manufacturing processes, because you are never certain of the improvements that are constantly cropping up. Improvements have cropped up since our report was made six months ago, which threaten to totally do away with the ferozone process, which was so much advocated four or five years ago. That process was very popular for a short time, but there is no saying what other improvements may crop up any day.

215. Are you aware that most of the opinions quoted on this system are very old, going back to 1865? Opinions about what process—the International process?

216. Opinions upon the whole question? I think Mr. Hickson brings them up to date.

217. Most of them are very ancient? The ferozone process is one of the last, but other new processes have cropped up lately.

218. Who is the most reliable of the authorities quoted by Mr. Hickson? They are now treating sewage very successfully by means of electrolysis, about which they boast a great deal.

219. Do you regard that as the latest development in the treatment of sewage? I have not much confidence in the system of treating sewage by electricity, but I have not had enough experience to be able to talk about the subject.

220. You pin your faith to the farm system? I think that is the most natural way of dealing with sewage. I have very little confidence in manufacturing processes.

221. *Mr. Trickett.* Do I understand that the stuff you inspected at Neutral Bay is intended to be put below the water-line or above it? The filling up at Neutral Bay is composed of mud, and silt, and clay to about high-water mark, and is topped off with 5 or 6 feet of sand and gravel, which is above high-water mark.

222. It is the upper part that will do the filtering? Yes; only the upper part, because there can be no filtration below high-water mark.

223. In the report of the Board, dated the 28th July, you say: "We visited the Reclamation Works at Neutral Bay and Long Cove to ascertain the nature of the material which is to be obtained, and its suitability for sewage farming uses." I want to know if that filling up is similar to the filling up which would be used for the sewage farm? We were shown the Neutral Bay filling up under the supposition that similar material would be used at Parramatta.

224. And you thought it would be effective? We thought that the material which we saw at Neutral Bay was very good.

225. Did you make any experiments with the soil on the upper portion of the proposed sewage farm? There is no soil with which to make experiments on the part which it is proposed to reclaim, and I have already referred to the character of the soil on the other part.

226. I think there must be some soil worth experimenting with, because on page 69 of the report of the Public Works Committee Mr. G. H. Stayton says: "Of the two bottles of effluent, which were submitted to the Committee on Tuesday, the clearer effluent came through soil taken from Parramatta; the other came from soil taken from Webb's grant. Webb's grant is not expected to take more than the sewage of about 800 persons per acre. If sewage through Parramatta soil takes six times as long to go a depth of only 6 or 8 inches, as was explained to the Committee, I would ask the question, how long would it take to go through 3 or 4 feet, even with the subsoil drains 20 feet apart?" So that Mr. Stayton must have taken some soil from the 20-acre piece and tested it? Yes.

227. Have you made any experiments to prove the correctness of his test;—Mr. Stayton tries to show that filtration through the Parramatta soil will be so slow that it will not be able to treat the quantity of sewage it is intended to deal with? No; but I presume that the soil he treated had never been worked; that it was in its original condition.

228. Samples of the soil from each place were put in similar utensils, and it took six times as long for sewage to filter through the Parramatta soil as it took for it to filter through the Webb's Grant soil;—if that is the case, would not the filtering process at Parramatta be very slow? It would be very slow unless the soil were worked up and prepared as I propose to prepare it, at a cost of £84 an acre. When that amount of money has been expended upon it the sewage would probably percolate four times as fast as it can do now.

229. But the soil must have been pretty well broken up in the journey from Parramatta to Sydney, and in putting it into the filter? I do not know how Mr. Stayton did it.

230. Was not that a very good test of the filtering properties of the two soils? I should not lay too much stress upon a small test like that. It might lead you astray as to what would happen on a large scale. As a matter of fact, farms are made of that kind of soil and do well. The soil on the Adelaide farm is similar. Of course it would not be necessary to touch that 22 acres if it were thought that it would not make good soil, because it would not cost much more to reclaim 22 additional acres.

231. But the proposal is to reclaim 40 acres, and to use this 22 acres, and I take it that those who are responsible for this scheme say that the 22 acres will be quite as good as the reclaimed portion? There is not much importance to be attached to that if it can be shown that 22 more acres of land can be reclaimed, and that is undoubtedly the case.

232. Do you advise then that these 22 acres shall be abandoned? I should certainly try the soil first.

233. You would experiment with a small area, I suppose? With an acre or two.

234. You say that it will have to be treated;—in what way will it have to be treated? It must be ploughed,

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- ploughed, cross-ploughed, and drained, either with tiled drains and faggots, or perhaps by making trenches down to the bottom clay, and filling up with sand. You must arrange these trenches to converge to a 9-inch drain pipe opening into the river. I provide for such a pipe in my estimate.
235. You have read Mr. Stayton's evidence, I suppose? Yes; I read all that evidence.
236. Mr. Stayton says on page 70, "The sewage of 800 persons per acre is too much, and is an utterly unknown amount, where purification by irrigation is desired." Will you kindly give the Committee your opinion upon that statement? The Rivers Pollution Committee in England, after taking a great deal of evidence, fixed the maximum at 2,000 per acre, I believe.
237. Was that where the sewage was purified by irrigation? Yes; or by other methods, such as downward filtration.
238. Mr. Hickson makes that statement in his report, but I want to know if you can tell the Committee of any place where purification by irrigation is carried on and more than 800 persons to the acre are served? I have no evidence of a population so dense as that being served, except in the instance of the Botany farm where the population is greater. At Christchurch an area of 42 acres receives a drainage of 30,000 people, which is about 720 to the acre.
239. Then, excepting Botany, which takes the drainage of 1,200 or 1,400 people per acre, Mr. Stayton's statement, so far as you know, is correct? Yes; I do not know of any place where there are quite so many as 800.
240. Then the circumstances are more favourable on Webb's grant than at Parramatta. At Botany they have not had to build up a filter-bed; they have pure sand there to an unlimited depth? They cannot go to a greater depth than the high-water mark, but I am not certain how high the surface of the land is above high-water mark. I do not think it is more than 5 or 6 feet.
241. When you visited Webb's grant, was the weather wet, or was it fine? It was fine, but it had been wet the previous week.
242. Did you elicit any information as to the effect of wet weather upon the farm? All I remember eliciting was that rainfall is admitted to the Botany sewers, and that when a storm comes they let the whole discharge into the river.
243. Is that not rather a primitive way of disposing of the sewage? Well, where you admit rainfall, and provide storm over-flows, it comes to the same thing. In London, and in most of the English towns, they admit a great deal of rain-water, and sometimes they have to let it overflow. Of course it ruins the sewage for farm purposes.
244. Does it not make the river rather objectionable? Yes; but after a heavy storm a river is charged with mud and silt in greatly enlarged volumes.
245. But not with excreta and all the filth of the town? That makes very little difference. The dirt off the roads in a big storm is, perhaps, quite as bad as sewage highly diluted with rain-water.

TUESDAY, 13 FEBRUARY, 1894.

Present:—

JACOB GARRARD, Esq. (CHAIRMAN).

The Hon. WILLIAM HENRY SUTTOR.

The Hon. JAMES HOSKINS.

The Hon. FREDERICK THOMAS HUMPHERT.

The Hon. JOHN DAVIES, C.M.G.

The Hon. WILLIAM JOSEPH TRICKETT.

THOMAS THOMSON EWING, Esq.

WILLIAM CHANDOS WALL, Esq.

WILLIAM McCOURT, Esq.

JOHN CASH NEILD, Esq.

EDWARD WILLIAM O'SULLIVAN, Esq.

CHARLES COLLINS, Esq.

HENRY DAWSON, Esq.

The Committee further considered the proposed Sewerage Works for Parramatta.

Charles Napier Bell, Esq., M.I.C.E., sworn, and further examined:—

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246. *Mr. Trickett.*] You stated last Thursday that you carried out the sewerage of Christchurch;—when was that work completed? It was commenced towards the end of 1876, and was finished about the end of 1882. I think 1882 was the year I left it.
247. And when was the Napier sewerage scheme carried out? In 1879, I think.
248. Have you had any practical experience in sanitation or sewerage works since that time? I have designed, investigated, and reported upon several sewerage works.
249. Where? In England? No; in New Zealand, at Christchurch, Napier, Westport, and Wellington. I was appointed consulting engineer for the corporation of Wellington in 1880 or 1881, to revise several schemes of drainage put before it.
250. Was your scheme of drainage carried out in Wellington? I did not propound any scheme. I had to look over a number of schemes proposed to the Council, which I did, and had them all rejected.
251. How long is it since you were in England? A long time. I left England to come out on the Public Works of New Zealand in 1871.
252. And you have not been there since? No.
253. In the report of the Board of which you were a member, upon the Parramatta Sewerage Scheme, you advocate the keeping out of all rain-waters from the sewers? Yes; especially as the sewage is to be pumped.
254. You say, "We would also advise the diversion of the rainfall." That means its total exclusion? The entire exclusion of the rain-water.
255. And you still think that it will be best to keep the rain-water out? I think so. I think that is the best policy in all schemes where the sewage has to be pumped. If not in every scheme.
256. Have you carefully considered the gradients which prevail at Parramatta? I have carefully looked over the gradients at Parramatta proposed for larger sewers, and I would recommend that they be not touched, even though the sewers are diminished in size.
257. You think those gradients amply sufficient for smaller sewers? Yes; for smaller sewers, because I have put in great lengths of similar pipes upon similar gradients, and after working ten years in Christchurch they are perfectly clean now.

258. Without any rain-water going into them? No rain-water is admitted; I may explain, however, that in certain places some of the subsoil water is purposely admitted in order to dry the ground, and some artesian water is admitted on payment of a fee. The people in Christchurch use artesian water to drive rams, and the discharge is permitted to go into the sewers on payment of a certain sum per annum. The artesian rams are so low that they cannot discharge at the surface, although they can discharge into the sewers. C. N. Bell, Esq., M.I.C.E. 13 Feb., 1894.
259. There would be no provision of that kind at Parramatta? That is not a provision.
260. But it is a means of flushing the sewers? It is a means of diluting the sewage, which is rather a harm than a benefit.
261. Then, am I to infer that the more solid the sewage the more easily it flows? Of course if the sewage is as thick as treacle it will not flow easily, but it never is so thick as that.
262. Can you explain to the Committee why it is a disadvantage to admit rain-water? Rain-water going into a sewer is a great disadvantage in the first place, because it increases the volume to be pumped; in the second place because it increases the size of the sewers which would be necessary to carry it, and in the third place because the less the quantity of sewage you have to deal with on the farm the better. One of the reasons why farmers object to taking sewage on their land is that it is so drenched with rain, and so thinned down, that it spoils their crops.
263. I am not seeking information on that part of the question,—I mean with regard to the flow of the sewage through the pipes. Is not a certain quantity of water necessary in order to cause the sewage to flow? The liquid condition of sewage is always sufficient. Sewage never goes beyond a certain degree of thickness, and within the limits to which sewage from houses is usually diluted, its liquidity does not affect the gradient.
264. Have you heard of any recent failure of the separate system in England? No; I have heard of no such failure. All I have heard is that several systems claiming to be better than the International system have now come forward.
265. Have you heard that the separate system has proved a great failure in Dorking, Surrey? No, I do not know anything about that.
266. Have you not heard that the pipes there have all had to be taken up, and that it has been necessary to resort to what is called the partially-separate system, because of the prevalence of fever? I do not see how that can be from the cause attributed. The sewers are most troublesome in the driest weather, and at such times they derive no assistance from the rainfall.
267. If it is a fact that the separate system in Dorking has had to be wholly reorganised, because of the collection of drainage in the pipes, and the escape of gases, should we not be very cautious in adopting a similar system at Parramatta? If that were the case, but I do not believe that that is the cause of it. They must either have been careless in flushing, or they must have been careless in looking after the sewers, which very often require looking after in some of these towns.
268. What care should they take? The sewers might have irregular gradients, or they might be obstructed with weeds. Very often roots of trees get in. Then too, they might have been carelessly or infrequently flushed, in which case they would become a serious nuisance. These evil consequences would occur, however, even if the rain-water were admitted, because if there is a three months drought, or rain falls but slightly during that period, all sewers are under the conditions of the totally separate system.
269. Is it not a matter of every day occurrence that the heavy rains which fall in Sydney and the suburbs are of great advantage in flushing out the sewers? Yes; because no other arrangements have been made in Sydney for flushing. If you have the separate system, you must flush the sewers systematically with the aid of your water supply.
270. You say that trouble may have arisen in Dorking, because of irregular grades in the pipe line;—will there not be irregular grades in the line we are now considering? I do not mean irregular grades of that kind. I referred to the irregular laying of the pipes, whereby the grades are interrupted by bumps or depressions. That often happens with carelessly-laid sewers, and in Christchurch we had some trouble through some of the pipes having been laid below the gradient line, and others above it, the sewage accumulating in ponds in such places. We had to adjust the pipes in several places.
271. In the report of the Board, you say that by the adoption of the separate system the cost of the Parramatta scheme would be reduced to 25 per cent.? Yes.
272. If the cost were reduced to that extent, I suppose a really new scheme, one totally different from that now before us, would have to be carried out? There would be no difference, except that the size of the pipes would be reduced.
273. That is a very material difference? But the work has not been commenced yet, so that the reduction in size would only have to be done on the plans, and would involve no loss of any kind.
274. The pipe lines would be exactly the same? Everything would be the same except the size of the pipes.
275. What difference in size would you advocate? With sewage only, the discharge would be about 833 gallons per minute; but if an inch of rain upon the roof surface, as contemplated in Mr. Hickson's report, were admitted, the discharge would be 1,500 gallons per minute, or very nearly twice as much; and the size of the sewers, although it would not require to be doubled, would have to be increased considerably to accommodate the increased volume of the sewage.
276. Can you tell us what sized pipes would be required for the separate system? There are a great many pipes of all sizes, every one of which would be reduced; but I asked the officers of the Department to get out the requisite sizes under the two conditions in question.
277. That is for the separate and partially separate systems? Yes; but they only gave me the results in money.
278. But could not you, as an engineer, give us the information? It is a very difficult thing to do without calculation and reference to the necessary tables; but in general I might say that a 12-inch pipe would be reduced to about 9 inches, and a 4-foot by 2-foot main sewer would be reduced to a 2-foot diameter main sewer.
279. What is the size of the main pipe towards the outlet? The largest sewer in the system is 4 feet by 2 feet 8 inches.
280. That is just before you come to the pumping-station? Yes, that is the largest sewer.
281. Could it be reduced by a foot? It would be reduced about 2 feet 6 inches, or 2 feet diameter. I could not tell you exactly off-hand what the reduction would be, but the pipes would be considerably reduced in size. 282.

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282. You are prepared to stake your professional reputation on the statement that a 2-foot pipe would be sufficient to carry off the sewage, if the separate system were adopted? Certainly. The number of the inhabitants being reckoned, and the quantity of water they receive given, that would be the size of the pipe and no other, because nothing else would go into it. It is only when you admit rain-water that the size of a pipe becomes ambiguous. Under Mr. Hickson's proposal 1 inch of rain on 200 square feet for every individual is provided for. In a family of five persons, that means the roof of a house 33 feet by 30 feet, and taken generally, the whole roof surface of the town. But if a town is fairly built over, its roof surface is about half of its area, excluding streets, parks, and open places, so that 1 inch of rain over half the area of the town is admitted to the sewers. But we have no means of keeping the quantity down to 1 inch. If a fall of 4 inches or 2½ inches occurred all the water would go into the sewers, and would have to overflow at places specially provided. When the sewage came to the pumps, it would be again overflowed until it was reduced to 1 inch over the whole roof area; but even then it would be drenched with water, and the effect would be that in rainy weather the farm would have to take, not only the rain falling upon it, together with the sewage, but five times as much from the roof area of the town.
283. *Chairman.* Besides throwing more work upon the pumps? No; no more work would have to be done by the pumps, because the sewage would be allowed to overflow until it was brought down to the specified quantity. Everything coming down in a heavy fall of rain would overflow into the river.
284. *Mr. Trickett.* That is what happens at Botany? Yes; I think, if I am not mistaken, when a heavy fall of rain occurs there, they let everything go into the river.
285. How often would you propose to flush the sewers under the separate system? In Christchurch, where the sewers are very flat, they are flushed, I think, three times a week.
286. Are they flatter than the proposed sewers will be? Yes; they are generally flatter than those. Christchurch is the flattest town I have ever heard of.
287. In addition to the flushing they have artesian water occasionally flowing through them? Many of the sewers take artesian and sub-soil waters; but a great many get none at all. All, however, are regularly flushed. When the sewers were completed they began to be a nuisance by creating foul smells at the man-holes, so I immediately put in flushing-tanks at the top ends of all of them, and arranged, by means of artesian wells, for keeping the tanks always full. Three times a week a man goes round, hauls up a chain, and discharges the contents of these tanks into the sewers. The water is caught by flushing-doors, and passed on from sewer to sewer, until the whole system is washed out.
288. Do you propose to adopt that system here? With the separate system you must flush the sewers, either automatically or by sending a man round. When a sewer is flushed automatically there is generally a tank which receives water from the water supply until it becomes full, when it overturns and discharges its contents into the pipes, and then falls back again. There are several automatic flushing systems.
289. Would the flushing add to the expense of the system? No; there is not much expense connected with it. All the sewers in the scheme are provided with man-holes.
290. Where there is a water supply, flushing is a simple and inexpensive matter? Yes. Without a water supply you could not attempt to carry out the separate system; but Parramatta has a water supply which is amply sufficient for the purpose of flushing.
291. Notwithstanding the fact that Mr. Hickson recommends the partially separate system, you adhere to the separate system? I do.
292. And you are convinced that it would be a success? Yes. With your permission, I will read a few remarks made by the Hon. W. F. Taylor, M.D., M.L.C., at a meeting of the Royal Society in, I think, 1892. He mentioned the system of sewerage introduced at Memphis, on the Mississippi, U.S.A., "as the best illustration of the separate system, differing from ordinary usage in the following particulars—storm and surface water rigorously excluded from the sewers, pipes to be so small as to be never less than half-full of sewage, automatic flushing tanks of 120 to 150 gallons at top end of each line of pipes. Has been in operation for four years with perfect satisfaction. Memphis is a town of 50,000 people. The drainage is for foul water and sewage only; drains are 6 feet deep; average house pipes are 4 inches diameter, and sewers are 8, 10, 12 and 15 inches diameter. By adopting the separate system, and excluding the rain, a saving had been effected of £280,000 in the drainage of Memphis."
293. *Mr. McCourt.* Before or after your appointment to the Board, did you consult Mr. Hickson or any of his officers on the scheme? Mr. Hickson submitted all his reports to us.
294. Did you consult him or any officer of his Department personally on the subject? Consult them—in what way?
295. Did you get information from them by questioning them in any way? I got a great deal of information from them as to the cost of their system, and as to the reduction of cost which would follow a reduction in the size of the pipes, and the annual cost of running the system, and a lot of information of that kind.
296. Did you get any information from them as to the efficiency of this scheme? They have no information to give as to the efficiency, because it has not yet been carried out.
297. Had you any conversation with Mr. Hickson before you were appointed to the Board—how did you come to be appointed to the Board? Mr. Hickson told me that he would like to get my evidence on a subject that was in dispute about the sewerage of Parramatta.
298. Did you go to Mr. Hickson, or did Mr. Hickson look you up? I did not go to him. He told me that he would like to get my evidence on the subject. Then I went away to Melbourne.
299. Did you talk the matter over when he told you this? No doubt. I would talk it over with any person with whom I could interchange ideas on the subject.
300. Did you talk the matter over with Mr. Stayton? No; I never saw Mr. Stayton. I should have done so if I had known him.
301. Did you read his evidence? Yes.
302. Did you not think that his evidence on the subject was rather important? I did not agree with his evidence.
303. Therefore, you did not think it worth while to examine him, or to talk with him on the subject? I do not know Mr. Stayton. I do not think he was here when I was here first.
304. As a member of the Board, were you not empowered to take evidence if you thought it necessary? We gave our reasons for not taking evidence.
305. But were you not empowered to take evidence? Yes; we were.

306. You did not think it worth while to examine Mr. Stayton? No; because there was ample evidence in the documents put before us. Everything that could be said had been said.

307. Though you disagreed with Mr. Stayton, you did not think it necessary to question him? I presume that, whether questioned or not, he would not alter what he had said in his reports.

308. You did not think it necessary to question him? We did not think it necessary to go outside the documents furnished to us.

309. Yet you consulted Mr. Hickson? I talked with him as a friend, because I have known him a long time; but I did not consult anyone but myself.

310. But you talked the matter over with him? Yes.

311. *Mr. Wall.*] Have you calculated the quantity of filling in which the sewage farm will require? No.

312. Have you made an estimate, apart from the documents, as to the cost of the whole work? I took the cost as given to me by the Department. I had no means of working it out myself. The Department possess all the plans, and the necessary knowledge of prices.

313. Would not the sewage be more likely to create a nuisance if discharged in a crude way upon the farm, than if an intermediate system were adopted? No; because the land cleanses and purifies the sewage. The stronger the sewage the more fitted it is for the cultivation of the farm.

314. Have you any knowledge of the International system of disposing of sewage? Only from reading about it.

315. You have made some reference to the ferozone system;—have you considered the advisability of having an intermediate station between Parramatta and the sewage farm for the purpose of purifying the sewage? Before putting it on the land?

316. Yes? I consider that it would lead to entirely unnecessary expense. There are better means of purifying it than that.

317. What way would you suggest? There is one arrangement which is not required for purifying the sewage, but simply for removing the sludge from the land, and that is the employment of settling tanks. In Christchurch the sewage is passed through settling tanks, and some portion of it is settled out before it is put on to the land. That is not done at Botany, and it is a question whether it is worth while to do it at all. I did it in New Zealand, so that the surface of grass land might not be encrusted with the scum of dry sludge which is often found on these farms, causing the land to require more frequent ploughing than is required, if you separate most of the sludge out first.

318. You have seen Mr. Hickson's reply to the report of the Parliamentary Standing Committee on Public Works? Yes; I have read it.

319. In the third paragraph of that document he says:—"With reference to the question of the relative advantages of chemical precipitation and land filtration, I can, without hesitation, say that at the present time no sanitary engineer of eminence in Europe or America will be found who will give unqualified preference to the former";—Does not that infer that the system of filtration or precipitation is looked upon favourably by most of the eminent engineers of America and Europe? From my experience, gathered by reading during many years past of all that has appeared in works on sewage, I have come to the conclusion that most of the eminent authorities of Europe would only resort to precipitation works where land was not to be had at all, or where it was very dear. Wherever land can be had, they unanimously recommend the farm system.

320. The only reason for employing the precipitation system is the insufficiency of land for the disposal of the sewage? I believe that is the only reason. There is no advantage in adopting the precipitation system if land can be obtained at all reasonably.

321. You think the area of land reserved at Parramatta will be sufficient to satisfactorily dispose of the whole of the sewage there? In Santo Crimp's work on sewage, that very eminent English authority speaks as to the quantity of land required for dealing with certain quantities of sewage, and also the quality of the land and the depth of drainage. In considering the Parramatta scheme, I have put the volume of sewage per day at 800,000 gallons. Now Santo Crimp says that 22 acres of land would be sufficient for dealing with that quantity of sewage if the land were free and sandy, and available to the depth of 4 feet. If it were available for a depth of 5 feet he says that 16 acres would be sufficient. However, taking the mean, because it is just a question whether you have 4 or 5 feet of subsoil, free from water in the proposed embankment, we arrive at 18 acres, which according to Santo Crimp would be sufficient.

322. Did I understand you to say in a previous part of your examination that the disposal of sewage was brought about more by oxidation than by filtration? The sewage is filtered and micro-organisms consume its impurities. These micro-organisms grow with immense vitality where the impurities are supplied to them.

323. But I think you said that their operations did not extend more than 6 inches below the surface? They extend as far as the air penetrates. If the sewage is put on intermittently, the air will go 2, 3, and 4 feet below the surface; while, if it is continually being supplied in great quantities, the air cannot get down at all, and the land consequently fails to purify the sewage.

324. *Mr. Neild.*] In the estimate which you gave the other day you put down £84 per acre for the preparation of the 22 acres of clayey ground;—that is a little more than double the estimate of the Department? The departmental estimate applies to the embankment of which there are 44 acres.

325. Is there no departmental estimate of the cost of preparing the clayey ground? I think it must all have been included in the estimate of £40 an acre. You will observe that the report of Messrs. Wardell, Chamier, and myself, states that the 40 acres to be reclaimed will be sufficient; therefore, it is not necessary to take this other land into consideration.

326. Not immediately necessary? I hold that it never will be necessary.

327. If it will never be necessary to use more than 40 acres of land, why have you taken into consideration the desirability of extending the farm to the extent of more than 100 acres? I do not think it will ever be necessary to take in the 22 acres, which will cost £84 an acre to prepare, because double that area could be made by means of an additional embankment.

328. If, at some future time, the 42 acres of embankment are found to be insufficient, you would recommend the reclamation of more land rather than the preparation of the 22 acres of clay land in the manner indicated by you? Yes, that would be preferable, if you could get the work done under the same conditions.

329. You practically suggest that the Committee should put the 22 acres out of consideration altogether, and deal only with the 42 acres? I do not think you would require to touch the 22 acres. It would be preferable to reclaim 22 acres of low land and build it up with sand.

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330. In your estimates of improving the clayey land, why do you propose to use 2-inch tiled drain-pipes instead of the 4 inch diameter agricultural pipes suggested by the Department? It is only a question of how far apart the pipes are to be placed. In my estimate I assume that the pipes will be very close together. I provide for the trenching of the clay land to a depth of 3 feet, the trenches to be filled up with sand, the 2-inch pipes having been placed at the bottom of them.
331. Instead of using 4-inch drain-pipes you propose to place 2-inch tiled drain-pipes at the bottom of the drains, putting ti-tree fascine bundles on the top of them, and sand upon the ti-tree? Yes; that provides for the thorough drainage of the land.
332. How far apart do you propose to put the drains? I have not kept my notes, and it would be a laborious thing to take it out by the cubic yard. I think, however, that they would be half a chain apart.
333. A little lower down you provide for ploughing the ground 18 inches deep, at a cost of £1 8s. an acre;—do you think it would be possible to do the work for that? Yes; they are doing it for less than £1 8s. an acre at Werribee, near Melbourne. I received a note from the engineer, Mr. Thwaites, telling me what the work cost there.
334. At £84 an acre the cost of preparing 22 acres would be £1,848, which would be very much in excess of the departmental estimate, taking the cost all round at £40 an acre? I do not know what they allowed for the preparation of the embanked land. That work would be done very easily. I presume that the £40 an acre is for the work all round.
335. You ascertained the departmental estimate for part of the work, not for the whole? They have taken an estimate for the whole.
336. But there must be a vast difference between the cost of preparing sandy soil and the cost of preparing this heavy clay land? I think it would be more than double.
337. Are you acquainted with Santo Crimp's work on the "Disposal of Sewage?" Yes; I have read it pretty well through.
338. In a table which bears the signature of the engineer, who is the borough surveyor for the Leicester corporation, this entry appears: "The remaining one-third being marly, a portion of it being stiff clay, and practically useless;"—are not those pretty nearly the conditions of the land at Parramatta? Pardon me, it is not stiff clay.
339. How do you describe it? As far as I remember, there are 10 inches of grayish black soil *humus* on top. Below that for 2 feet there is a weathered earthy clay; then you come to stiff ferruginous clay.
340. Is there not a considerable amount of pipe-clay on the soil? Three feet below the surface there is.
241. Does not your estimate of the cost of preparation show that the soil must be very stiff clay, and, to use the words I have just quoted, practically useless? It does not show that it is stiff clay, or that it is useless when prepared at the cost stated.
342. But you think it would be cheaper and more efficacious for the Government to reclaim land, filling it up with sand, than to utilise the 22 acres? I think it would be better to reclaim land, but I do not know that it would be cheaper. That would depend upon whether the Harbours and Rivers Department would do the work. If the Sewerage Department had to reclaim the land it would be very much dearer.
343. I think you stated that the land at the Christchurch sewage farm is sandy? Sand above, and sandy loam below.
344. I do not think you have told the Committee where the effluent discharges? It discharges into the Heathcote lagoon, which has an area of about 1,200 acres.
345. Is the water fresh or salt? It is salt.
346. Has the sea access to it? Yes; small ships enter the lagoon.
347. Does the water ever become impure? It is changed every tide. The tide rises from 6 to 8 feet.
348. Do you think the narrow and shallow channel of the Parramatta River opposite the site of the proposed farm is under no risk of being contaminated by the soakage from the sewage? My own personal experience, and the evidence which I have obtained by reading, must be of no earthly value if there is any risk of contamination. The supposition is that the effluent of the sewage farm is sufficiently pure to be allowed into the river.
349. Have you estimated the annual cost of the proposed farm to the ratepayers over and above its earnings? I got a statement of the cost of the system made out. I make out the annual cost of the farm to be £1,292, and the interest on the capital expended £1,755.
350. Does that include pumping? The total £3,047 includes everything. It is made up of the following items:—

Coal, 158 tons at 20s.	...	...	...	...	...	...	...	...	£158	0	0
Wages, engine driver and fireman	...	...	...	...	...	...	...	...	156	0	0
Oil and waste...	...	...	...	...	...	...	...	...	20	0	0
Repairs and renewals	...	...	...	...	...	...	...	...	150	0	0
Expenses of the farm	...	...	...	...	...	...	...	...	500	0	0
2 Flushers	...	...	...	...	...	...	...	...	208	0	0
Contingencies	...	...	...	...	...	...	...	...	100	0	0
Total	...	...	...	...	...	...	...	...	£1,292	0	0

351. You make no allowance for the cost of water for flushing purposes? No; there is nothing down for the cost of water.
352. Does this estimate apply to the 42 acres or to the 66 acres? It is meant to apply to the 42 acres.
353. You put the 22 acres of clay out of consideration? I put it on one side as probably not required.
354. How is it that you estimate the working expenses of the sewage system for Parramatta, where the population is only 12,000, at £1,292, when, according to the evidence you gave last day, the cost of a similar system for Christchurch, with a population of 30,000, is only £700 or £800 a year? I do not know, unless it be that the cost of the farm at Parramatta is too high. The Christchurch farm costs very little. In referring to the Christchurch scheme, however, I was only speaking from memory.
355. *Chairman.*] I suppose you have not put the produce of the Christchurch farm as a set-off against the actual cost? I am under the impression that that system costs between £700 and £800 a year, but I have no documentary evidence to prove it at the present time.
356. *Mr. Neild.*] I presume that at Christchurch no land had to be built up? No; but we had to shovel down the sand-hills with horse shovels.

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357. That would be cheaper? Much cheaper.
358. You had not to pay £16,000 for the land? We paid nothing for the land.
359. You would strongly advocate sand as superior to every other material for filtration purposes? Yes.
360. At page 108 of his work on the "Disposal of Sewage," Mr. Santo Crimp says: "In the report of the Rivers Pollution Commissioners, 1870, it is stated that 'whilst one cubic yard of sand or Hambrook soil cannot continuously and satisfactorily purify more than 4.4 gallons of London sewerage for twenty-four hours, one cubic yard of Beddington soil can cleanse 7.6 gallons, and one cubic yard of Dursley soil no less than 9.9 gallons in twenty-four hours.'" According to that statement it would appear that Dursley soil is capable of absorbing and purifying more than twice the quantity of sewage that sand can deal with;—have you any information as to what the Dursley soil is? You will probably find that there is a gradation there from fine to coarse sand, with fine gravel and gravel below. When that happens the facilities for draining are wonderfully increased.
361. Let me draw your attention to the statement of Dr. Lissaur, who says, "Dry loamy soil absorbs more than peaty soil, and gives up less, whilst dry sandy soil, on the contrary, absorbs less and gives up more." That does not support the contention that sand is the best filter? Probably neither of us understands what he means by "absorbing." Sand cannot absorb anything in its texture, because it is composed of crystals or quartz, whereas soil or earth will absorb through and through.
362. Under the heading "Absorptive power of the soil," Dr. Lissaur gives the results of fifty-one experiments? If you take a cubic foot of dry earth, and pour a gallon of water upon it, it will probably retain all the water like a sponge, having absorbed it; but if you do the same thing with a cubic foot of sand the whole of the water will drain away, and in ten minutes or so the sand will be perfectly dry. The sand strains and purifies the water, while the soil absorbs and upholds it.
363. On that account you consider that sand is best for sewage farms? I agree with the authorities who have written on the subject, and who say that sand is by far the best. I have only had experience of sand.
364. Do you think that drains should be laid down in the 42 acres, or will there be sufficient drainage without them? I think the drains should be put in to divide the land, and let all the water run into the river.
365. What kind of drains would you recommend—anything like those you recommend for the clayey land? I would put in 4-inch drains, leading in the direction of the Duck River, crossed, if necessary, by 2-inch tiled drains.
366. At what distance apart? In sand, I suppose, you would put them one chain apart, but I would not speak positively on that subject.
367. Do you think that £40 per acre would cover the cost of these drains? I think so. The cost would not come to a very large amount.
368. *Mr. Dawson.*] Are the figures which you have given us to-day your own, or were they supplied to you by the Department? I requested the Department to get out estimates of the cost of the two systems, the manufacturing International system, and the farm system.
369. Then you cannot personally vouch for the correctness of the figures? There are no better authorities than the officers of the Department for such estimates.
370. The estimates may be absolutely correct, but you cannot vouch for their correctness? No.
371. *Mr. Hoskins.*] Were you in charge of the sewage farm at Christchurch? No; I was in charge of the construction of the sewers. I laid out the scheme.
372. For how long did you reside near the sewage farm after its completion;—could you observe its working? I have lived in or about Christchurch from the day the scheme was completed until now, but I severed my connection with the scheme directly it was completed.
373. The farm has given satisfaction to those entrusted with its management? Great satisfaction.
374. The temperature at Christchurch in summer is much higher than the temperature of Sydney or Australia generally? There are many days in summer when the heat in Christchurch is as great or greater than it is here, but that does not often occur.
375. On the average, the summer temperature is not so high there as it is here? No; it is lower.
376. Therefore, the exhalation from the sewage farm (if any) would be less intense than it would be in a place such as Sydney, where the heat was greater? If the exhalation is due to the sun's heat, and of that I am not sure,—of course, the hotter the day the greater the exhalation.
377. *Mr. Ewing.*] With regard to the danger of sewage farms, do you think it is greater in a warm climate than in a cold climate;—have you any information on the subject? I do not see why it should be greater in a warm climate, seeing that the sewage is supposed to be purified by the growth of vegetation, which is stronger in a warm country than in a cold country. In countries where frosts are very prevalent, and the ground is frozen for part of the year, sewage farms are exceedingly difficult to manage; but in a country such as this, where there is practically no frost, and the vegetation is not even checked in winter, there is no difficulty. Here there is as great a growth in winter almost as in summer.
378. Vegetation is the great purifying medium? Yes.
379. Would you have a very luxuriant growth upon sand? I never saw red clover, rye grass, turnips, and mangolds grow so luxuriantly elsewhere as they do upon the Christchurch sewage farm.
380. And you think that in a warm climate, such a farm would be more successful than in a cold climate? Yes.

George Chamier, Esq., M.I.C.E., sworn, and examined:—

381. *Chairman.*] What is your profession? I am a civil engineer.
382. Are you a full member of the Institute of Civil Engineers? Yes.
383. Will you kindly give the Committee a brief outline of your professional history;—will you tell us where you served your articles and so on? I was articled to Mr. W. T. Doyne, a distinguished member of the Institution, and was first engaged on railway construction in Tasmania. I was engaged on the first railway constructed there. Afterwards I served in the Victorian Water Supply Department for 4 years, and was then connected as contractor's engineer with several important railways in Victoria and South Australia. I afterwards practised in Adelaide for 7 years.
384. Were you in the Government service during any of the time that you were engaged in railway construction in South Australia and Victoria? No; I was engaged either in private practice or as contractor's

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contractor's engineer. I have given the subject of sanitary engineering a great deal of consideration for many years past, and when in Adelaide I was appointed by the Government a member of the Commission to investigate and decide as to the best site for a sewage farm there. I afterwards had opportunities of seeing the whole of the Adelaide sewerage works carried out, so that I am well acquainted with the scheme.

385. The Adelaide sewerage scheme is the only work of the kind with which you have been directly connected? Yes.

386. How long have you been practising your profession in Sydney? Three and a half years.

387. You, in conjunction with Messrs. Napier Bell, and Wardell, were commissioned by the Government to report upon the proposed Parramatta sewerage scheme? Yes.

388. The finding of the Board as set forth in your report dated the 28th July, 1893, was that the separate system is preferable to the partially separate system? Yes.

389. Were the members of the Board unanimous in regard to the decisions stated in the report? Perfectly. On this point we had no difference of opinion whatever.

390. *Mr. Humphery.*] Did you make any estimate of the cost of the work, or did you take the figures supplied to you by the Department? We took the figures supplied to us by the Department, and we checked them in a general way by our knowledge of the cost of similar works. We did not go minutely into the cost of any particular item.

391. Did you and Mr. Bell compare notes before preparing the report, so as to agree upon all the main features of the system? We did.

392. Had you any differences at all with regard to the carrying out of the proposed scheme, or may the report be said to represent your ideas as well as Mr. Bell's? My opinion is that we have rather underestimated than over-estimated the saving that could be effected; but I am satisfied that in a general way the figures we gave are approximately correct. I did not go minutely into details, because that would have involved the taking out of quantities and a careful calculation, which we had neither time nor the opportunity to make. We simply had certain data supplied to us upon which we came to a general conclusion.

393. Have you ever been engaged on any sewerage works? Not professionally in designing them, except small works, but I was constantly on the works in Adelaide.

394. But you have never designed or carried out any sewerage scheme? No, though I have acted as consulting engineer for contractors who were carrying out different sewerage works.

395. Could you mention any sewerage farm concerning which you can give your own personal experience of the system carried out and the cost? I could give my experience of the Adelaide scheme, because I was employed by the Government to make an investigation into the site, and I saw the whole of the works from first to last. I was an intimate friend of Mr. Oswald Brown, and accompanied him frequently all over the ground, seeing as much as if I had been professionally engaged on the work.

396. Is this scheme identical with the Adelaide scheme? As regards the sewage farm it is.

397. What about the area in proportion to the population? Judging by the Adelaide standard the area is more than sufficient in proportion to the population.

398. Are the conditions in any way similar? The Parramatta scheme is rather the better of the two, because it has better drainage.

399. What about the nature of the soil? The soil at Parramatta is equally good. In Adelaide there is a light loamy soil, but I consider that the sandy material they have at Parramatta would answer quite as well.

400. Was it found necessary to raise the Adelaide farm by means of silt or sand? No; there was ample fall. The ground was sufficiently high to allow a good outfall.

401. Is the natural soil used? Yes; it was not altered in any way. It is a light loamy soil.

402. You know that it is proposed to put 5 feet or more of silt upon the land at Parramatta? Yes; I have seen the material that they propose to put on the land there.

403. Are you of opinion that it is suitable for the purpose for which it is intended? I think so. The published results of a great many experiments lately made in America go to prove that it is eminently suited for the purpose.

404. Silt? Silt next to sharp sand is the best soil for filtration purposes. River silt gave some of the best results in the experiments to which I refer.

405. Are you quite of opinion that there would be nothing offensive on the farm to justify an objection from an adjacent borough? Under proper management there would not be, but the farm would have to be carefully attended to.

406. Can you say what special management would be necessary? Well, the ground must be kept well open. In Adelaide, where the sewage has sometimes been turned upon portions of the farm which have not been properly looked after, and were overgrown with vegetables and grass, it would not percolate readily, and gave rise to offensive smells, but whenever due attention was given to the land the nuisance was removed.

407. Any neglect would be attended by a nuisance? Any neglect might cause a nuisance.

408. But with proper attention there need be no nuisance whatever from a sewage farm of the kind contemplated in this proposal? No; I have frequently been over the Adelaide farm in the hottest weather, and have noticed no smell. A stranger walking over the ground would not have known that it was a sewage farm.

409. *Mr. O'Sullivan.*] Have you read Mr. Stayton's objections to this proposal? I have read his report.

410. You think the suggestions made now would overcome those objections? I know of no objection which could be taken under proper management. All the nuisances which have arisen from these farms have been caused by some imperfection in the management, or in the preparation of the soil, or in the ventilation of the sewers, or something of that kind, and could be remedied with proper care.

411. I gather from your evidence that if these works are properly carried out and the farm attended to, it will not be objectionable, on account of the close proximity of population? I feel convinced, from what I have seen elsewhere, that it would not be objectionable.

412. In Adelaide is their population as close to the sewage farm as it would be at Granville and Parramatta? There are a good many houses within, I should think, a mile of the farm, but I should think that the centre of the city is about 3 miles distant.

413. *Mr. Davies.*] What is the area of the South Australian sewage farm? I could not tell you from memory, but a good deal more land was bought than is at present utilised.
414. Have you any idea as to how much land is used? The area is constantly varying, because they keep throwing open new fields as the requirements of the population increase. I think when I was there they had about 60 acres, more or less, under cultivation, but some of it was used simply as fields for pasturing cattle. Other portions of it were taken up with the growing of vegetables, and a small patch was used for what they call a filter-bed. When the bulk of the farm does not require any water, the sewage is turned on to the filtering-ground to be purified. A very small patch of ground will answer for the purpose of filtration.
415. As the beds become charged they increase the area? Yes; they keep on gradually opening up the ground. I could not tell you exactly how much has been opened up.
416. What quantity of sewage is daily delivered on the farm? Of that I can hardly speak from memory. It varies a good deal. I think that they reckoned it at about 30 to 40 gallons per head of the population. Every year they extend the system by taking in new suburbs. Since I left Adelaide they have connected fresh suburbs with the town, so that there is no fixture about the area of the farm.
417. One of the chief reasons for increasing the size of the farm is, that the land is so charged with sewage that it becomes necessary to open fresh land? The reason that they have extended the area under cultivation is that the sewage system has been extended.
418. Is it not necessary to make provision for opening up fresh ground by reason of the fact that the land under occupation becomes so charged with sewage? No. A certain area of land would meet the requirements of a certain population. Land does not get so charged with sewage as to make it necessary to break open fresh ground. The reason why they keep increasing the area at Adelaide is, that they are constantly extending the system by taking in new suburbs.
419. You cannot tell us the quantity of sewage delivered on to the farm, nor the area of the farm, although you had so much to do with it? I was a member of the Commission appointed to select the best site, but that is fifteen years ago.
420. What was the area first taken up? To the best of my memory, provision was made for 600 head of population to the acre, but I cannot tell you the precise acreage taken up, or what was looked forward to as the ultimate number of inhabitants. I think the area was within 200 acres.
421. And it has been vastly added to since? No, I do not think it has been added to. The area under cultivation has been increased. I am not aware that the Government have purchased any more land.
422. Do you tell the Committee that to cast crude sewage upon land, as it is proposed to do at Parramatta, is the best means of dealing with it? To my mind it is, undoubtedly, and I think nearly all the leading authorities on sanitary engineering agree on that point.
423. Can you cite any one such authority? Their number is legion. If you read the discussion that took place upon the Berlin sewerage scheme, at which many of the distinguished engineers of England were present, you will find that an almost unanimous opinion was expressed in favour of that system.
424. In favour of irrigating farms with sewage? Yes.
425. Under certain conditions? Yes—when the land is suitable and near to the town.
426. Do you regard the land at Parramatta as suitable? I think that it is very suitable. It is not far from the town, and it is remarkably well drained. The site is not built over or surrounded with homesteads.
427. Are you of opinion that there would be no disagreeable smell from the sewage if treated in the way proposed? Not under proper management; but any neglect of ordinary precautions would, undoubtedly, create a nuisance. I speak from my experience at the Adelaide farm, where, on certain occasions, very bad smells were produced.
428. Do I understand you to say that the casting of crude sewage upon the soil will not create a nuisance to people residing within a reasonable distance? The sewage thrown upon the soil simply looks like dirty water.
429. But what about the solid matter? There is very little solid matter. You could hardly distinguish the sewage from slightly discoloured water.
430. What becomes of the sludge and faecal matter? It nearly all becomes diluted. I have stood over the channel which carries the sewage of Adelaide, and you could simply describe it as slightly discoloured water. Occasionally there was a mawkish effluvium arising from it, but it was not nearly so dirty as ordinary gutter-water.
431. I would like to know how the solid matter becomes so diluted;—does it undergo an extraordinary change when passing through the conduit? The solid matter dissolves, and the bulk of water in comparison with the solids is so great that they do very little more than discolour it.
432. But you recommend a separate system? Yes; that is, the system in use in Adelaide. There we sometimes get four or five months without rain, so that it would have to depend solely upon the water supply.
433. If the separate system is adopted, there will be very little liquid matter passing through the sewers—it will nearly all be solid matter? No; it is reckoned that about 40 gallons of water per head of the population will go into the sewers, while the solids would represent a very small proportion of the total sewage.
434. Am I to understand that the solid matter, in its transit to the farm, becomes so diluted that it will pass on to the farm in liquid form without any treatment at all? Yes.
435. Have you been to the sewage farm at Botany? Yes.
436. Did you see the sewage matter distributed there? Yes.
437. Was it in liquid form? It was very much the same as in Adelaide.
438. Was there not a great deal of solid matter? Very little. When I was there the sewage was not offensive; it was only slightly discoloured.
439. You did not see solid matter spread upon the beds there? No, I did not, except a small quantity of sludge for distributing over the farm.
440. Did you not see solid matter in the shed where the sewage discharges itself into the conduit before going on to the farm? There was a little sludge, also a lot of paper and a few dead cats and things like those which occasionally come down the sewers. There is very little solid matter compared with the volume of fluid.
441. You say that the same treatment is in vogue in Adelaide? Yes.
442. When did you see the Adelaide sewage farm last? Between four and five years ago.
443. Are you aware that a great number of complaints have been made against the treatment of sewage there? Yes, I have heard the complaints.

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444. Do you know that at the present time a great many complaints are made by citizens and people residing within easy distance of the farm? A considerable number of complaints were made when I was there, and I had occasion to visit the farm at the time, but I always found that the nuisance arose from want of attention to certain details. When these details were attended to the nuisance was abated.

445. What was the cause of the nuisance? Water was allowed to lie in stagnant pools upon ground which had not been prepared to receive it. I have seen water lying in pools upon parts of the farm which were overgrown with grass and vegetable matter, and festering in the sun, causing a very objectionable smell.

446. The ground becomes so charged with sewage matter that it will not take more? It is not so much that as that the surface of the ground had not been prepared and broken up. The pores of the ground must be kept open, so to speak. If you neglect to take that precaution and allow the soil to be overgrown with vegetables, it will not absorb so readily.

447. Do they grow vegetables there? Yes; Mr. Brown used to supply his table liberally with them, and he maintained that they were the best in Adelaide. At one time there were a number of cows depastured there; but they got up a popular cry against them. They also got up a popular cry against the vegetables.

448. The authorities are not allowed to sell any? No; there has been a tendency on the part of the public to decry the farm, and to object to its being turned to account.

449. Have not local medical men denounced the selling of the milk of cattle grazing upon the farm? There was an outcry against such milk being sold, but it was never proved that any harm arose from the use of the milk.

450. Was it not alleged by some medical men that typhoid and other diseases had been traced to the consumption of the milk of cows depastured upon the farm? That statement was entirely disproved, and I never heard it brought forward by medical men of any consequence.

451. But there was a strong feeling against selling the milk? Yes; but it arose because of what was considered the undue competition which the farm exercised against private growers. The milkmen were in arms against it.

452. Do I understand that you regard the proposal before the Committee as the best means of treating the sewage of Parramatta? I do.

453. *Mr. Hoskins.*] You stated just now that the general consensus of opinion all over the world was that it is best to dispose of sewage by discharging it on to sewage farms;—are you aware that the sewage of London is emptied into the Thames below Barking? Yes; but there are difficulties in the way of dealing with the sewage of London upon a sewage farm.

454. What are they? There is no available land to be had at a price that could be paid for it, while the bulk of the sewage is so enormous that engineers are doubtful how they could apply such a system under the circumstances. The matter has been frequently discussed, and the engineers who carried out the sewerage of London admitted that they would have preferred to adopt the sewage farm system, if it had been practicable.

455. Who are the engineers who admitted that? I could not give you the names, but you will find them in the Institute papers. They have made the admission in the discussions that are reported there.

456. Are the Committee to understand that you have not had any experience in the laying out or management of sewage farms, but that your observations are the result of what you have seen in Adelaide? That is all.

457. Can you say if the Adelaide sewage farm is worked at a profit? When I was there last they told me that it paid expenses.

458. But I gather from what you said that complaints are frequently made about the effluvia arising from it? They were made when I was there.

459. Have you been to the site of the proposed farm at Parramatta? Yes.

460. The surface soil of the Adelaide farm is loamy? A light loamy soil.

461. Have you tested the character of the soil which you met with at Parramatta? I was shown the stuff that they propose to put on the land there, but I have not tested it for sewerage purposes. I know, however, that similar material has been found to work satisfactorily elsewhere.

462. What is the material? It is mostly what you would call river-silt.

463. The land at Parramatta? No; the stuff they propose to put on it.

464. I asked you had you tested the soil at Parramatta? We saw a number of shafts sunk into it at different places.

465. Did you not notice that close to the surface the soil was clayey, and almost impervious to water? No; on the higher ground there is a sub-stratum of clay about 18 inches below the surface.

466. To ensure a reasonable prospect of there being no complaints about the farm, would it not be necessary to put a quantity of other material upon the land? No, because the surface soil could be made to answer, except as regards its level. It wants raising.

467. But it would answer without anything being put upon it? It could be made to answer as far as the soil is concerned.

468. The soil being clay? The soil I saw was not clay. The clay occurs at some distance from the surface.

469. Is it not a fact that there is a good deal of clay and pipeclay upon the surface? Not upon the surface.

470. Close to the surface? There is enough soil on the top of the clay to meet the requirements of a sewage farm.

471. I gather from what you say that there is no necessity for putting 4 or 5 feet of sand upon the land? That is necessary in order to raise its level. It is too low at present.

472. But the land could be drained as it is? I think not. A great portion of it seems but slightly raised above high-water-mark.

473. But still it could be drained? It might be drained.

474. I take it, that in your opinion, it is unnecessary to put 4 or 5 feet of sand on to the land? A portion of the land is too low to answer well as it is. I am not positive as to the levels, but judging from appearances, it is very little above high-water-mark.

475. Am I to infer from your answers that you consider the land suitable to absorb sewage without anything

anything being put upon it? Yes; as far as the character of the soil goes. It is only a question of levels. G. Chamier,
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476. *Mr. Trickett.*] Is the Adelaide system the separate or the partially separate system? It was intended to be the separate system, but a small quantity of rain water has to be admitted. They admit the water from back yards, for instance, and a portion of the water from roofs. 13 Feb., 1894.

477. Are the drains flushed? Yes.

478. How often? I could not tell exactly. I suppose that depends upon the inspectors. They have regular times for flushing, because they cannot rely upon the rainfall at all.

479. Is there an arrangement for flushing it by means of tanks? They turn on water under high pressure from the main.

480. Do you know what the expenses of the system are per annum? I could not tell you precisely, but the system is considered to have answered very well, and has met all reasonable expectations.

481. Do you know of any place where a sewage farm has been established on land adjoining tidal waters? I could not mention any particular locality right off.

482. Is there such a place? Yes; there are numerous places of the kind, because the system has been adopted almost universally now, both in America and in Europe.

483. On the banks of rivers? Everywhere; but generally near the sea-side, it is found cheapest to take the sewage bodily out to sea. The cheapest process of all is to discharge it direct into the sea, but that can only be done where the circumstances are favourable.

484. Would not that be the best system here to have the sewage precipitated and then run into the river? No; I think not.

485. Why not? The precipitation system is an expensive one, and never answers as well as the soil, which does the same work more cheaply and more effectually than any artificial system that can be devised.

486. There would have to be a pumping station to raise the sewage;—would not that be one of the large items of expense in the precipitation system? Having pumped the sewage up you must dispose of it, and I maintain that the simplest and most effective way of purifying it is to run it on to the ground.

487. Do you know of any instance where a sewage farm has been, so to speak, built up by silt and stuff dredged from below salt water? I could not at this moment give any instance from memory.

488. You could not, I suppose, give any opinion as to the quality of the soil for the purpose of a sewage farm? I am confident that the soil is suitable. Extensive experiments have been made in Massachusetts, U.S.A., in which various soils were treated, and river silt was found to be one of those which gave the best results.

489. Can you call to mind any case in England or elsewhere where the separate system has been a failure recently? No, I have never seen it stated that the separate system has been a failure; on the contrary, at the present day, it is being adopted for the largest schemes. In Berlin, where they have the largest and most complete sewage farm in the world, they have adopted the separate system. According to an official return the total quantity of storm water admitted into the pipes only represents from 7 to 10 per cent. of the outflow, which is an extremely small proportion, showing that it is rigidly excluded.

490. What proportion is admitted here? One hundred per cent. or more. By admitting the storm-water you more than double the quantity of sewage, and you double it at the time when the ground is least capable of taking it.

491. Have you heard or read lately that the separate system has been a failure in Dorking, England? No, I have not; but, of course, I may say that there is no absolutely hard and fast rule in these cases. Every particular case must be dealt with on its own merits, and there may be cases where the partially separate system would be preferable. At Parramatta, however, where the ground is sloping, and ample provision exists for the escape of storm-water, there seems to be no advantage whatever in connecting the down pipes with the sewers, and thus taking off the roof-water.

492. You are of opinion that the ordinary domestic slops and other refuse will be sufficient to help the sewage along the pipes? Yes; it will represent about 40 gallons per head, which is quite enough for all practical purposes. That has been proved in other cases.

493. Did you not make inquiry as to the expense of the Adelaide system? I did at the time, but I have not got my notes with me, and I cannot speak from memory.

494. You do not remember the cost per annum in round figures? No; I remember that it was considered satisfactory by the engineers, and that it came up to expectations.

495. Have you made any calculation in regard to the reduction in size of the pipes at Parramatta, which would be brought about by the substitution of the separate system for the partially separate system? Under the circumstances, half the capacity would be ample.

496. *Mr. Ewing.*] What caused you to choose the site of the Adelaide farm? We had the option of two or three other places, but we choose the present site, because of the character of the soil.

497. It was the most suitable soil? Yes; the other soil was more peaty and swampy.

498. Is the present site much above the level of the sea? It is sufficiently raised to allow of good drainage.

499. How much do you think it is above the level of the sea? I should think over 40 feet.

500. Was it possible to drain the sewage of Adelaide into the Gulf of St. Vincent? Yes. One of the proposals of Mr. Clark, who was originally consulted on the subject, was to take the sewage out to sea, but he gave preference to the farm system.

501. Would it have been more expensive to take the sewage out to sea? No, I do not think it would; but taking all things into consideration, he gave the farm system the preference.

502. It was in accordance with Mr. Clark's report that you chose the sewage farm? Yes.

503. How far is it from Adelaide? I think it is generally reckoned to be about 3 miles.

504. How far is Adelaide in a direct line from the sea? In a straight line it is not more than 6 miles—barely that in places.

505. Although you could have got right away with the sewage at pretty well the same cost, you chose the sewage farm? Yes.

506. *Mr. Neild.*] The soil of the sewage farm at Adelaide is a stiff red loamy clay, is it not? I should call it a light loam. There is not much clay in it.

507. By going a little further you could obtain abundance of sandy soil? By going further you could obtain sandy soil. 508.

- G. Chamier, Esq., M.I.C.E.
13 Feb., 1894.
508. Do you think that sand such as that at the proposed farm at Parramatta is preferable to soil of a loamier character? If you want to get a good agricultural return from the farm, no doubt the richer the soil the better. You will not get such good returns from sand.
509. But merely for the purpose of dealing with the sewage? Then sandy soil is equal, if not preferable to, any other.
510. In selecting the Adelaide site, you chose it with a view to its agricultural production? Exactly.

WEDNESDAY, 14 FEBRUARY, 1894.

Present:—

JACOB GARRARD, Esq. (CHAIRMAN).

The Hon. WILLIAM HENRY SUTTOR.	WILLIAM CHANDOS WALL, Esq.
The Hon. JAMES HOSKINS.	WILLIAM McCOURT, Esq.
The Hon. FREDERICK THOMAS HUMPHRY.	JOHN CASH NEILD, Esq.
The Hon. JOHN DAVIES, C.M.G.	EDWARD WILLIAM O'SULLIVAN, Esq.
The Hon. WILLIAM JOSEPH TRICKETT.	CHARLES COLLINS, Esq.
THOMAS THOMSON EWING, Esq.	HENRY DAWSON, Esq.

The Committee further considered the proposed Sewerage Works for Parramatta.

William Wilkinson Wardell, Esq., M.I.C.E., sworn, and examined:—

- W. W. Wardell, Esq., M.I.C.E.
14 Feb., 1894.
511. *Chairman.*] You are a full member of the Institute of Engineers? Yes.
512. Will you give us a brief outline of your professional career;—will you tell us where you served your articles, and so on? It is a long time ago since I served my articles in London, where I practised as an architect and civil engineer. Then I came to Victoria, and shortly after my arrival I was appointed Inspector General of Public Works. That office I held for close upon twenty years, when a political crisis took place, and the services of a great many of us were dispensed with. That time was known generally throughout the colonies as Black Wednesday.
513. Did you practise in London after serving your articles? Yes, for some years.
514. In Victoria, I suppose, you were connected with the architectural branch of the Department of Public Works? No, I was the professional head of the Department, and had charge of all public works except railways and roads.
515. Did you design the public works as well as carry them out? Yes.
516. Since your connection with the Civil Service of Victoria terminated, you have been practising your profession in New South Wales? Yes.
517. Have you ever designed or carried out any sewerage work for any town or district? I have not carried out any large sewerage works, but I have had to undertake the sewerage of large public buildings.
518. You were chairman of the Board which was recently appointed by the Secretary for Public Works to inquire into the scheme for disposing of the sewerage of Parramatta? Yes.
519. Were the members of that Board unanimous in regard to the report which they furnished? Yes; but it contains one statement which I should like, with the permission of the Committee, to correct. It is stated that a saving of 25 per cent. would probably be effected by excluding the stormwater from the sewers. That is an error. It is needless to say how it arose; but we have corrected it, and we find that the saving would only be 16 per cent. The saving in the cost of working expenses we estimated at 25 per cent., and that we think on further consideration should stand at 20 per cent. The first mistake arose through the accidental omission of an item which came to between £4,000 and £5,000.
520. *Mr. O'Sullivan.*] The Board of which you were a member reported in favour of what is known as the separate mode of dealing with sewage? Yes; excluding stormwater from the sewage.
521. Did your Board thoroughly examine the objections lodged by Mr. Stayton against the proposed scheme? I never saw any objections of his against the proposal to exclude the stormwater.
522. Had you the evidence of Mr. Stayton before you? We read his evidence of course; but that is principally directed to the question of the advantage of the International system over the sewage-farm system. We reported that the International system under certain circumstances was a very valuable one. We thought Mr. Stayton's evidence conclusive on that point.
523. But having read his evidence, you do not think his objections apply to the proposal which you recommend? I do not think they are fatal to the sewage-farm proposal.
524. What are your reasons for thinking so? I think the sewage-farm system has been proved to operate beneficially wherever it has been used. The International system, though quite applicable to places where you cannot adopt the sewage-farm system, seems unnecessary where you can adopt it since the sewage-farming system is cheaper and better, and gives a better effluent.
525. You consider then that Mr. Stayton's proposal is not applicable to Parramatta? Not so applicable as the sewage-farm scheme.
526. You think it would be more economical and efficacious to carry out the proposal of the Department with the modifications which you suggest? Yes; I think so.
527. Have you any other reasons to give why we should accept your opinion? No; except that it is supported by the opinion of the principal engineers of England, whose opinions are of weight on the subject.
528. But the proposal advocated by Mr. Stayton seems to be more modern than the other? Still the sewage-farming system continues, and it is very much a question if the other will. I believe that doubts have already arisen about it.
529. You look upon Mr. Stayton's proposal in the light of an experiment which has not been fully tested? I would not say so. I think it is quite possible that Mr. Stayton's proposal might effect what he says; but I think we can obtain better results from a sewage farm at less expense.
530. I understand that you have had no practical experience of sewerage works except in connection with public buildings? No; but some of the public buildings for whose sewage I have provided are very extensive.

MINUTES OF EVIDENCE—SEWERAGE WORKS FOR PARRAMATTA.

W. W.
Wardall, Esq.,
M.I.C.E.
14 Feb., 1894.

531. You are speaking more as a theorist than as a practical engineer? Yes, as regards a sewage farm. I have had no practical experience of sewage farms.
532. One of the members of your Board appears to have had some experience in that direction? If you refer to Mr. Napier Bell, I would say that he has had very considerable experience.
533. Do you think that Mr. Bell's opinion should be considered as weighty as that of Mr. Stayton? Decidedly I do.
534. May it not appear that Mr. Bell is somewhat out of date with his proposals, not having carried out any sewerage works of late years? I hardly think so. A man may keep himself very well up in what is going on by reading the professional journals and papers. We know here pretty well what was going on in London six weeks ago.
535. You are aware that Mr. Stayton recently took a trip to the old country, and made himself acquainted with the systems in vogue there? I should be sorry to say anything disparagingly of Mr. Stayton's opinion, but the question is, which system is the cheaper and more applicable in this instance.
536. As the result of your studies, and the information you have received from the other members of the Board, and from other sources, you think that the sewage-farm system would be likely to give better results at Parramatta than Mr. Stayton's system would give? I think so.
537. *Mr. Davies.* You, with your colleague, paid a visit to the locality where it is proposed to establish this sewage farm? We did.
538. You are aware that a large portion of the land which it is proposed to convert into a sewage farm is below high-water-mark? Yes.
539. Have you seen the material with which this land is to be reclaimed and raised 5 feet? Yes.
540. Where did you see it? At Long Cove and Neutral Bay.
541. What was the character of that material? Sand, with some silt in it.
542. Mud? No.
543. Silt? I saw a sample in the office just now.
544. I want to know the character of the stuff that is going to be banked up to form a filter-bed? I saw the stuff that they are getting at Long Cove and Neutral Bay, and it consists of sand, with a good proportion—probably one-third—of silt in it.
545. Do you think that that would form a suitable material for a filter-bed? I think it would be perfectly suitable.
546. Do you think that it is the best material that could be got for the purpose of making the embankment? I think so.
547. What, in your opinion, would it cost per acre to reclaim the 42 acres requisite for a sewage farm? Speaking from memory, I think we estimated it at about £40 an acre.
548. How was that estimate arrived at? From information which we got from the departmental officers.
549. You are aware that the land is to be raised 5 feet above the water-level? Yes.
550. To do that will require a large amount of filling? Yes; no doubt.
551. How many thousand cubic yards would be required for each acre? In round numbers, I should think between 14,000 and 15,000 cubic yards.
552. What would the filling be worth per cubic yard? I really could not tell you from memory. We got the information from the Department.
553. But you have a practical knowledge of the value of these things? Yes; but I could not tell you what the dredging would cost. From the information which we received, we thought that the whole cost would be £40 an acre.
554. You did not check the estimate? The only means we had of checking it was the information supplied by the Harbours and Rivers Department.
555. At 2d. a yard the work would cost over £100 an acre? Yes; about that.
556. Do you think that that would be an out of the way price for silt? I am afraid that I cannot give you a reliable answer. Those who are in charge of the dredging should be able to give this information.
557. You only took the figures of the Department? We simply took the figures of the Department as to the cost of dredging and landing.
558. Do you think that 2d. a yard would be an extraordinary price to allow for silt and sand? I could not say until I knew the cost of the working.
559. Would it not cost 2d. a yard to deliver the material with a sand-pump. I should not think so; but you could easily ascertain that as a fact from the Department.
560. You simply took the departmental estimate? No, we took their returns as to cost.
561. You have not gone into any calculation yourself? No.
562. Have you had any sewage farm under your observation at any time? No, except what I have seen here.
563. You mean by a casual visit to Botany? It was rather more than a casual visit; it was a very careful inspection.
564. A professional visit;—that is the only time that you have seen a sewage farm in your life? I saw that farm twice; but I have never seen any other sewage farm.
565. Therefore you have no knowledge of the treatment of crude sewage on such farms? One does not gain all one's knowledge from practical experience.
566. You have no practical experience? None of a sewage farm.
567. You have formed your opinions from reading the views of authorities connected with sewage farms? Yes, and from what I saw at Botany.
568. Do you approve of Mr. Stayton's proposal for treating the sewage of Parramatta? I think the sewage-farm system is preferable, for the reasons that I have already given.
569. Was there any smell at the farm at Botany when you visited it? None whatever.
570. Did you see any quantity of crude matter being put upon the beds? Yes.
571. There was no smell upon it? No smell whatever.
572. Do you think that if crude sewage is cast upon the proposed farm at Parramatta there will be no smell from it? I do not think there will.
573. Do you think there will be no smell or vapour created by the action of the hot summer sun? I think not of any consequence.
574. What is your opinion with reference to the area proposed to be reclaimed and resumed—62 acres altogether? It is proposed to reclaim 40 acres, leaving the remaining 22 acres for subsequent use if necessary.

- W. W. 575. Do you think the area is large enough? I think it is more than ample.
 Wardell, Esq., 576. You think there will be ample room for the treatment of the whole of the sewage of Parramatta?
 M.I.C.E. I think so.
- 14 Feb., 1894. 577. You are of opinion that the farm will not be offensive? Yes.
 578. And that it will not be injurious to the health of or cause discomfort to the people residing in the district? Yes.
 579. *Mr. Trickett.*] Have you studied the subject of the precipitation of sewage? No, except generally.
 580. Do you know that works have been carried out for treating the sewage of the city of Glasgow by precipitation? I was aware that they were to be carried out. I did not know that they had been carried out.
 581. The *Scientific American* of December 16th, 1893, says that "the total estimate, inclusive of land, of treating the sewage of Glasgow, will be £100,000";—is that not a very small amount compared with the estimate of cost in this case? It would seem so at first sight, but of course there is a great difference in the cost of labour.
 582. Parramatta has a population of 12,000, and Glasgow a population of 500,000? You cannot compare the two.
 583. The system seems to be very much cheaper than the sewage-farm system? Not knowing the circumstances, I cannot say.
 584. The Parramatta proposal is estimated to cost £75,926, while the precipitation process at Glasgow is estimated to cost only £100,000. Are you aware that Mr. Stayton, who has recently made inquiries on the subject in England, strongly recommends the precipitation process at Parramatta? I know that he has done so, and I pay great respect to his opinion; but, at the same time, I think that the sewage-farm system is cheaper.
 585. Can you tell us what number of gallons of sewage will be dealt with at Parramatta in the twenty-four hours? I think provision is made for treating 40 gallons per head of population.
 586. That would be 480,000 gallons a day. The amount to be treated at Glasgow is 10,000,000 gallons, so that if the statement of the *Scientific American* is correct, that process is much the cheaper? I could not say without knowing all the circumstances.
 587. Precipitation is an experiment at the present time, is it not? I think so. Everything of that kind is tentative. Things promise very well, but ultimately they are found not to succeed, and continual improvements are being made on the different schemes. The treatment by means of ferozone and polarite is I believe the best that has been found as yet, but how long it will last remains to be seen.
 588. Would you not think that in Great Britain they would require very strong evidence in favour of the precipitation system before adopting it at Glasgow? They could not find stronger evidence than has been given in favour of the sewage-farm scheme. If you look down the list of those in favour of it, you will find that they number nearly the whole of the authorities.
 589. You are referring to the list given in Mr. Hickson's report? Yes; that report gives a *resumé* of the opinions of the best authorities, and is a very valuable collection of them.
 590. A great many of Mr. Hickson's authorities seem rather ancient—they go back as far as 1865? I think the principal opinions in favour of the system were expressed last year at the conference upon the Berlin sewerage scheme, that is in 1893.
 591. Do you know of any locality similar to the proposed site at Parramatta that has been adopted for a sewage farm? No.
 592. So that the farm will, in a measure, be experimental? Hardly; I think its success is almost certain.
 593. The Botany farm has been stated to be unique in its advantages, the soil being composed entirely of sand, but I understand that at Parramatta the land would have to be built up, so that the circumstances of the two places are not quite similar? They are not perfectly alike.
 594. You still think that 5 feet of sand would be sufficient to filter and render unobjectionable the sewage of Parramatta? I do.
 595. Have you heard anything of the Dorking sewerage system? I have read of it, but I could not give you any of the details.
 596. Can you tell the Committee whether it has not had to be reconstructed lately? I could not.
 597. I have been informed that they had until recently the separate system; but, because of the accumulation in the pipes, offensive smells were given forth, and they had to reconstruct the system, and adopt the partially-separate plan? I did not understand that you were referring to the question of the diversion of storm-water.
 598. You have not read anything about it? Not as to that; but there is a great difference of opinion between engineers as to the propriety of diverting storm-water, and the same reasons do not apply in all cases.
 599. What is your particular opinion? My opinion is that at Parramatta there are hardly any difficulties in the way of diverting the storm-water.
 600. If you divert the storm-water, you have to constantly flush out the sewers? That can be accomplished in another way. If you do not divert the storm-water, you only occasionally get the sewers flushed; and they are flushed when perhaps they do not want it, and when they do want it there is no water available. There should be a permanent system of flushing always available.
 601. With the separate system the regular flushing of the sewers is necessary? I think it is desirable; but in our report we simply suggested the diversion of the storm-water as a matter for the Department to work out, as circumstances may guide them. They may find, when they go into details, that the separate system is wholly unfitted for the work.
 602. But in your report you make the saving which will be effected by it rather an important feature? That is supposing the system can be adopted.
 603. But you have not carefully worked out all the details? No; we could not go into details because we had not the time. We simply spoke generally as to the probable results.
 604. Which system prevails most—the separate system or the partially-separate system? I should say the separate system, except in places where it is inapplicable.
 605. The grades at Parramatta are somewhat level? No; there is a considerable fall there.
 606. Do you mean before you come to the pumping-station, or after. Is there a good fall from the town to the pumping-station? Yes.
 607. From the pumping-station to the farm it is flatter? Yes.
 608. You think that the fall would be sufficient to carry off the sewage if the separate system were adopted? I think so, as regards the storm-water.

W. W.
Wardell, Esq.,
M.I.C.E.

14 Feb., 1894.

609. What reduction in the size of pipes could be made if the separate system were adopted instead of the partially-separate system? I should say about one-third in round numbers; but that is altogether a matter of calculation.
610. You have not gone into it? No.
611. I should think that would materially affect the question of cost? I need not tell you that a Board appointed for the object is not expected to go into all the details of calculation. We merely threw out the suggestion to be worked out by the Department. If our idea does not work out with the saving we anticipate, it must fall to the ground.
612. *Mr. Neild.*] Would you name one or two of the principal schemes of sewerage you have carried out in connection with public buildings? I carried out the sewerage of the Parliament Houses and Government House, Melbourne, amongst others.
613. What is the nature of the sewerage works in connection with the Parliament House there? The sewage was all taken into a tank in a reserve and passed through filters, and was then allowed to run through a long sewer into the Yarra.
614. Are any chemicals used? None whatever. The sewage is filtered through gravel and sand. These works were carried out nearly thirty years ago, so I cannot be quite sure as to the details; but from memory I should say that the filter-bed was from 2 feet to 3 feet deep.
615. The effluent is discharged into the Yarra? Yes, below the Falls.
616. Is this system still in use? I believe so.
617. What is done with the residuum left after filtration? It is taken away by the ordinary carts.
618. Was the same system adopted at Government House? Yes.
619. Those works were designed and carried out by you? Yes. There is no sewerage whatever at Melbourne as yet, and I do not mean to say that this was the most scientific way of dealing with the sewage at the places mentioned, but at that time we could do nothing else with it.
620. What is the character of the effluent? It was very good indeed, though I cannot say that I should like to do what a gentleman did with some of the effluent at Botany the other day—drink it.
621. Do you know how frequently the filters have to be changed? I could not tell you from memory, but I do not think it is very often. It is five and twenty years ago since the works were done.
622. Would it be done twice a year? I do not think the filters were changed, but the tank had to be emptied once or twice a year.
623. Was it found necessary to change the sand and gravel used for filtration purposes? I think not, but I am speaking entirely from memory. If any credit is due to the system, I am not entitled to it, because it was suggested to me by a medical friend in Melbourne, the late Dr. Tracy, who carried it out in his own house.
624. Did you take into consideration the question of dealing with the more clayey portion of the proposed farm at Parramatta? To this extent, that we thought it would not be necessary to use that land for many years to come. We considered how it could be made available then.
625. Do you agree with Mr. Napier Bell that it would be desirable to reclaim land fronting Duck River to the south of the proposed farm if an additional area were necessary, instead of attempting to use the 22 acres of clay soil? I have not heard the suggestion before, but that strikes me as the better plan.
626. You have no very great regard for the clayey portion as adapted for the purposes of a sewage farm? No; I think the other land would be better.
627. Do you think Mr. Bell's plan would be cheaper, or that it would be better in practice? It would be better in practice.
628. In considering this matter, had you no regard for the cost of the work to the Borough? No.
629. You did not take into consideration the question of any revenue being derived from the farm? No; that matter was not referred to our consideration.
630. Is it customary for a material revenue to be derived from sewage farms? I think so. I have always understood that they can be made to pay a small interest, at any rate.
631. You saw a certain amount of cultivation at the Botany sewage farm? Yes.
632. Did it meet with your approval? I should not like to say, because I have no knowledge of farming. The farm seemed to me to be doing very well, and realising very good results; but I have no experience of such matters.
633. But you can give the Committee an opinion as to whether agriculture carried on at the proposed Parramatta sewage farm might be made to give a return which would reduce the cost of the work to the Borough? I have no doubt that it would; but I am afraid that my opinion on the subject is not worth much.
634. Have you paid any attention to the system of using osier-beds on sewage farms? No.
635. You are aware that osier-beds have proved very valuable in the old country, by absorbing a very large quantity of effluent? Yes.
636. At Parramatta you propose to run the effluent directly into the river? Yes.
637. Do you propose to adopt any filtration process? No; except the natural filtration through the soil.
638. When you saw the site of the farm, was it high or low tide? I do not remember, but I think it was high-water.
639. Was there much water upon the land it is proposed to reclaim? The tide was over it to some extent.
640. You saw some fascine-banks there? Yes.
641. Do you think they would bear the pressure of an embankment 5 feet above the water-mark, and the sewage which would be discharged upon it? I think so, if properly constructed.
642. There would be no fear of anything giving way? I do not think so; the water will be a support on the outside.
643. You are aware that the proposed farm is 20 miles from the ocean? Yes.
644. Therefore the tidal influence would be less effective there than near the sea? Yes.
645. Whilst the upper part of Parramatta and Duck Rivers would be drained by the ebbing of the tide, the tide flowing in in the lower portions of the harbour would drive the sewage back again instead of letting it escape? I do not think the effluent would have a bad effect upon the river.
646. There would be no fear of polluting the banks? None whatever.
647. Did you see any signs of fouling near the shores in the vicinity of the Botany farm? I did not.
648. Did you visit these shores? Yes; and there was no fouling on the Yarra from the Government House effluent.

- W. W. Wardell, Esq., M.I.C.E.
14 Feb., 1894.
649. Are you aware that in time of rain the whole of the sewage usually taken to Botany is let into the bay? No.
650. Would you approve of such a course being adopted at Parramatta? I think not.
651. You think there would be a chance of the banks being fouled if that were done? Yes.
652. Therefore you would recommend, if the works were carried out, that provision should be made for dealing with whatever came through the delivery pipes, irrespective of the rainfall? I think so.
653. Had you any difficulty of that kind in view when you recommended the separate system? No; but it occurred to us that there would be a manifest saving if the separate system could be applied, and that it was desirable that it should be carried out if the expense made it practicable.
654. Would you be surprised to hear that one of the members of the Board has given evidence to the effect that the saving would be more than 25 per cent.? I know that he thinks so, but I do not.
655. *Mr. Collins.*] Have you had much experience in farming land? No.
656. Do you know the description of the soil at Parramatta? The soil is to be built up there, excepting in one place which it is not proposed to touch.
657. When it is built up do you think it would be good land for farming purposes? Yes, so far as I know.
658. *Mr. Ewing.*] Your knowledge of the International process and sewage work generally is limited to your reading? Yes.
659. It is just the information that a professional man gets from his reading, rather than from practical experience? Yes; I have had nothing to do practically with sewage farms nor with the International system.

Edward Bellingham Price, Esq., M.I.C.E., supervising engineer, Department of Harbours and Rivers, sworn, and examined:—

- E. B. Price, Esq., M.I.C.E.
14 Feb., 1894.
660. *Chairman.*] Have you had anything to do with sewerage works during your professional career? Not since I came to this Colony. I had a little to do with such works in Ireland, in surveying and getting out plans. I have been looking through such matters, however, for my own instruction, since I went home.
661. What little you had to do with sewerage work before you came here was office work;—you were not connected with the initiation or the carrying out of any scheme? No, except for private houses.
662. How long were you so engaged in the old country? About a year.
663. In whose office? My father's.
664. What were the towns or places for which the sewerage was intended? Blackrock and Kingstown. They are both suburbs of Dublin.
665. What was the population of those places? About 25,000; that is, the portion we were going to drain.
666. You have recently visited England? Yes; I only came back on Saturday.
667. While there you availed yourself of the opportunities that presented themselves of inquiring into various engineering questions? Yes; I was looking after various things—water supply schemes, sewerage schemes, tramway construction, and other matters.
668. *Mr. Davies.*] What sewerage works did you visit when you were home? I visited the London sewerage works, the Barking Outfall as it is called. It is one of the most modern works at home, and the largest.
669. What method do they adopt there for the treatment of sewage? They precipitate it with lime and iron, and discharge it into the Thames.
670. What becomes of the solid matter? The very coarse solid matter is strained out and burned in furnaces. What is precipitated is pumped into steamers and taken down to the mouth of the Thames, and discharged into deep water.
671. *Chairman.*] Will you explain the process? The outfall sewer consists of three 9-ft. diameter sewers. Across them there are iron grids, which strain out the floating paper, straw, corks, and stuff of that kind, which are taken out mechanically and burned in a large furnace. The sewage then receives a charge of quicklime, which is mixed up with it, and then it flows on for a quarter of a mile.
672. *Mr. Davies.*] In an open conduit? In the closed sewer. It then receives a charge of sulphate of iron in solution, and flows another quarter of a mile, when it enters into long precipitating channels. There are thirteen of these channels, 1,000 feet long and 30 feet wide. It flows slowly through these, the overflow escaping over a weir into the Thames. After the sewage has been precipitating in these channels for fifty hours it is emptied into the Thames, and the watery sludge which remains is drawn off and pumped into settling tanks, where it is left about a day. The surface water is then again drawn off, and what still remains is pumped into hopper barges and taken out to sea. The sewage is settled as much as possible before they finish with it.
673. *Chairman.*] Is the weir employed in order to aerate the sewage? No; it is only intended to afford an opportunity for the surface water to escape. I do not think it is intended to aerate the water at all.
674. But does not aeration enter very largely into the purification of an effluent? Yes. The sewage runs out in a tremendous torrent.
675. *Mr. Davies.*] I understood you to say that the sewage was conducted through covered sewers? Yes.
676. What length of open conduit is there before the sewage discharges itself into the Thames? It is all covered. The precipitating chambers are all arched over. I went down into some of those that were empty. They are emptied alternately, and you enter them through a manhole. About 20 feet is the average depth; they having curved bottoms and arched tops.
677. What would be the fall? There is practically none. The precipitating chambers are practically level, but there is a slight fall back from the point of discharge in order to cause the sludge to run back.
678. But there is a slight fall into the Thames? Yes. The sewage keeps flowing along the conduits. There are two valves—an inlet valve and an outlet valve—and when a chamber is full the inlet valve is closed, and the outlet valve gradually opened from the top, so that while the water runs out the sludge remains behind.
679. The solid matter is taken away before the sewage passes into these long pipes? Only a very small portion of it—about 90 tons a week is all they catch—and that is principally corks, straw, and paper.
680. What is done with all that stuff? It is burnt in a furnace.
681. What is done with what is left over by the fire? There is a very large gas-works close by, and I think it is mixed with the spoil from the gas-works.
- 682.

E. B. Price,
Esq.,
M.I.C.E.
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682. What was the construction of the kilns used for burning the solid material? It did not seem to be very remarkable. There is just a large furnace, into the top of which the wet sludge is delivered, and it keeps smouldering away. There are about 12½ tons to be disposed of a day, and 90 tons had been disposed of in the week previous to my visit.
683. What number of people to the acre are provided for by this scheme? I could not answer that question without looking up the report on the subject.
684. What quantity of sewage is daily delivered at this place? The day I was there 119,000,000 gallons passed through. The total for the previous week was 833,000,000 gallons, but the weather was dry at the time.
685. Does the storm-water find its way into the sewers there? Not all; but a great portion of it does. They take as much as they can possibly get.
686. Does the drainage of the streets through the gully-shafts find its way in? Yes.
687. Do you know the capital cost of the work? It was over £5,000,000.
688. Do you know the annual cost? I cannot tell you that. These works have only been in existence three years. The former works were constructed by Sir Joseph Bazalgette. The sewage then was not precipitated at all, it was merely held in a large reservoir until the tide fell, and at low water it was let out. They had to modify the tanks to adapt them to the new system.
689. Under whose control is the work? It is under Mr. Bennie, the Engineer-in-Chief for the London County Council.
690. Can you tell us anything as to the income derived? No; I cannot, but a sewerage rate is levied.
691. What other sewerage schemes did you visit? A very modern system has been invented in Ireland by Professor Adeney and Mr. Parry. They call it the oxygen system, and it has been very successfully applied upon a small scale at the Dundrum Lunatic Asylum. Mr. Hickson heard of this system, and wrote home to ask me to look at it. I visited the place with Mr. Parry, and went to his office several times to get all the particulars I could.
692. Will you kindly describe the system? It is only being tried on a small scale at Dundrum, because the lunatic asylum only shelters about 250 people. The sewage is treated in a house about 25 feet long and 20 feet wide. There are three deep tanks in it going into a funnel at the bottom, and the sewage coming in turns a small water-wheel which operates little tap-valves, and lets in the chemicals as required. They use a little soda and a little nitre. If there is any sewage coming in the water-wheel lets in the chemicals, but when the sewage is not running the chemicals are not let in, so that there is no waste. The scheme is entirely automatic. The inventors have tried several experiments, but what they use principally is manganate of soda for precipitating, and nitre to put oxygen into the effluent.
693. *Chairman.*] It is an instance of chemical precipitation? Yes; but the effluent, after it has been charged with nitre will not go bad again. It is discharged into a stream running past some gentlemen's residences, and there is nothing nasty about it. It seems to carry the oxygen with it all the way down the stream. The nitre is put in to help the friendly microbes to eat up the others. The system had been in operation about one year and three months when I saw it, and there is no sign of the stream being polluted. Indeed if there was any pollution an action would be entered against the Government.
694. What about the cost? I tried very hard to ascertain the cost, but they would not give it to me. They said that they were patenting the system in Australia, and that they did not like to publish the details until they were quite sure of the proper proportions of chemicals. They have been trying a great many experiments. As I mentioned, there are three deep tanks, and the sewage after turning the water-wheel goes to the bottom of the first one, which is 7 feet square and 16 feet deep.
695. *Mr. Davies.*] Does not the wheel break up the solid matter in the sewage? No. It is only a light tin wheel.
696. Have you any idea of the cost of the system? I do not think it is expensive, because the chemicals they use are very cheap. The most expensive is the nitre which they put in at the last to help the friendly microbes. The manganate of soda is very cheap.
697. What do they do with the sludge? It is taken out and buried in the asylum garden. There is only a very small amount.
698. *Chairman.*] Where does the friendly microbe come from, seeing that the sewage does not flow over the soil which is their home? They occur in the sewage itself.
699. *Mr. Davies.*] The sludge is buried in ordinary trenches? Yes, and they grow cabbages and vegetables for the asylum on it.
700. Did the system strike you as an improvement on other systems which you have seen? I thought it would be a very good system for an isolated asylum which had no connection with any other sewerage scheme.
701. You do not regard it as suitable for a municipality like Parramatta? No. I may mention that I had a conversation with Mr. Bennie, the great authority on the subject in London, and also with Mr. Chatterton, who is a partner with Sir Joseph Bazalgette's son, and is carrying out a scheme for the drainage of Dublin, and they both thought that if land was available there was no system which could compare with the irrigation system. Everyone says, however, that land near London is so valuable that that system cannot be used there. Mr. Bennie holds about the first engineering position in England.
702. *Chairman.*] You gathered from him that where land was available the sewage-farm system was the best way of dealing with sewage? Yes; and he sent me specially to see some experimental filters of his which had been constructed of sand and coke breeze.
703. *Mr. Davies.*] Did you see any other system in operation? Yes, I saw the Croydon Irrigation Farm; I was there in August and November.
704. *Chairman.*] Will you briefly describe that system? Croydon is a town in Surrey. I could not be sure of the population, but I think it must be between 50,000 and 60,000. There they have an area of about 500 acres, which they bought for the purpose, but all of which they do not use as a sewage farm apparently. The sewage is pumped on to this land, and runs through it in ordinary drains.
705. It is drained down to the lowest point whence it is pumped on to the farm. How far is the pumping-station from the farm? They pump it for a distance of about two miles. The pumping-station seems to be in the town itself. The town is a very straggling one, and the scheme takes in several villages.
706. The pumping-station is in the lowest part of the town? It is close to the town. I could not tell you exactly what distance the sewage is pumped, because I do not know where the drain ends, but it is about

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- about 2 miles. The sewage runs through the farm in ordinary ditches. There is a ditch on each side of every field. Pumping is necessary only on the higher portion of the farm.
707. *Mr. Davies.*] How deep are they? About 4 feet by 3 feet. The whole farm is divided into paddocks, and they turn the sewage over in one paddock and let the land get a good soaking, and then they soak another paddock. After the ground has been well soaked the grass springs up rapidly, and they turn cattle in to feed upon it. Some of the paddocks are ploughed up.
708. Where does the sludge go? The sludge goes on to the land. Of course they strain out the coarse floating particles just as they do in London; but they are not very much. A great quantity of cabbages are grown on the farm, as well as wheat, oats, clover, and other green crops. They keep working round their paddocks in rotation, so that no nuisance is caused.
709. How close is it to population? There is population all round, and right through the middle of the farm. The farm is not in one block; it is broken up into two or three sections, and a railway runs through it. Croydon is only 13 miles from London. I was living within 1½ miles from the farm for some time.
710. How near is the most thickly populated village? A ¼ mile away.
711. Is that the nearest point at which the population is dense? The houses actually abut upon the farm.
712. Are those the houses of employees upon the farm? No; I was living close to the farm, and I used to cross it every day.
713. Did you notice a disagreeable smell? Only once, when they were flooding one of the paddocks just opposite a road I was passing. It was a grass paddock, and they had put a great deal of sewage on it which had not all been soaked up; but in the evening the smell was quite gone.
714. What is the character of the soil? Rather rich clayey soil overlying gravel. It is not all exactly the same, but the surface is very clayey.
715. Do you think it is likely to make a good material for filtering? Yes; but a much larger area is required than if the soil were sandy. The area there is far in excess of what they will want for many years to come.
716. That is the only other place you visited while at home? Those are the three places I went specially to look at, but I saw several others.
717. Do you know the site of the proposed sewage farm at Parramatta? Yes; very well.
718. Have you visited the locality since you returned from England? No; but I used to live at the other side of the river, and I know the locality well. If I remember rightly it is swampy.
719. You know that the Department propose to reclaim the land and fill it up to the height of 5 feet above high-water level? Yes.
720. Do you know the extent of land that will be available for sewerage purposes? I am informed that about 64 acres will be available.
721. Do you think that that would be sufficient for treating the sewage at Parramatta? Yes; if the land were reclaimed with sand.
722. Do you think that the silt and sand and stuff taken from the harbour would be good filtering material? Yes; if they used the stuff they got at White Bay, Johnstone's Bay, and other places, it would do very well—much better than anything I have seen in any other sewage farm.
723. Are you of opinion that no disagreeable smell would come from the farm if the departmental proposal were carried out? Not if it were properly managed. I think more depends upon the management than upon anything else.
724. What management would be necessary? It would be necessary to see that too much sewage was not placed upon any paddock. The farm should be divided into small lots, and each field should only get just as much sewage as would soak in. The smell at Croydon was only noticeable after apparent mismanagement.
725. Do you think the soil would become charged so that after a year or two it would not filter so much sewage as it did at first? No; I think that if a good crop was grown on it, such as corn, sown broadcast, cabbages and strong growing plants, it would rather improve. Plants take the manurial qualities out of the land and leave it as good for filtering as ever it was. I spoke to some people in the old country on the subject, and their experience is that sand filters are improved by use. The effluent is clearer and freer from bad properties after the filter bed has been in use for a year or so than it was at first. The water seems to go through the sand too quickly at first.
726. Have you visited the Botany sewage farm? Yes; I was there yesterday. I had been there before, but I thought I would go out yesterday and have another look at it.
727. Did you notice a disagreeable smell there? Yes; the Superintendent was laid up, and too much water had been allowed to run on to one of the paddocks.
728. Where should it have gone? It should have been put on to another paddock. They were continuing to put sewage on to land that was saturated.
729. Then you were rather disappointed at your visit? No; I was not. I examined a good deal of the soil of the filter-beds which were not flooded, and I found that it was beautifully clean and sweet. On one paddock, which has been in use for a good many years, the sand was hardly discoloured.
730. How did that farm compare with the Croydon one? The Botany farm is far superior to the Croydon farm, because at Croydon they have what you would call stiff clay.
731. Was there much smell at Croydon? Much the same as at Botany. At Croydon you only smelt the sewage when you got right on to the paddock.
732. I suppose the sewage will always be a source of annoyance when they are turning it on to the beds? No. My brother is a doctor, and has lived for four years alongside the Croydon farm, and he says that it is very seldom that there is any smell. The place is very healthy.
733. But it is quite possible that you can become acclimatised to any smell? One of the men engaged in cleaning out the precipitating tanks in London has followed the trade of cleaning sewers for fifteen years, and he is a fine strong man, who says that he was never ill in his life.
734. Have you made yourself acquainted with the plans of the Parramatta sewage scheme and the estimate of cost? I have only just read the papers. I did not know until a couple of days ago that I should be called.
735. Do you know anything as to the estimate of revenue? No; I have not gone into that.
736. Have you made any estimate of the cost of reclaiming the 42 acres? No; I have not, but it would be a very good spoil bank for the Harbours and Rivers Department, and would save them taking the stuff to sea, so that the reclamation ought to cost nothing for material.

737. Do you think that £40 an acre would cover the cost? No; I do not think so, if you have to let a contract for the work.
738. What is a cubic yard of silt or sand worth, deposited at that place? I think they would bring the barges up and drop the silt into the bottom of the river, and then pump it up again with a sand pump. That would cost about 2d. a ton; at least, that is what it has cost at White Bay. I have not gone into the question myself, however.
739. Mr. Wardell, who is one of the members of a Board appointed by the Minister to investigate this matter, estimated that 1,4,000 cubic yards of stuff would be required for this work, and that at 2d. a yard would cost over £100 an acre? Without going into figures, I should think it would be about that.
740. You do not know the cost of the fascine banks? No; I have had nothing to do with them.
741. You are simply here to give evidence as to what you saw during your trip home? Yes; in regard to the Croydon and London works.
742. Of the three systems which you saw, which do you approve of most? That depends altogether on circumstances. If I had the land I would go in for the intermittent irrigation system, but if there were no land available, I would adopt a precipitating system. Lime works very well as a precipitating agent, and so does manganate of soda.
743. During your visit to England, did you see any place where the sewage of the town was treated by the International system? No; I did not. I was not near any towns where they treat sewage in that way. There are not many such towns.
744. Did you come into contact with any engineers that could give you information in regard to systems of treatment? Yes, it was to get such information that I called on Mr. Binnie and Mr. Chatterton. Mr. Chatterton is engaged in connection with the Dublin sewerage. The Dublin outfall sewer discharges into the ocean. The sewage is held in a large reservoir, and let out at low tide. I asked these gentlemen particularly about the International system, but Mr. Binnie told me that he did not think anything especially of the filter. He said that he had been trying experiments with their filters and with sand and coke filters. He is trying an experiment with a filter of about 1 acre in extent, composed of coke and sand on to which he runs 1,000,000 gallons a day.
745. Is that an inexpensive process? Yes; it is very cheap, because they get the coke for nothing. I saw the effluent myself, and took a sample in a bottle. It was beautifully clear. They run the sewage on to the land for three hours continuously, and then give the land a rest for three hours. They employ two filters alternately.
746. How long have these filters been in use? The particular filter I speak of, had only been in use sixteen days. Mr. Binnie was trying experiments for the London County Council, and he said that up to the present, the best filter was the coke and sand-filter. The sand is really sharp gravel. Mr. Parry, too, although he has patented a system of his own, says that where suitable land was available he would not use his own system.
747. *Mr. Hoskins.*] I gather from your evidence that the treatment of the sewage of large towns is still in an experimental stage;—sanitary Engineers are continually experimenting to ascertain whether they can treat sewage with better results than have hitherto been obtained? Yes; all the sanitary engineers I met at home were carrying on experiments. The chief drawback to all the systems is that the effluent putrefies after its discharge into the river. They want a filter that would prevent that.
748. Except where there is a big rise and fall of the tide, such as in the Thames, where there is a rise of 20 feet, it is difficult to get rid of the effluent? It is very difficult where the stream is a small one. At Dundrum the stream is smaller than the volume of the effluent.
749. In respect to what you said about the offensive smell at Croydon, do you not think that if a paddock here was similarly treated, the smell caused by the heat of the sun would be more prejudicial to the people in the neighbourhood than would be the case in England? No; I think it is just the reverse. They have found from experiments that strong sunlight has a very good effect upon sewage.
750. Are we to understand that the greater the heat of the sun, the less danger there is from the effluvia? The sewage farm at Croydon worked better in summer than in winter. The only time I noticed a smell there was in November. I was there in August during the hottest summer that they have had in England for many years past, and there was no smell at all.
751. Are we to understand that the difference in temperature between the two climates is rather in our favour? Very much so. The growth of vegetation in a hot climate is so great that the plants absorb and use up all the waste putrefying products in the soil.
752. The effluvia from a sewage farm would not be greater in a semi-tropical country like this than in the temperate climate of England? I think it would be much less.
753. Will you say that it is an axiom of sanitary engineers that the greater the heat acting upon the sewage farm, the less the likelihood of smells? Yes; because the heat promotes the vegetable growth upon which we depend for getting rid of the sewage. Of course light and air have a great effect in splitting it up.
754. Did you hear that the system of precipitation found much favour in Great Britain? Yes; a great many towns have adopted such a system.
755. Can you say of your own knowledge, or from information you have acquired, that the precipitation system is not as much used in England as the sewage farm system? Precipitation combined with a small sewage farm system seems to be the system universally adopted, for the simple reason that they cannot get the land for a large farm.
756. Are you aware that they are now carrying out an extensive precipitation system at Glasgow, the second most populous town but one in the United Kingdom? I have heard so. Of course, land is very hard to get there.
757. Have you closely inspected the land at the proposed sewage farm at Parramatta? I have seen it pretty often. It is swampy land, but that is not the land that will be used for the sewage farm.
758. A number of trial shafts have been sunk by Mr. Stayton? They must be below high-water mark.
759. No, they are on the 22 acres? I have not been there since the trial shafts were sunk.
760. Then you cannot offer an opinion as to the description of the clay there? I should say that it would be very bad for a sewage farm, and that the success of the scheme would depend entirely upon the material put upon the land. I do not think it would matter if there was solid rock below, as long as the material on top was sharp sand.

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761. How many feet of soil would you recommend to be placed on the land in order to ensure the effectual treatment of the sewage? Mr. Bennie's experiments show that 3 feet would be sufficient, but I would put 5 or 6 feet to make sure.
762. You consider that if the 22 acres are to be used the ground must be covered with sand? Unless it is kept constantly ploughed; but I would certainly cover it with sand if it is like what I think it is.
763. *Mr. Neild*] You made a remark just now with regard to the putrefaction of the effluent;—would what you said apply to the effluent from a sewage farm as much as to the effluent from the filtration process you were describing? No.
764. You do not think there would be any risk of the effluent from a sewage farm putrifying? No; I examined the effluent from the Croydon farm on several occasions, and found it to be perfectly pure.
765. Is the Croydon farm worked by ploughs? A portion of it is worked, and part is laid down in grass.
766. Is the sewage matter distributed broadcast over the grass? It runs right over the grass.
767. Without any ploughing? Without any ploughing at all.
- 767½. The Croydon soil would not be anything like so heavy as the soil on the 22 acres at Parramatta? I could not say from memory; but I should not call it a light soil.
768. Did you make any inquiries when at home in reference to the lighting of towns by electricity generated by the consumption of the town refuse as fuel? No; I did not.
769. You know that that has been done in some of the centres of population in the old country? No; I have not heard of any case.
770. *Mr. Ewing*] You have already said that you regard sewerage as a progressive science? Yes, so far as precipitation agents go. They have not yet ascertained what is the best chemical to use.
771. You have given it definitely as your opinion that irrigation is the best means to adopt? That is my opinion; but I got it from Messrs. Bennie, Chatterton, and Parry. Mr. Parry is about the greatest authority on the subject in Ireland, and Messrs. Bennie and Chatterton are some of the greatest authorities in London.
772. They have as good opportunities as any men in the world for forming an opinion? Yes; Mr. Parry has carried out an immense number of works in Ireland, and so has Mr. Chatterton in England, while Mr. Bennie has charge of the largest sewerage scheme in the world.
773. *Chairman*] And is experimenting from day to day? He is constantly experimenting.
774. *Mr. Ewing*] How much of the departmental scheme will become valueless in the event of a precipitation scheme being adopted? I suppose you might say that the pipe from Harris-street to the sewage farm could be dispensed with, but it would be valuable in a way, because even if the precipitation system were adopted I should like to discharge the outfall at Duck River.
775. I want to know how big a mistake we should have made supposing the sewage farm turned out to be a failure? That would entail a little additional expense for a precipitating tank at the sewage farm, but you could use the effluent to irrigate the land.
776. It is your own opinion that nearly the whole of the works would be valuable, even if science enabled us to adopt some better system than the sewage farm? I think so. A slightly additional expense would have to be incurred, but probably not more than £3,000.
777. Do you think that if we make a mistake, we shall not lose more than £3,000? You might have to increase the cost by about £3,000. The whole of the works at Dundrum only cost about £500. They are capable of treating about 12,000 gallons of sewage a day, and I suppose for double the cost they could treat 20,000.
778. Do you know of any town of 12,000 inhabitants in the old country that possesses an extensive sewerage scheme? I do not.
779. From your experience the towns that have carried out sewerage schemes have been well able to pay for them? Yes; they have been richer towns than that.
780. Incomparably richer? Some of the smaller towns in England have sewerage schemes, but they are mostly manufacturing towns. Croydon is a suburban town, and contains some fine villas.
781. The population there, you say, is about 50,000? I think so. Several adjoining suburbs use the farm.
782. You have no knowledge of what towns of 12,000 inhabitants do with their sewage? Most of them run it straight into the river.
783. As a rule, they do not have sewerage schemes? No. As a rule, they run their sewage into the river, which, if it has a good volume of water, purifies it, and takes it away.
784. The inference is, that towns of less size in other parts of the world do not think the time has come for incurring such an expenditure? I could not quite answer that question, but the necessity for sewerage systems there is not quite so great as it is here.
785. *Mr. O'Sullivan*] The Croydon you refer to is a suburb of London? Yes.
786. Does the farm you speak of treat any of the sewage of London? No. The Barking Works are north of the Thames, while Croydon is on the south side of the Thames.
787. *Mr. Humphery*] Have you given any consideration to the separate system as distinguished from the partial system of dealing with the sewage? I had a conversation with Mr. Parry on the subject, and he was of opinion that in isolated cases in Ireland, it was better to let in only part of the rainwater.
788. He recommended the partial system? He seems to let in only part of the rainwater. He lets in the water from the yards, but not from the roofs, or from the roofs and not from the yards.
789. Have you read the report of the experts to whom the evidence taken on this subject was submitted? I can hardly say that I have read it; I have simply looked through it.
790. They recommend the total exclusion of the rainfall; but from the evidence you have gathered, and from what you have seen, do you think that desirable? No; I do not. I think it will be very difficult to flush the sewers if you did not admit some of the rainwater. I would let some of it in. I know that at Blackrock, in Dublin, we had little weirs, so that if the rain was very heavy part of the water would run away, and was prevented from entering the sewers; while if there was only a little rain, the water would get in.
791. In your opinion, the suggestion of these gentlemen is not an important one? I do not think so. They probably thought of the saving of pumping, and the saving in the cost of pipes, but I think it would be better to let in some of the water.
792. Would you like to think over the matter? I do not think I should alter my opinion.

793. You have no doubt that it would be better not to exclude all the rainwater? I have never seen it done successfully in regard to country-houses and small works of that description. I have seen it tried but they have always had to let in the rainwater afterwards. E. B. Price,
Esq.,
M.I.C.E.
794. Speaking of the Barking Outfall, was there any land available there originally? No, most of the land has been reclaimed from the river. 14 Feb., 1894.
795. Was that why the precipitation scheme was adopted? It would have been out of the question to treat such a quantity of sewage upon a farm.
796. Have you considered whether 42 acres will be a sufficient area for the treatment of the sewage of Parramatta for a considerable time to come, allowing for the ordinary increase of population? I think that area will be sufficient. Every acre of that sandy soil should certainly treat the sewage of 500 people. At Croydon they have 200 people to every acre.
797. Therefore, in your opinion, it would be ample for a population of 20,000? Yes, quite sufficient.
798. The area would be ample, exclusive of the clay land? Yes. I think it could treat a great deal more; but it would be safe to say 20,000.
799. *Mr. Neild.*] You said just now that it was more necessary to provide elaborate methods of sewage here than in England because the climate was hotter? I meant to say that sewage run into a river in Australia would have a worse effect than it would have in England.
800. Because of the greater heat? Yes, and frequent droughts.
801. Did you not, a little time ago, say that the heat of Australia would render the sewage less obnoxious than it was in colder climes? Yes; when applied to a sewage farm, as it makes the sewage farm more beneficial, by encouraging the growth of plants.
802. You said that if it were found necessary to adopt a precipitation process at Parramatta the precipitation could be carried on somewhere near the pumping-station, while the farm would still be useful for getting rid of the liquid. But if a precipitation process were adopted there, could you not run the effluent straight into the river, and thus save the expense of pumping it on to the farm, and maintaining the farm? It would save that expense, but then you would have to filter the sewage.
803. But if you used a precipitation process could you not save the filtration? I do not know the levels well; but I think you would have to pump in any case.
804. Could you not carry out the precipitation at the pumping-station, and then run the effluent into the river? The tanks would be pretty deep, and the bottom of them would probably be below high-water mark.

WEDNESDAY, 21 FEBRUARY, 1894.

Present:—

JACOB GARRARD, Esq. (CHAIRMAN.)

The Hon. WILLIAM HENRY SUTTOR. The Hon. JAMES HOSKINS. The Hon. FREDERICK THOMAS HUMPHERY. The Hon. JOHN DAVIES, C.M.G. The Hon. WILLIAM JOSEPH TRICKETT. THOMAS THOMSON EWING, Esq.	WILLIAM CHANDOS WALL, Esq. WILLIAM MCCOURT, Esq. JOHN CASH NEILD, Esq. EDWARD WILLIAM O'SULLIVAN, Esq. CHARLES COLLINS, Esq. HENRY DAWSON, Esq.
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The Committee further considered the proposed Sewerage Works for Parramatta.

Thomas Peter Anderson Stuart, Esq., M.D., Professor of Physiology, University of Sydney, and Medical Adviser to the Government, sworn, and examined:—

805. *Chairman.*] How long have you held the position of Medical Adviser to the Government? About fourteen months. T. P. A.
Stuart, Esq.,
M.D.
806. How long have you been in the Colony? Eleven years.
807. Since you accepted the position of Medical Adviser to the Government, has the insanitary or sanitary state of Parramatta been brought under your notice? It has. 14 Feb., 1894.
808. In connection with the sanitation of the Government institutions, or of the town itself? In connection with the milk supply.
809. Has the proposal before the Committee been explained to you? I have read the evidence taken by the Committee during their previous inquiry; I have conversed with the Chief Medical Inspector and with the Government Analyst on the subject, and I have inspected the various sites, appliances, and material proposed to be used in carrying out the work. I think I know the scheme fairly well.
810. You have a general grip of the whole proposal? I think I have something more than a general grip.
811. *Mr. Hoskins.*] You inspected the site of the proposed sewage farm at Parramatta yesterday? I did.
812. I suppose you saw that there was not very much fall for the sewage from Parramatta to the pumping-station? I did.
813. Do you think that the site selected for the pumping-station is an eligible one, having regard to its proximity to Parramatta and the number of houses in the locality? I do.
814. Do you consider that a nuisance will be caused by the effluvium arising from the sewage when being pumped from this place to a higher elevation? I presume that the pumping-gear will be properly constructed. If it is properly constructed, it cannot be a nuisance.
815. Will you kindly state what you mean by the pumping-gear being properly constructed? That its construction will be of such a nature that the sewage will not be exposed to the air. If the sewage is enclosed everywhere, it is clear that no smell can come from it.
816. Presuming that the well into which the sewage will be emptied before being pumped to a higher level, together with the pumping machinery is properly enclosed, no effluvium will arise which would be prejudicial to the health or obnoxious to the senses of the inhabitants of Parramatta? Certainly.
817. Did you examine the land intended for the proposed sewage farm? I did, and I took away samples of the soil.
818. Did you examine the 22 acres of high land? I did.
819. Do you consider that that is suitable land on which to cast the sewage of Parramatta? I should not say that it is perfect, but I should not say that it is by any means unsuitable. 820.

T. P. A.
Stuart, Esq.,
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820. It has been given in evidence before this Committee that sand is the best agent for purifying sewage and that less offensive odours arise during the purification of sewage by sand than arise during the purification by any other kind of soil. Do you think that the soil on the 22 acres is sufficiently absorbent to prevent offensive exhalations from the sewage cast upon it? If the sewage be cast upon it in proper measure and at proper times, I am of opinion that the soil of the 22 acres is by no means unsuited for the purpose intended. In addition to merely answering your question baldly, I would like to add that when I went to the place, after having read the evidence, I was under the impression that that soil was eminently clayey in its nature. It is difficult to say how I got that impression, but at any rate I had formed it, partly because of the slowness with which the superintendent of the Webb's Grant farm found sewage to filter through it, and partly from the positive statements of witnesses during the previous inquiry of the Committee. I did not care, however, to take their statements; I wanted my own evidence, and therefore I took the specimens of the soil at different levels, and had them analysed this morning. The results of the analysis I hold in my hand. These results come out very much in favour of the soil from the 22 acres, and I am bound to say that I was rather astonished at their favourable nature. The method of analysis adopted was to take 50 grammes of each sample of soil after having freed it from moisture; then the dried soil was put into a dish, and a gentle stream of water was allowed to flow over it, so that the fine particles of silt might in that way be carried off. The soil was treated exactly in the same manner as the gold-miner treats his prospecting samples. The result was that taking the top soil, and I mean by that the layer of loam, varying from 9 to 12, 13 and 14 inches thick, lying upon the surface, there was washed away exactly one-third, leaving two-thirds, of coarse heavy matter at the bottom of the wash basin. This shows that the superficial layer of loam is really a very porous soil. I also took specimens of the subsoil, which I procured from trenches which were, I suppose, 2 or 3 feet deep. I went to a greater depth than that, however, because I dug holes at the bottom of the trenches, and thus got my specimens from the various levels. I find that of the subsoil 12 per cent., that is, about one-eighth was washed away, leaving seven-eighths of coarser material lying at the bottom of the dish. Let us sum up these two results. The top soil had one-third washed away, and the subsoil one-eighth, showing that the amount of silt in the topmost layer is very much greater than the amount of fine clayey silty material in the deeper layer, and proving that on the 22 acres there is fairly good soil for the purposes of sewage purification. That result, I may add, was contrary to my expectation.

821. From the results obtained by testing this soil, have you come to the conclusion that it would be dangerous to health to cast upon the land the sewage of a populous locality, without first putting some other soil on the surface? I should plough up the surface so as to loosen the soil a bit, and then I should put on the sewage. I think the land is, with the precautions already mentioned, not unadapted for the purpose.

822. Do you, or do you not, think that if you did not put any other soil upon the surface of the land, the heat of the summer's sun acting upon the sewage would be calculated to cause offensive odours to be emitted? I repeat the words I used just now. If the sewage be put on the land in a proper way, there will be no nuisance. Of that I am sure.

823. Would you have any objection to state what you consider the proper way of putting sewage on to land? I wanted to get that question out. The proper way is this: You must not put the sewage on continuously. The science of recent years, that is of the last five or six years, shows us that the purification of sewage is not due, as is supposed by most people, to filtration. Incidentally, I may say, that the evidence given in your last report by almost every witness, if not by every witness, seemed to imply that it is by filtration that the purification is carried out. That is not so. The purification is carried out by means of a little organism which inhabits the upper layers of the soil. When sewage is put into the soil this little organism immediately begins to break it up, and after a sufficient time has elapsed, the sewage absolutely disappears. I can give you absolute proof of that from experiments made at Botany. Mr. Hamlet has prepared an analysis of the soil taken from Webb's grant at Botany. If you had seen a section of the ground there, you would have noticed that the uppermost layer is of a dark colour, while the layer underneath is pure sand. If you took some of the dark coloured soil, which has had sewage discharged upon it during five years, you would expect, as I expected, from the colour of it, and from the fact that sewage had been continuously applied to it for so long a period, that it would be highly charged with organic matter. Nothing of the sort. The analysis showed the presence of an increase of organic matter to the extent of .02 per cent.; in other words, after having received sewage continuously for five years, and after having been cropped all that time, the organic matter in the soil had only increased by 1-5000 part, showing that the organic matter of the sewage when poured over suitable soil in the proper way is destroyed by the agency of these organisms.

824. You, of course, admit that the strata of soil and sand at Webb's grant differ from those at Parramatta? They are not so very different. You would not think of putting as much sewage upon the land at Parramatta as you would put upon the land at Webb's grant; but if you only put on a suitable quantity, you would get the same result at Parramatta as at Webb's grant.

825. Whether a sewage farm at Parramatta would be likely to be offensive to the persons living in its vicinity would depend mainly upon the way in which the sewage was placed upon the land? Yes.

826. Then I take it, that it requires great care to properly manage a sewage farm? No, I would not say that. It requires a little experience; but anyone with any sort of intelligence at all—and I presume that the person put in charge of that sewage farm would have intelligence—could manage it properly. If the person in charge had not sufficient intelligence he could be made to do the work automatically by following directions. I would say, let the sewage flow on to the land for six hours, and then allow it to soak in for eighteen hours. If that plan were followed, as a general rule, it is probable that the farm would do its work efficiently for years without causing any nuisance.

827. You have been to Webb's grant, of course? I have been there four times.

828. You are aware that the features of the country, as well as the nature of the soil, at Webb's grant are very different from the features of the country at Parramatta; in the first place the land at Webb's grant is very much isolated, being almost, as it were, an island? So it is.

829. Under such circumstances, might not experiments in the treatment of sewage be carried out with a greater probability of success at Botany than at Parramatta where the land is comparatively level, and there are a number of residences in the vicinity? I do not quite see the drift of your question.

830. *Chairman.*] The isolation of Webb's grant, as compared with the proposed farm at Parramatta, would not make it a more suitable site? Not a bit. If no nuisance arises from the place, it does not matter where it is. If there be no nuisance, why should not people live alongside such a farm.

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831. *Mr. Hoskins.*] Can you say, from your own knowledge, whether in many instances in the old country sewage farms have been found to be very offensive, and even a nuisance? If any nuisance has arisen from such places in the old country, inquiry has shown that the farm has not been properly managed. No matter what you have to do, if it is not properly managed it will be a failure.

832. Your own experience tells you that there is an offensive smell at Botany from the sewage cast upon the land there? That is because Webb's grant farm is not properly managed.

833. You do not consider that the Webb's grant sewage farm is properly managed? In one particular—no; and it is that which gives rise to the smell.

834. In what way is the management defective? It is a very small defect, easily removed; but it is not removed, and therefore there is a smell. The crude sewage comes down the sewer and through the screens, which take out the grosser solid particles. These grosser solid particles have to be scooped up and carried by means of little waggons across the bridge to the farm. When they get there the solid matter is dumped down on the surface of the ground, and is allowed to remain exposed to the air for 3 or 4 weeks before being dug into the soil. This nasty sludgy mass, which is practically all feces, is carried through the open air in these little iron waggons, and these waggons are not properly cleaned out when they are emptied, so that they stink furiously. They should, however, after they have been used, be cleaned out, and then they would not smell. It is a gross mistake to take this stinking matter over to the farm, and dump it down on the surface of the land. Trenches ought to be dug, and the solid matter put into them, and covered over with sand. If it were treated in that way there would be no smell, but it is not so treated, and consequently there is a smell.

835. If the course you suggest were adopted, would the fertilising properties of the sewage be dispersed over the various beds? The sludge, &c. would fertilise the soil where it is buried; but you must remember that a sewage farm is not a place where the utmost good is to be got out of the sewage as a fertiliser. It is intended to get rid of the sewage first, and then, if there can be a little return, well and good. Sewage farms are not established primarily for the purpose of profit.

836. If your suggestions were carried out at Botany,—and you have convinced me by what you have said—the expense of managing that farm would be largely increased? No; I think one man could do the whole additional work, which means, I suppose, £100 a year.

837. You noticed, I suppose, that at Parramatta the lower part of the proposed farm is partly covered with water? I saw the marks of the tide.

838. It is proposed to cover that land with sand, dredged from Rushcutters Bay, and elsewhere in the harbour. Do you think that if it were raised 3 or 4 feet above high-water mark it could be successfully utilised for the treatment of sewage? I am certain of it.

839. Without any offensive result? Quite so.

840. Do you think that not only the residents of the locality, but also people travelling by the tramway, would have no cause of complaint, because of the effluvium arising from the place? I repeat what I said before, that if the farm was properly managed—and I have told you what I mean by that—there would be no reason to apprehend any complaints whatever.

841. You say that you have read the evidence given before the Committee during a 3 years' inquiry;—did you read Mr. Stayton's evidence? Every word of it.

842. I presume that you will admit that Mr. Stayton is an engineer who has given a great deal of attention to sewerage matters? I do.

843. You noticed that he stated that having sunk trial holes, he ascertained that the subsoil was most unsuitable for the reception of sewage, that it would not absorb the sewage, and consequently the surface land would become foul, and the exhalations from it would be offensive to persons living in the locality? So he did.

844. Do you differ from him? I do, and I do not accept his statements.

845. *Chairman.*] Did the specimens you examined come from the holes sunk by Mr. Stayton? Very likely; but I do not know who sunk the holes.

846. *Mr. Hoskins.*] You differ from Mr. Stayton? I do; and in my opinion this is not an engineering question.

847. Mr. Stayton having been the officer principally engaged in carrying out the Western Suburbs Sewerage Scheme, I presume you consider that he speaks with some knowledge of the subject? I am not so sure about that as regards the disposal of the sewage, which is not an engineering question.

848. Did you notice that he stated that he had visited a number of sewerage farms in England? Yes.

849. Did you notice also that he stated that in several instances they were not a success? I can quite easily believe that.

850. Mr. Stayton advocated what is termed a precipitation system, the sewage being treated with chemicals, and the effluent allowed to flow down the river, the solids being dried and sold as manure;—which system do you prefer? I prefer to follow nature, and adopt the sewage-farm system. If we merely follow in the footsteps of nature in this matter, we shall do very well.

851. Can you give me an idea as to which will be the most expensive scheme—to convey the sewage by pipes on to the sewage farm, or precipitate it and dispose of the effluent at the pumping-station? It is an old saying that the shoemaker should stick to his last, and I think I had better not go into finance.

852. I presume you are prepared to say that neither scheme would be likely to prove a nuisance to the residents of the locality if properly managed? I think I may say that.

853. Would you advise the Government to utilise that portion of land you saw yesterday for a sewage farm? Unhesitatingly.

854. *Mr. Trickett.*] Where do you think the effluent from the farm would go—it would come out near the steamers' wharf, would it not? The effluent would get away in two different modes—first, there would be a certain amount of oozing all along the face of the embankment into the water of the rivers; but apart from the oozing, if subsoil drains are cut, a large body of effluent will flow directly through the drains.

855. Do you think that that would be at all objectionable? I am sure that it would not; and I have reason for saying that, because the analyses of the effluent at Botany pass through my hands every quarter, and every time I have visited the farm I have had samples of the effluent procured, so that I know exactly what I am talking of.

856. At times of heavy rain there would be a general overflow from the farm? Yes; but the area of the farm

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farm is so enormously greater than is needed that, even in times of storm-water discharge, it would be far more than equal to the occasion.

857. The departmental proposal is not to utilise the piece of land which you examined so carefully, but to take possession of the big swamp which is to be filled in for the purpose? I think they are right.

858. Do you think that it can be made effective for the purpose of dealing with sewage matter? If it be filled in with the material we saw yesterday at Neutral Bay, I think it will do admirably. I should like to give my reasons for that. First, the material is a coarse sand, which everyone admits is one of the best possible materials for the purpose. Then the presence of a salifiable base is necessary for the activity of the organisms which destroy the sewage. To form that base lime and magnesia are both present in the Neutral Bay sand, for that sand is full of the debris of broken shells. At first I was rather apprehensive as to the salt in the sand. People who have built houses know that if a salt-sand has been used it keeps oozing out of the walls for many years, and consequently honest builders will not use it. I thought that the salt might stick in this sand so long as to impair its usefulness, but I do not think that now, because upon digging down 12 or 14 inches, and taking mouthfuls of the sand, I could not detect the slightest saline taste, and I do not think the amount of salt which I could not taste would be in any way hurtful to these organisms. Finally, when the farm is brought into operation, as I hope it will be, I think the sand ought to be levelled, and a little loam spread over the surface. When you bake a loaf of bread, you put in some yeast as a ferment; and so when you are going to use the sand to ferment the sewage, you ought to sprinkle a little loam over the surface to bring the sand into activity. Everyone who uses such sand-filters knows that for the first ten days or so, according to the temperature, they do not act. They only come into operation gradually; but you may bring them into operation more quickly by sprinkling a little loam over the surface of the sand. I have no doubt that under these circumstances the lower portion of the reclaimed land would be far better suited for the purposes of a sewage farm than the upper portion would be. If you had to procure the site now, I would say, "Do not buy the upper portion, but stick to the reclaimed land."

859. The Department propose to put about 5 feet of sand upon the land? That is above the highest spring tides? Yes.

860. Would that be sufficient for purification purposes? Amply sufficient. If you count the number of organisms that inhabit the soil you will find them mostly in the first few inches. As you get deeper down they become fewer and fewer, until about 5 or 6 feet down there are practically none left; so that if you have 5 feet of soil, you have the necessary thickness. Any soil deeper than that acts merely as a filter, and there is no use whatever for a filter there. A filter can only remove solid particles, which, in this case, have been left high up in the soil.

861. You do not seem to attach very much importance to the effect of the soil in purifying sewage matter? If you take soil and sterilise it, that is to say, if you heat it so as to destroy the organisms to which I have referred, or if you chloroform it so as to suspend their action, it has no longer any purifying effect upon sewage. It is because of the organisms in it that soil is an active agent in purifying sewage.

862. *Chairman.*] Are these organisms in the soil or in the sewage? They are in the soil. They cover the face of the earth, sewage or no sewage.

863. *Mr. Trickett.*] I asked that question because Mr. E. B. Price, who was before us the other day, stated that they had found from experiments at Croydon, in England, and in other places, that strong sunlight had a good effect in the purification of sewage? So it has, and for a very good reason, namely, that the organisms have their best effect at about the temperature of our blood, or at 96 degrees Fahrenheit. When the sun beats upon the surface of the land it warms it up and the nearer it is to that temperature the more perfectly and quickly do these organisms perform their work.

864. The sun does not draw up the offensive smell and spread it round; it rather keeps it down? Yes.

865. It works with the organisms in the soil? Yes; that is so.

866. The hotter the temperature the better for the disposal of the sewage? I do not say that, because the temperature must not be too high. The best temperature is 96 degrees Fahrenheit.

867. I believe that in Croydon, England, there are houses all about the sewage-farm? So I believe.

868. Therefore, it is not likely in this climate, where the average temperature is higher, that a sewage-farm, if a nuisance at all, would be so great a nuisance as it would be likely to be at Croydon? From that point of view, there would be less nuisance here than there. Of course, it must be remembered that I am always assuming that the gross particles will be screened out first. If you have pieces of faeces so big that they will not go into the interstices of the soil but remain on the surface, they cannot be readily dealt with by the organisms; but I assume that the gross solid matter is taken out first.

869. The process of pumping it will probably disintegrate the sewage very much? No doubt, but the big pieces should be screened out first as they are at Botany.

870. I have read in quite a recent number of the *Scientific American*, that they are adopting a precipitation scheme for the sewerage of Glasgow, could you tell us why they are doing that? I do not know anything about that particular scheme; but I think every one is agreed that where you have a sufficient area of suitable land you should adopt the sewage-farm system. If you cannot adopt that system you must fall back upon an artificial process.

871. Then I understand that of the three systems, filtration, precipitation, and farm irrigations you, if the circumstances were favourable, would advocate the farm irrigation? I should not divide them as you do. To use my own words, what I should recommend would be the combination of intermittent downward filtration with sewage farming proper. That is what we have at Botany.

872. There appear to be two systems of farming—broad-acre farming and filtration? Yes, broad irrigation and intermittent downward filtration.

873. In this instance, you recommend downward filtration? Intermittent downward filtration with surface cropping as at Botany.

874. But suppose they went in for broad irrigation? That would require broad acres.

875. And this portion of land would not be suitable? Do you mean the upper or the lower portion?

876. The lower portion? It would be suitable enough, but it would be wasting the land, because you do so much better with the downward filtration. If you can get the downward filtration by all means adopt it. Intermittent downward filtration is very much more efficient than broad irrigation, broad irrigation will not work for more than 100 to 200 persons per acre, whereas intermittent downward filtration at Webb's grant

grant is at this moment working for 1,500 persons per acre, and I have authorities who show that it might work for as many as 3,500 persons per acre. You see that intermittent downward filtration is so much more effective than broad irrigation, that when you can get it, you should by all means adopt it.

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877. Do you think there is any fear of intermittent downward filtration so clogging and fouling the earth as to make it objectionable in time? I have already explained to you how the organic matter is destroyed. If it is destroyed it cannot remain in the soil, and if it does not remain in the soil there can be no clogging. For many years I lived not far from one of the oldest sewage farms in the world—Craigentinny, near Edinburgh. That farm has been in existence for over a century; but there is nothing to show that the inhabitants of the locality suffer from it. I have visited it frequently.

878. *Chairman.*] You were in robust health when living there? I was.

879. *Mr. Trickett.*] I suppose you have not studied the question of the separate and the partially separate system? I have studied it in a general sort of way; but the separate system is now so inapplicable to Sydney, that it is no use considering it further.

880. That is rather a reflection upon the three professional gentlemen who recommended the adoption of the separate system; but still it is more an engineering question? It is an engineering question.

881. *Mr. Hoskins.*] Do you not think it necessary in order to ensure the conveyance of all the solids on to the farm, that a good flow of water should be sent through the pipes? Yes; the more water the better, for this reason, that you will have such an excellent sewage farm that you can dispose of the whole of it. If you had not a good sewage farm, a surplus of water would be a nuisance; but in this case it will be no nuisance.

882. *Chairman.*] The filter will be so good? The filter will be so good. I think it would be wasting money to adopt the separate system. At all events, so far as I am concerned, it is chiefly a question of cost, and therefore an engineering matter.

883. *Mr. Trickett.*] You would go in for what is known as the partially separate system? No; I would go in for the holus bolus system.

884. *Chairman.*] You mean a system similar to that adopted in Sydney? Yes; but I would not send the sewage out into the ocean.

885. *Mr. Neild.*] You spoke of the very small amount of organic matter to be found in the soil at Webb's grant; do you not think that the small quantity observable there is very largely and indeed chiefly due to the cropping of the ground? I think it is—I think it is the small rootlets that have been left in.

886. That constitutes the organic matter? I think so very largely.

887. You think that all the solid matters in the sewage have disappeared? Practically they have all gone.

888. Has that disappearance been due to the sandy nature of the soil or to the growth of vegetation upon the ground? No; it is due to the presence of the organism known as *micrococcus nitrificans*. Your question was framed, I understand, to elicit my opinion as to the share vegetation has in the process?

889. Precisely? Vegetation is not necessary at all. You may have the sewage perfectly destroyed without the growth of the higher plants at all, but vegetation is a help.

890. Have you gone into the financial aspect of cropping sewage-farms? I have.

891. Do you think, in view of the statement you have just made, that you can get rid of the sewage without growing crops upon it, that it is desirable, in the interests of those who have to pay for the farm, to grow crops upon it? Yes, I think it is, because, although you do not get a very great return from the crops, the cropping of the surface helps the work of the organism. The organism and plants have been associated from the beginning, ever since soil was soil. The one helps the other, so although you can have the presence of this organism doing its purifying work without the growth of the higher vegetation on the land, if you have them both, they assist each other.

892. In the case of Webb's Grant, is it not a fact that there is a considerable belt of waste land between the beds on which the sewage is discharged and the water channels that receive the effluent? I do not remember the contour of the land sufficiently; but if there is that belt it is not necessary.

893. Would not the existence of a belt of that kind have some influence upon the purity or impurity of the effluent? It would, by lateral filtration; but if your vertical filtration was sufficient you would not want it.

894. But can you have vertical filtration where, as in the case of the proposed farm, there is, at best, but 5 feet of sand above the high-water level? I have said that the organism lives in that 5 feet, and that vertical filtration below that is not necessary.

895. Will not the presence of water up to 5 feet from the surface compel the transit of the effluent horizontally rather than perpendicularly? Yes; it will take a sloping course outwards.

896. Then you can scarcely, by any possibility, get the same amount of natural filtration at Parramatta that you get at Webb's Grant? Why not?

897. Because at Webb's grant the land is much higher above the water level? Not very much. I do not think it is much more than 8 or 9 feet above the water level.

898. Is not the bridge you spoke of just now quite 14 or 15 feet above the water? Yes, but then it is a good many feet above the land at Webb's grant.

899. That is just where you land, but on the north-western portion of the land the tramway practically traverses the field level? Yes.

900. Having on several occasions visited the farm at Webb's grant, do you know what depth of soil or sand there is free from underlying water? I have this knowledge, that at the place where the effluent is taken, a drain-pipe has been put in vertically. If you look down at the bottom of that pipe you will see water standing there, and without having actually measured it, I should say it was about 4 or 5 feet below the surface.

901. You have spoken of the favourable nature of the soil on the 22 acres and have carefully analysed it, but the tests you applied were necessarily applied to infinitesimal quantities? No. I took 50 grammes at a time. That was only a portion taken out of big lumps which I carried away in my pocket.

902. Is not the fact painfully present in the minds of most colonials that analyses of soils and minerals are scarcely ever borne out by practical results? It all depends—whether there is a mine to be floated, for instance; but the soil we are speaking of was faithfully chosen, faithfully mixed, and faithfully analysed. I think you may depend upon the results of these analyses.

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903. You notice that the Board of professional gentlemen appointed by the Minister to report upon this matter—Messrs. Bell, Chamier, and Wardell,—were unanimous in their condemnation of the 22 acres, and rather than attempt to use that land, they were prepared to reclaim the land south of the proposed farm, and facing Duck River? Yes; but I do not say that the upper portion of the land was better than the lower portion. The lower portion when finished will be very much better than the upper portion; but the upper portion is not so bad as to be useless.

904. You think that all that is necessary to be done to the upper portion is to plough it? I think so.

905. It is not necessary to put in deep drains, and bundles of ti-tree, filling it up with sand, as proposed by the Board? That depends upon the quantity of sewage you propose to put on the land. If you are only going to put a small quantity upon it, you need not make any drains; but if you put a large quantity of sewage upon it, you must drain it. But if you reclaim the 42 acres this upper part will not be required for many years to come. That is why I said that I would not buy the upper portion at all, because the lower portion will be better, and would be far more than ample for the requirements of the district for many years to come.

906. Will there not be a tendency for the effluent from the farm to be retained by the tide at the junction of the Duck and Parramatta Rivers? No; because the body of water there is very considerable. The flow of the tide up and down will take the effluent away.

907. You do not anticipate that the vertical soakage of the effluent would create a nuisance in the vicinity of the steamer's wharf? No.

908. Any fears on that score may be set absolutely aside? Yes.

909. *Mr. Wall.*] Would the discharge of sewage on the farm tend to increase or decrease the micro-organisms you have been speaking of? It would increase them; because it would supply food to them. There will be a time when the land will be absolutely teeming with them, and it will stay like that for centuries.

910. Then, the purifying power of the land would be increased by discharging sewage upon it? Yes. For the first week or ten days after the opening of the farm the land would not be of any use for purification purposes. It will come gradually into use, and will remain at a sort of level ever afterwards.

911. Do you think any bad effects are likely to arise from the consumption of vegetables grown upon the farm? There is not the slightest evidence that bad effects have ever so arisen.

912. The whole of the organisms would have been destroyed? They remain below on or in the ground.

913. At Webb's grant a great quantity of vegetables are inundated with sewage? I do not think so. If you notice, the sewage runs in the furrows between the vegetables, so that it gets into the ground without touching the leaves.

914. Supposing the sewage did touch the leaves of the vegetables, would it be undesirable to dispose of them by selling them? Not necessarily, because the organisms which produce disease speedily die when they are exposed.

915. *Mr. Collins.*] Did I understand you to say that you were residing near a sewage-farm near Edinburgh? No; I did not say that I resided near it, but I passed it frequently.

916. What system was in vogue there? Broad irrigation.

917. What was the area of the farm? I do not know, but the farm was a large one.

918. Did it take the sewage of Edinburgh? It is between Edinburgh and Leith. There is a great area of sea-sand there, just as there is at Webb's grant. The sewage is simply run over the land, which is kept in crop.

919. What do they do with the crops? They feed cattle on them. I do not think they grow anything but grass.

920. Were there any complaints about that farm? None whatever.

921. *Mr. Ewing.*] You have told us that sewage is simply water with a large quantity of organic matter in suspension? I did not say that. Sewage is water with a large quantity of organic matter in suspension and solution.

922. We have no cholera here, but we have bacterial disease—for instance, typhoid? Yes.

923. Typhoid is a bacterial disease? Yes.

924. Is diphtheria? Yes.

925. Is tuberculosis? Yes.

926. We have plenty of these diseases, the germs of which are found in the dejecta of the patients? Say that they are found in the patients. Tuberculosis may, in the latter stages be found in the dejecta.

927. Say in the sputum? In the sputum.

928. Or the dejecta? Say in the excreta.

929. At any rate they come into the sewage? Yes.

930. Water is a great distributor of germs? Yes.

931. Therefore the bacteria get as far as the sewage farm? They may.

932. They either get as far as the farm or disappear in the canals leading to it? Quite so.

933. Are bacterial microbes likely to leave water? No; but if the water is left until it dries up—

934. I wish to leave that aspect of the case until we get to the sewage-farm. These germs get as far as the sewage-farm? Perhaps so.

935. I understand that microbes if they leave the water must attach themselves to sticky walls; they cannot float in the air? No. They cannot rise into the air of their own accord, so to speak.

936. If you cover the walls of a hospital with glycerine, the air would be practically free of them? It might be.

937. The workmen employed in sewers are not affected by them, because they are under their feet, they do not rise? It may be. But suppose we stick to the sewage-farm.

938. I want to ascertain the theory on the subject. It is a fact that dogs and cows take some of these bacterial diseases—diphtheria for instance. The udder of the cow may show evidence of diphtheria? I would not like to answer that question off hand.

939. Would you be astonished to hear it? Not a bit, let us assume that it is so.

940. Well, let us imagine that these bacteria or microbes have got as far as the sewage-farm, it is likely or possible that they may be conveyed on to the leaves of vegetables, take lettuce for example? It is quite possible, but it is not likely.

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941. Why not? Because the sewage is run in furrows between the ridges on which the vegetables grow.
942. But if they happen to flood the land with sewage, in which, from your own admissions, there can be no doubt there are microbes, the microbes would come in contact with what is to become food for human beings, or at any rate cows? Yes.
943. It is quite possible that they might then be introduced into the dairies and into the system of human beings; that is the theory, is it not? I am not going to say yes or no, because, for one thing, I did not say that they would be alive when they reached the sewage-farm. The conditions for the life of these lower organisms in the human body are such that it does not follow that when they leave it they remain alive. Some do, and some do not.
944. You say that, although they get to the sewage farm, and by bad management may get on to the food of cows, and diphtheria may appear among the people who drink the milk of those cows? I did not say that.
945. If the sewage is put upon the cow-feed, which at a certain period of the year is cut and sold to dairy-men, the microbes are there, and the cow may get them into her system, so that the person drinking her milk may contract a disease such as typhoid? There are such a lot of links in the chain, all of them connected by "may" and "if," that I cannot say. If you always argued like that, you would never eat an apple or a pear, and certainly not an ordinary salad. The one clear statement I wish to insist upon is that so far as I know no disease has ever been known to be communicated by vegetables grown on such farms.
946. The microbe seems of such infinite importance sometimes, while at other times he is of no importance at all? There are different kinds of microbes as there are races of animals. There are friendly microbes, and unfriendly ones.
947. *Chairman.*] The unfriendly microbe is presumed to be dead when it reaches the sewage-farm? If not dead when it gets there it very soon dies, in most cases, I think.
948. *Mr. Ewing.*] You say that these microbes get as far as the farm, and there they meet what you might call the bacterial scavenger, the friendly microbe, who is friendly because he attacks dead things, while the other is unfriendly because he attacks living things;—that is your theory? We will put it in this way. The conditions which are favourable for the one are unfavourable for the other, so that the friendly microbe goes on increasing unceasingly, while the other dies.
949. The sewage farm is a filter, and the microbes are either left on the surface or they get below the surface and die, because there is no oxygen there? We will not say that they die because there is no oxygen; we will say that they die.
950. There is no reason for saying that they can live without oxygen? There are two divisions—those which must have oxygen, and those which must not—the aerobic and the anaerobic.
951. You have told us that at 96 degrees Fahrenheit they live well enough? That is these friendly microbes. Your disease germs, your pathogenic organisms, if they are not dead when they get to the sewage farm generally die soon afterwards. The cholera organism, for instance, which you would think had a great amount of vitality, is a very tender organism, and if it is exposed dry to the air for an hour only it is done for.
952. Is it a fact that some microbes—unfriendly microbes—have been found to live five and six months when their environment has been satisfactory? Yes, and much longer than that.
953. They live in jelly for instance. You have not referred to any process which is likely to kill them in their passage down the sewers? No; but if you were under water for five or six minutes, what would you be at the end of that time?
954. But I am not a microbe? But the conditions of your life and its life are not so very dissimilar. The microbe which lives very well in my body, if you take it out and put it into sewage-water may very soon die.
955. Does being carried through the water kill him? It would kill a vast multitude of microbes. It takes two hours for the sewage to get down to Botany.
956. You are aware that the wells in India are very much polluted by cholera germs; these germs live in the water, so it does not appear to me to be clear that microbes are necessarily killed by water? I did not say that they were. I have said that there are microbes and microbes.
957. But you have described the cholera microbe as not having much vitality;—why then should he live after getting into an Indian well? Each microbe has its own conditions of vitality. The cholera microbe is very tenacious of life under proper conditions. It will live in water containing organic matter; but put it into pure water and it dies. If you put cholera microbes into pure running water, they will be dead in a short time; but if you put them into filthy water they live and multiply. In India the natives wash themselves and their clothes in the water of the tanks, and even perform their daily needs of nature in it, so that these tanks become beautiful places for the cultivation of microbes.
958. *Chairman.*] Could not the same thing be said of ordinary sewage water? Yes. The cholera microbe would get in there, and does get in and lives and multiplies there.
959. *Mr. Ewing.*] Suppose a micro-organism—one of these bad or injurious microbes—got in, and was flooded upon vegetable food, is there any reason why he should not get into the human system again? If the human being got the food sufficiently early there would be a distinct danger of it; but the human being either does not get the food, or if he does he probably does not get it sufficiently early.
960. As a scientific man, do you depend upon your sight and smell for detecting bad things;—would you see a microbe that would take your life on a piece of lettuce? Of course not.
961. Your ordinary senses are valueless to you for that purpose? Not entirely. As a rule, things that smell badly are injurious; but that is not the case with everything. Cheese, for instance, smells very badly at times, but I do not think that it is noxious. The sense of smell is a natural protection against noxious things, but it has its limit, beyond which it is, of course, useless.
962. There is no device that the ordinary man of the world can take to protect himself; his senses are valueless to him in dealing with things of this kind, and yet he has only got his senses to depend upon? No man depends upon his senses only. For instance, I very seldom eat a salad, but when I do I like to know where it comes from. I do not merely look at the vegetables and say that they are clean and fresh, but if they come from a Chinaman's garden I steer clear of them.
963. Why? Because it is said, and I believe it is true, that some Chinamen manure their lettuces with the offal from the slaughter-houses, and other organic material. They put the stuff into a tank, and after it has putrified a sufficient time they pour it over the lettuces. Solid matters such, for instance, as hydatid eggs, are very likely to get caught between the angles of the leaves, so that when you eat the leaves you might swallow the eggs, and duly get hydatids.

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964. *Chairman.*] The leaves are watered instead of the roots? Quite so. When I buy lettuce to make a salad I take a brush and scrub the leaves below a water-tap; then I eat it with pleasure. What Mr. Ewing is driving at is this: that disease-producing organisms, if they do get down to the sewage farm alive, are not very likely to get on to the vegetables, and are certainly destroyed by the action of the friendly microbes in the superficial layers of the soil.

965. You would have no objection to eating vegetables coming from the farm? None whatever.

966. Would you drink the effluent? Not as a beverage.

967. *Mr. Humphery.*] It is quite inoffensive? It does not smell, and it has no colour; but there are lots of things that have no smell and no colour which are not good.

968. *Mr. Ewing.*] We have had it in evidence that a sewage farm in a warm climate is more satisfactory than a similar farm in a cold climate, because it can sustain more vegetation; you say that you do not agree with that reason;—do you say that a sewage farm is likely to be better managed in a warm climate than in a cold one? Certainly.

969. Is it less dangerous in a warm climate? Yes; because it is likely to be more efficient.

970. Why? First, because of the temperature. Owing to the higher mean temperature the friendly microbes are more active; secondly, owing to the higher temperature, vegetation continues active all the year round, because you have no real winter. In a cold climate you have frosts which crack the ground, and the unpurified sewage is very apt to go through these cracks untreated. In a climate where you have no frost, and the vegetal life is continuous, the probability is that the sewage will be dealt with quickly and completely.

971. You have stated that there would not be likely to be so many germs left undestroyed in a hot climate, because the higher temperature brings about a better growth of vegetation, and is satisfactory to the friendly microbes? The conditions which are good for the friendly microbes may also be good for other microbes.

972. Where you have your two conditions at the best, at places like the mouth of the Ganges, for instance, you have bacterial diseases endemic, notwithstanding the warm climate and profuse vegetation? But then there are other conditions. I only mention the conditions pertinent to the circumstances of the case. I am dealing with Webb's Grant sewage farm, not with the question generally.

973. You give the favourable conditions as to growth of vegetation and a high temperature? Yes; that is, for a sandy soil.

974. Is it not a fact that cold weather renders these organisms inert? No; it does not, but frost will. If you freeze them they become inert. Short of being frozen they go on working, though they do less and less as the temperature is lowered.

975. Get it low enough and you kill them? Get it low enough and keep it low enough for a long enough time, and the probability is that you will kill them. If you freeze these micro-organisms and then thaw them within a reasonable time, they are just as active as ever.

976. A typhoid microbe would not be? Provided they have not been too long frozen. It has been proved that typhoid has been conveyed by means of ice; therefore, it does maintain its vitality under freezing.

977. Yet it is generally supposed to be killed by cold? But because some retain their vitality, it does not follow that all retain it. One microbe after freezing might remain alive, and it might be quite enough to lead to the disease.

978. With regard to the difference between a cold and a hot climate, at the mouth of an Indian river it is warm, while the conditions are similar in regard to rivers entering the China sea; but these rivers contain cholera germs every summer, which die out in the winter; they seem to live only for half the year? Yes.

979. Therefore, in a cold climate the germs are likely to be inert for half the year? Yes; but the other conditions here are different, and I do not think you can properly make any comparison.

980. The point is that cold weather renders the germs inert, but still it is not a dominant thing? It is not absolutely dominant.

981. *Chairman.*] Are the friendly microbes a recent discovery? I think they have been discovered within the last seven or eight years.

982. How is it that while inquiries into the disposal of sewage have occupied previous Committees, this is the first time that the beneficent work of the friendly microbe has been made so prominent? That hinges upon a question put by Mr. Hoskins. I said that the matter of the disposal of sewage was not an engineering question. You have had engineers before you on previous occasions, but never a biologist. Engineers should merely carry out what the biologist teaches, in the actual disposal of the sewage, though it is entirely the business of the engineer to collect that sewage.

983. The general impression in regard to sewage farms has been that the vegetation is the prime cause in disinfecting and preventing injurious results? That is an entire mistake.

984. But it has been the general idea? Quite so. It is these organisms which prepare material for the plants. Hitherto people have believed that the plants could take the material up themselves, but now it would appear that they cannot. If you put a plant into sterilised soil it cannot grow, it only begins to grow when the friendly organisms come.

985. How do these organisms get into pure sand like that which you have at Neutral Bay? These organisms are floating about in the atmosphere. They are blown about by the wind, and a very few falling upon suitable soil will germinate and begin to multiply. Therefore, I said, sprinkle a little loam over the soil, so as to get the first seedlings of these organisms.

986. *Mr. Humphery.*] At Parramatta there are 42 acres of land to be built up, at very considerable cost, by the addition of some 5 feet of sand, which is to be obtained at Rushcutters' Bay? I am not aware of its being done at great cost. I understand that the work is to be done in any case. The sand may as well be deposited there as taken out to sea.

987. I understand you to say that there are at present 22 acres which could be utilised by ploughing for the reception of sewage? That is so; but that land, although it might be utilised, would not be so suitable as the lower portion when finished.

988. Would it be suitable for the immediate reception of sewage, assuming the Committee recommended the scheme placed before us? Yes; provided you did not put too much on.

989. What quantity of sewage could safely be discharged on to that land? Any answer I might give would be mere opinion.

990. What is your opinion? I should think that that land might receive the sewage of 500 people to the acre.

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991. So that the 22 acres would receive the sewage of about 11,000 persons? Yes; the population of Parramatta is about 14,000 I believe.
- 992-93. We have been told that it is 12,000? Well you could nearly treat it all on the upper portion.
994. If you took a considerable time to prepare the 40 acres, the 22 acres could be immediately utilised. Would they be sufficient to take the drainage of Parramatta for a period of years? Yes; I think I would try the experiment; but the evidence shows that in the ordinary course of events the 40 acres could be filled in with the proper material to the proper level within 12 months. You must finish your reticulation before you can use the farm, and therefore the filling in is likely to be finished as soon as you are ready to use it. The sooner the land is filled in the sooner it will be washed by the rainwater, and therefore, the sooner it will become ready for a sewage farm.
995. Knowing the conditions, what do you recommend, that the 22 acres be immediately used, or that the 42 acres, which are at present subject to tidal influence, should be built up with sand to a height of 5 feet above the water-level, and made use of? I recommend the filling up of the 42 acres immediately, so that when the reticulation is complete it may be used for the purpose of sewage purification. I would not use the upper portion of the land at all, for it is not needed.
996. Knowing all the conditions under which it is proposed to make the sewage farm, and having read the evidence, you are of opinion that it will be better to use the 42 acres than the 22 acres? Clearly.
997. So that the 22 acres may be left alone until it becomes necessary by reason of the increase of population to extend the farm? Quite so. I would like to add that in the evidence something is said about the better kind of crops which you will get from the upper portion of land, but I have already pointed out that that really does not matter, because a sewage farm is not a commercial thing. One would not think of starting a sewage farm in order to make a fortune, and the crop grown should be regarded rather as a help to the process of purification, than as a means of making money.
998. With regard to the effluent that will flow into the Parramatta River, is there the slightest probability of its increasing the impurity of the water? I think that it will increase the purity of it, because the effluent will probably be nicer than the stuff that is there already.
999. *Mr. Davies.*] Yesterday you visited the locality of the proposed farm, and followed the proposed pipe-line, which is close to the present tram-line? I did.
1000. You saw the fascine embankment, about 2 feet high, which has been made by the Department? Yes.
1001. And you saw the embankment all along the tram-line;—I suppose you know that that is to form the embankment of the proposed farm? Yes.
1002. At present, it is about 2 feet high, and runs close alongside the tram-line right down to the steamers' wharf? Yes.
1003. You are aware that the Department propose to raise that embankment to about 5 feet above high water? No, they are not going to raise the embankment; they are going to raise the filling in behind the embankment.
1004. Are you not aware that they are going to raise the whole face of the farm 5 feet above spring-tide? I think it would be useless to do that, and I imagine that you are mistaken.
1005. You are aware that the land at the present time, is only 18 inches above high-water mark at the highest point? No; it is nearly 2 feet.
1006. It would be necessary to put 3 feet of soil upon that? Yes, 3 feet of additional soil behind the embankment.
1007. Not on the face of it? No; they are going to make a batter. The fascine bank is as high as it is going to be.
1008. Will there not be a large amount of percolation through this batter? No; I forget what the critical angle of sand is, but I think the batter will extend about 5 feet behind the embankment.
1009. Will not the effluent draining through the batter cause an injury to the tram-line? No, because the sewage farm will not be carried right up to the very edge of the land.
1010. Do you not think that the farm would greatly injure the adjacent property? No, not in the slightest degree.
1011. Have you read the report of the Commissioners who inquired into this scheme? No; I have not seen it, and never even heard of it.
1012. You are not aware that their report caused this matter to be again referred to the Committee? No.
1013. You have already been told that the Commissioners have recommended the separate system for the treatment of sewage? I do not think I have been told that.
1014. If they have recommended the adoption of the separate system for the sewerage of the town of Parramatta and the Government institutions there, because by keeping out the storm-water they will be able to reduce the size of the pipes, and in that way the cost of the work, do you think it would be wise for the Department to adopt their recommendation? You tell me that three gentlemen have made a certain recommendation, and ask if I approve of it. Before replying I want to know who the men are, what their qualifications are, and what the evidence before them was.
1015. They took no evidence themselves, but merely dealt with the evidence taken by this Committee during a previous inquiry. Here is a copy of their report? The Commissioners say, "But as all the conditions necessary to make sewage farming successful are present in the case at Parramatta, we found no difficulty in arriving at a unanimous decision in its favour, as we consider it the simplest, cheapest, and best method of meeting the requirements." So you see they are distinctly in favour of the sewage farm. The other question dealt with by them is an engineering matter, a question of pounds, shillings, and pence. If it is cheaper to have the separate system, I say have it; if it is cheaper to adopt the other system, adopt it.
1016. You believe that the separate system would be more effective? That is an engineering matter. I think I had better keep within my own province. It does not matter much to me how you get the sewage on the farm; it does matter how you treat it there.
1017. *Mr. Hoskins.*] You say, take as much water as you can? Yes; on the whole, dilute sewage is better than concentrated sewage.
1018. *Mr. Davies.*] You have several Government institutions at Parramatta under your control? No; my predecessor had; but he was Inspector-General of Insane.
1019. You are aware that there are a number of public institutions at Parramatta? Yes.
1020. Have you a knowledge of how they treat their sewage? Only a general knowledge. 1021.

- T. P. A. 1021. Do you regard the treatment as effective or defective? I do not know enough about it. They do not come under me at all.
- Stuart, Esq., M.D. 1022. You have told the Committee that you approve of this scheme generally, so long as the sewage is not put on to the beds too frequently? Yes, if it be carried out properly according to recognised principles.
- 21 Feb., 1894. 1023. Do you think that 42 acres will provide an effective sewage farm for a population of from 12,000 to 14,000 people? Yes, and for four times that number.
1024. You think that the people of Parramatta can bear the capital cost, together with the interest on the cost of management? I have nothing to do with that.
1025. Have you any knowledge of the probable cost? None whatever.
1026. Where there is abundance of land, you give the preference to the system proposed to be adopted at Parramatta? Certainly.
1027. You believe that there would be no possibility of injury to public health if this scheme were adopted? I believe that no injury would arise.
1028. There would be no inconvenience? How could inconvenience arise?
1029. From smells? There would be no smells.
1030. You must remember that hundreds of thousands of people travel on the railway line not very far from the farm? They would not be affected.
1031. The farm would not be offensive, nor would it be injurious to health? Not at all. I should like to hand in the analyses to which I have referred, and I should be glad to write out a distinct statement of my views on this subject, because questions and answers are sometimes difficult to follow, and not very satisfactory, and, of course, I have had only a short time to prepare myself.
1032. *Chairman.*] I think the Committee are very well satisfied with the way in which your evidence has been given; but if you wish to supplement it you can do so? I do not wish to supplement it; but I merely thought of preparing a carefully-written, properly-balanced statement, if it would make my views more clearly understood.

THURSDAY, 22 FEBRUARY, 1894.

Present:—

JACOB GARRARD, Esq. (CHAIRMAN).

The Hon. WILLIAM HENRY SUTTOR.	WILLIAM CHANDOS WALL, Esq.
The Hon. JAMES HOSKINS.	WILLIAM MCCOURT, Esq.
The Hon. FREDERICK THOMAS HUMPHERY.	JOHN CASH NEILD, Esq.
The Hon. JOHN DAVIES, C.M.G.	EDWARD WILLIAM O'SULLIVAN, Esq.
The Hon. WILLIAM JOSEPH TRICKETT.	CHARLES COLLINS, Esq.
THOMAS THOMSON EWING, Esq.	HENRY DAWSON, Esq.

The Committee further considered the proposed Sewerage Works for Parramatta.

John Moore Smail, Esq., M.I.C.E., Engineer for Sewerage, Metropolitan Board of Water Supply and Sewerage, sworn, and examined:—

- J. M. Smail, Esq., M.I.C.E. 1033. *Chairman.*] You are engineer for sewerage under the control of the Metropolitan Board of Water Supply and Sewerage? Yes; I am acting engineer for the Board.
- 22 Feb., 1894. 1034. The sewage farm at Webb's grant, Botany, is under your care? Yes.
1035. *Mr. Trickett.*] On a former occasion you gave evidence before this Committee in regard to the proposed sewage scheme at Parramatta. You were then favourable to the proposal;—do your opinions remain unchanged? Yes.
1036. You still think that of the various processes in vogue for dealing with sewage which would be available at Parramatta the irrigation farm system is most desirable? Yes, the sewage farm system.
1037. Have you had charge of the Botany sewage farm from the beginning? Yes.
1038. Had you anything to do with preparing plans for it before the farm was started? Yes, but the beds were laid out by the late Mr. Oxley.
1039. The whole of the drainage upon the Botany farm was under your personal direction? Yes, I carried out the whole of it.
1040. At the start I think some doubt was expressed as to the size of the reticulation pipes being sufficiently large to carry off the drainage from Surry Hills? Yes; I believe there was some stir about the matter.
1041. What is the size of those pipes? The smallest size for street sewers is 9 inches.
1042. They are reticulation pipes connecting with the main sewer? Yes.
1043. Have they answered all requirements? Admirably.
1044. Do they receive storm-water as well as sewage? No; I eliminate the storm-water as much as I can.
1045. What proportion of storm-water goes into them? We calculate that on the southern slope about one-fourth is sewage, and three-fourths storm-water.
1046. How do you regulate the quantity of storm-water—by taking only the roofs, or by excluding the roofs? We take the backyards and the back roofs of the houses; but even that we throttle as much as we can.
1047. Do you think it desirable to cut off all the storm-water from the sewerage system? Decidedly not. Your question leads up to a vexed subject which has been debated for years.
1048. Which is the best system—the combined or the separate system? The separate system has been split up into the partially-separate system, which we carry out, and what some faddists call, the absolutely separate system, which takes nothing but slop-water.
1049. The question arises very distinctly here, because the three Commissioners appointed by the Government to inquire into the Parramatta scheme, say, in their report dated the 25th July, 1893,—that the total diversion of all rainfall from the sewers should be carried out? I could understand them saying, that there should be a total diversion of rainfall, that is, that the water should be cut off from the roads and streets; but certainly they do not mean to cut off the water falling upon the roofs.
1050. Yes, they do, as you will see if you read the last paragraph of their report, there they advocate the total exclusion of all rainfall? Their object in reducing the rainwater admitted, to the minimum quantity,

quantity is to lessen the cost of pumping; and then, too, the less water you have the smaller you can make your pipes. I think, however, that it will not be considered advisable for practical reasons to put a sewer down with a diameter less than 9 inches.

J. M.
Smail, Esq.,
M.I.C.E.

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1051. The Commissioners to whom I have referred were specially appointed to give the Government the benefit of their opinion, and, of course, it is entitled to considerable weight. I would point out that they say that by the exclusion of rainwater the cost of construction would be materially reduced, and also that the sewage would be much more valuable upon the farm if the rainwater were kept out? It is only in rainy weather that the sewage in a partially separate system would be diluted; under other conditions the two systems are alike. We have found out at the sewage-farm that the first shedding, as we call it, that is the first washing that comes down the sewer, is as filthy as the sewage itself.

1052. It contains washings off the streets? The washings from the yards and stuff taken out of the gutters, pigeons' droppings, and so on. That has been our experience at the inlet house, where we have had an opportunity of watching the sewage.

1053. Do you think the total exclusion of the rainfall, with a proper system of sluicing at regular intervals, would be desirable? No; I should say admit a small portion of the rainwater.

1054. With what object? To flush the drains.

1055. It is a very common remark at the time of heavy rain, "Oh, this will do a lot of good by flushing out the drains." The rainfall is admitted to the sewers with the object of flushing them? Yes.

1056. The Commissioners state in the last paragraph but one of their report that the exclusion of the rainfall will reduce the cost of the work by 25 per cent. Since then they have made the saving 20 per cent.;—do you think that their estimate is a correct one? I think that the proportion is a very large one; but I should not like to give an expression of opinion until I had seen the calculations. As a general principle, if you reduce the quantity of rainwater flowing into the pipes, you can reduce the cost of the larger mains; but I doubt if you can reduce the cost of the smaller mains, because, for practical reasons, it is not advisable to put down less than a 9-inch pipe.

1057. Unless there were a regular system of sluicing, is it not likely that the pipes would become foul? If no rainwater ever went into the pipes, you would have to provide flushing-stations, and supply fresh water to them from the mains.

1058. But if the rainwater were admitted, would you do without the flushing-stations? Yes; special ones. As a matter of fact, I use very little fresh water for flushing under the present system.

1059. At what intervals do you flush? In certain sections the sewers are flushed every week; but the system is so arranged that there is really no expense. You saw on the farm that by putting in stop-boards you could divert the water almost anywhere you like. We adopt a similar plan in the sewers. Each man has a section, and in the man-hole there is a groove cut down in which slides a board. When we want to flush, all the man has to do is to put down the board, and it backs up the water for, perhaps, a quarter of a mile. The men can tell directly when it is time to let go by watching the water rise to a certain point. The board is then pulled up, and the water runs along the sewer, flushing the lower section and cleansing the upper one.

1060. Have you any figures with you showing the increase of the population per acre served by the Botany farm since it was started;—when did it start? About six years ago. On the 31st December there were 34,816 people draining on it.

1061. How many were there at first? Six years ago there were no houses draining on to it.

1062. But I suppose the population has not actually grown very much? The whole of the district which would be served by the farm is not yet connected; but taking the houses already draining on to it, it serves a population of 34,816. The number will be greater at the end of this year, because more houses will be connected.

1063. What area of the farm do you use for treating this sewage? About 33 acres.

1064. Does that include the ponds or tanks, as you call them? Yes; that is the whole area. The population is about 1,024 per acre.

1065. It has been stated that the farm treats the sewage of 1,500 persons per acre? The population was made out at first on the area basis; but in this case I know the number of houses absolutely, so that I think my figures may be taken as correct.

1066. One thousand five hundred might be an over-estimate? Yes; but I daresay before the end of the year there may be 1,500 persons to the acre.

1067. At any rate the soil is quite capable of treating the sewage of 1,000 persons to the acre? Yes.

1068. If, during the next twelve months, the population increases to 1,500 per acre, will you utilise more land? I do not intend to increase the area. The farm is quite equal to treating the sewage of 1,500 persons per acre.

1069. What becomes of the water after going into the tanks if the tanks become surcharged and overflow? The sewage is let into the tanks by means of sluices, until there are about 2 inches of water on the ground. It is then cut off and filtered through the ground until, if it was put on to the upper bed, it sinks into the lower bed. There there is an effluent drain which, like an ordinary subsoil drain, catches the filtered water and discharges it into Botany Bay.

1070. The water ultimately oozes into Botany Bay? Yes; Botany Bay on the one side, and Cook's River on the other.

1071. The same process would take place on the reclaimed land at Parramatta? Yes; I presume so. When we started we were afraid to put in effluent drains, for fear that the filtration would be too rapid. The longer you suspend filtration the purer the effluent. At Parramatta the best way would be to put a margin drain round the fascine bank. That would intercept the water and discharge it into the river at two or three outlets, instead of letting it ooze through, as it would otherwise do.

1072. That would be a pipe-drain? Yes.

1073. *Mr. Neild.* A perforated drain? No.

1074. *Mr. Trickett.* Would it be very expensive? No.

1075. How far would the intervals be apart? The outlets would be 3 or 4 chains apart.

1076. How frequent would you have the inlets to the drain? There would practically be an inlet at every joint, because the drain would be so laid that the subsoil water running above it would filter through into the pipes, and flow along them until it met the main drain at the foreshore, from which it would discharge at the outlets into the river.

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1077. The drain round the edge would have to be slightly above high-water mark? It might be above high-water mark, but not necessarily so, because you could have double outlets to discharge either at low or at high water.
1078. But in that case, when the tide is up it would run in? No; you could have reflux-valves, and then when the tide was rising it would close the lower openings. We use these valves in the sewers, and there is no trouble.
1079. How are you situated at Botany with regard to the height above high-water mark? A portion of the land is absolutely below high-water mark, but it will all be reclaimed in the future. The dredgings from the river will be placed at the back of the fascine bank, and it will bring the surface 5 or 6 feet above high-water.
1080. Is all the land you are using above high-water mark—even the swampy tanks? Yes; it is all above high-water mark—that is, the portion utilized.
1081. How much is it above high-water mark? The bottom of the lowest tank would be 4 or 5 feet above high-water mark.
1082. How much would the bottom of the highest tank be? The top tanks, that is the filtering tanks, would be 8 or 9 feet above high-water mark.
1083. Though the lower tanks are continuously being made the receptacle of effluent water, do they still retain their property for purifying what goes into them? Yes, because we crop them occasionally to cleanse them, and aerate the soil. After we had flooded the lowest tank of all, we would probably not use it again for a fortnight, and as the water sinks through the soil the air follows it, and thus the ground becomes ready for another dose.
1084. I suppose in all sewage-farm schemes the intermittent system is generally carried out? Yes, and therein occurs the management. The ground would get foul if you were continually flooding it.
1085. How far is the sewage farm from the nearest populated place? Rockdale is the nearest township, and I should say that it was between 2 and 3 miles away. On the other side of the river is Botany village—it is not more than about a mile distant.
1086. Have you had any complaints from either of these places as to objectionable smells coming from the farms? The only complaint we have had has been from the Rockdale Council, and they were trying to find a smell. I went over the farm with the Inspector of Nuisances, who had been told that the people complained of a smell, and I suppose they naturally went to the sewage farm first.
1087. Was there a written protest from the Council? No; merely the statement that people complained. At Redfern, where I live, there is a smell worse than anything I ever experienced before. We have never had any complaints from Botany.
1088. You have never had any complaints followed up by legal proceedings, or anything substantial of that kind? Never since the farm was opened have we had complaints about it, except the Rockdale complaint, which I consider groundless.
1089. Could you tell us the yearly loss or gain from working the farm? We have to get rid of the sewage, and to prevent the farm from becoming a nuisance men must be employed there to dispose of it properly, by applying it intermittently to the various beds, and so on, keeping the farm clean. To help in this process of keeping the farm clean, and to employ the men, we use the land for raising certain crops. I think the expense of the farm last year was about £800, and the return from it, as supplied to me by the manager, was £333 9s. 11d. The difference between these two amounts is the actual expense.
1090. In estimating the cost of the farm, do you merely take the cost of keeping it going, or do you include the cost of any improvements that are made? Improvements in the shape of fencing would be included.
1091. And any enlargement of the area? No; that work is done by contract.
1092. *Mr. Neild.*] Would the £800 include the wages paid to the employees at the engine-house? No; only the cost of the farm itself.
1093. £800 then is really the expenditure on the south side of the river? Yes.
1094. *Mr. Trickett.*] It does not include the expense of the straining process? No; we keep the two accounts separate, so as to see how we get on with the farm.
1095. What is the expense of the straining? It comes to about £500; but I can let you have that accurately by referring to the pay-sheets.
1096. Have you ascertained what will be the probable expense of reclaiming the Parramatta site? No; I have not.
1097. You have not gone into the cost of the scheme at all? No.
1098. Do you think that that land, if filled in with material similar to that used at Neutral Bay, would be quite as effectual for the purpose of dealing with sewage as the land at Botany? Yes, if the place was properly managed. The whole thing depends upon that.
1099. Yesterday, a witness referred to the deposits of solid stuff upon the ground at Botany creating a nuisance;—would the same thing occur at Parramatta? No; I think not. The straining-basins, and in fact everything connected with the house on the Sydney side of the river, at Botany are necessary because of the syphon. If there were not a syphon the whole of the sewage matter would go straight on to the farm.
1100. *Chairman.*] Will not the pumping-station at Clay Cliff Creek act as a natural barrier against the solids? There they could introduce the system of aerating the sewage. They could force a current of compressed air through it, and so purify it by treating it with oxygen. That is the long process of river purification condensed into a short process.
1101. *Mr. Trickett.*] Is that not what Mr. Stayton advocates? I do not know what he advocates.
1102. He advocates that the system of purification should be adopted at the pumping-station? I do not say that it is absolutely necessary, but it could be done. The stirring up of the sewage will naturally free certain gases; but the sludge at Botany, you must remember, remains in the tanks for three weeks. At Parramatta you will have fresh stuff to deal with, and the sewage will be disposed of before decomposition has set in. Where they have a steam engine at work they could, with very little expense, force a current of air through the sewage, and so get rid of obnoxious smells.
1103. But under that system would not the sewage have to be treated in the open air? I have not looked through the plans; but I believe it would be treated in such a way as not to cause a nuisance.
1104. If some process, such as you recommend, is not adopted will not the pumping of the sewage render it very objectionable? If the sewage is allowed to remain quiescent for any length of time it would become

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become a nuisance; but I assume that it will flow on to the farm in a continuous stream, and so long as you keep it in motion it will not decompose,—that is, within certain limits.

1105. The offensive sludge at Botany lies there for two or three weeks? It is three weeks before the tanks are cleaned out. Such a small quantity of sludge is intercepted that it does not pay us to start the engine and clean out the tanks every week.

1106. Would it not be very little more expense if you had the trenches ready dug to receive the stuff, and covered it up at once, instead of allowing it to lie exposed to the air? I consulted the manager of the farm, who knows more about farming than I do, on the subject, and he said that he would require another man if the sludge were treated in that way. It would be right enough if we sent the sludge across every day; but under present circumstances, since he requires the sludge on each bed, it would have to be covered over in the trenches, and then dug out again afterwards. I have got over the difficulty to this extent, that we cover the sludge with a material of which the trade name is ozophone. It is animal charcoal, and really acts as a manure.

1107. Do you think the management of the Parramatta farm would be more expensive or less expensive than the Botany farm? I think it ought to be worked at very much less.

1108. *Mr. Hoskins.*] Including the cost of the pumping-station? No; I do not include the cost of the pumping-station. I call the pumping-station part of the scheme, just as the sewers are part of the scheme. *Mr. Trickett.* I take it, is speaking merely of a farm where the sewage is treated before going into the river.

1109. *Mr. Trickett.*] When a very heavy fall of rain takes place at Botany, you let the sewage go right into the river? No. What we do is this: The men know what is the proper colour of the sewage—though I have an automatic gauge there now—and when a storm takes place they watch the flow until it becomes the colour of rain-water, when it is immediately turned into the river.

1110. That water would have to go through the pipes and the syphon? Yes; but the organic matter is all washed out before anything is turned into the river. The instructions are that when the sewage comes down clear it is to be allowed to go into the river, otherwise it would spoil the crops and the farm. I do not care what system you adopt, if you do not provide for the storm-water on the farm you must let it go somewhere else.

1111. Would it not be offensive to discharge the water into a narrow river like the upper portion of the Parramatta? I do not think so. I make a distinction between the first flow of water and the ultimate flow. The men can tell by the colour when the flow should be turned into the by-channel, so as not to get on to the farm.

1112. In your opinion, the success of a sewage-farm, and its unobjectionable character, greatly depend upon the way in which it is managed? There is no doubt about that. Some of the best sewage-farms in England have been spoiled by bad management; but that does not show that sewage-farms were not adapted for the purpose.

1113. I have lately noticed that precipitation systems are being adopted considerably in England for the treatment of sewage;—do you think that the precipitation system would be suitable for Parramatta? The conditions in England differ from the conditions in this Colony. There the Rivers Pollution Commission have fixed a certain standard for effluent water. No water is allowed to go into the rivers unless it has reached that standard. This is necessary because the people take their drinking water from some of the rivers, and they have to adopt all means in their power to prevent pollution. I suppose that about 120 patents for treating sewage have been taken out during the last twenty-five years; but my opinion has always been that where you are so situated that you can get land for a sewage-farm, the sewage-farm system is the best system to adopt. If you cannot get land you must adopt a chemical process.

1114. Are you prepared to stake your professional reputation upon the statement that, having regard to the narrowness of the Parramatta River at Duck Creek, its torpid character, and the large expanse of mud flat there, the farm is not likely to become a nuisance? I stake my professional reputation on this, that if a farm is properly managed, the effluent being analysed, as it is at Botany every quarter, and steps being taken to keep it up to a certain standard of purity, there will be no nuisance as far as the river is concerned.

1115. And you might say the same with regard to the surrounding district? On the same grounds, yes.

1116. You qualify your answer by saying that the farm must be properly carried out? I refer to the management.

1117. I suppose you mean carried out in the same way as the Botany farm has been carried out? In something the same way; but the soil at Parramatta would be different. You would have to consider the varying circumstances, but practically the two farms could be managed on the same lines.

1118. *Mr. Humphery.*] At Parramatta there are 22 acres above tidal influence, and 42 acres which are to be reclaimed by depositing sand upon them;—what difference would there be between the reclaimed land and the land at Webb's grant? Practically none. If you alluded to the farm as a whole, there would be a difference, because the land above high water is a gravelly clay.

1119. Then the conditions at Parramatta are as favourable as those at Webb's grant? Just so.

1120. You said that the storm-water passing through the pipes to Webb's grant was permitted to run direct into the river when it appeared to be clear;—could that be done at Parramatta, remembering that the Parramatta scheme is a pumping-scheme, not a gravitation-scheme? There would be no difficulty, because they could deal with the storm-water before it got to the pumping-station.

1121. You would recommend that the clear storm-water should be allowed to escape at Clay Cliff Creek before it could be pumped? Yes. I would not pump clean water on to the farm. Whether you adopt the International process or any other, you must get rid of the storm-water, because it is a quantity which you cannot control in the same way as a daily flow of sewage.

1122. Do you think there would be any danger of polluting Clay Cliff Creek between the pumping-station and the river? The overflow would not pollute a saltwater river.

1123. It would depend upon the care taken by the officers at the pumping-station in preventing sewage matter from going out with the overflow? Yes; that would be prevented by proper supervision.

1124. Under proper supervision there would be no objection to the scheme; but careful supervision would be necessary? Yes; but you might say that of any other scheme.

1125. *Mr. O'Sullivan.*] As you are aware, a tram-line runs past the site of the proposed farm;—is there any likelihood of its being damaged by the drainage from the farm, or of the farm becoming a nuisance to

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to those who travel by the tram, and thus allowing the owners of the line to claim compensation? If the tramway were in private hands the owner might claim compensation on very slender grounds; but it does not follow that the farm would be a nuisance because he called it one. I could not guarantee that no claim for compensation could be made; but I say that there would be no good ground for it.

1126. Do you think it likely that the drainage from a farm would damage the permanent way of the tram-line? You mean the soakage water?

1127. Yes? Oh dear, no.

1128. But the farm will be some feet higher than the tram-line? I could not tell you—I have not seen the cross-section.

1129. You think it is possible to take precautions by cutting drains which will prevent the water from getting on to the tram-line? You may be sure that the Construction Department will guard the Government against any possible claim for damage.

1130. If such a claim were made it might materially add to the cost of the work? I do not think there is any danger. The Construction Department will naturally see what is before them, and will take every care to prevent damage to the line. If they did not take proper precaution, they would deserve to have to pay compensation.

1131. You believe that there will be no offensive effluvia from the farm which would be a nuisance to tram travellers if the place were properly managed? I am speaking from six years' experience of the Botany sewage-farm. I do not think that the Committee would say that that is a great nuisance.

1132. I suppose you have read Mr. Stayton's report? I read it when I was first examined by the Committee; but I have not had time to look at it since.

1133. Do you think there is much in the point he raises, that clay is unsuitable for crude irrigation? No; I think it would be better for cultivation than the soil we have at Botany. The manager of our farm there, who is a farmer, has stated that he would be able to raise a totally different kind of crop from such land. What he cannot raise at one place he would be able to raise at the other. As regards the sub-soil, it would have to be drained.

1134. Mr. Stayton says that the filtration area would be likely to be surcharged and cease to purify from want of aeration? If you gave it too much sewage it would become choked.

1135. But that might be avoided? Precisely.

1136. *Mr. Davies.*] Do you regard the Webb's grant farm as being perfectly managed? I do.

1137. We are to take it, as we saw it the other day, to be properly and efficiently managed? Except in this one point, that we have some difficulty in dealing with the sludge, which you will not have at Parramatta.

1138. If a professional witness stated yesterday that he regarded the farm as very improperly managed, as far as the treatment of sludge is concerned, would he be correct? It is not so well managed in that particular as I should like; but we are getting over the difficulty by using a material called ozophone, which absorbs the smell. You must remember that the sludge is allowed to decompose for three weeks in the pits.

1139. Where do you treat the sludge? It is put into the trucks and spread upon the land. The sun dries the top part and absorbs the smell, after which the stuff is taken up again and dug into the ground.

1140. It is not spread upon the ground uniformly, but is dug into it? It is spread in heaps at first, and the men afterwards level it and plough it in.

1141. Then it is free from smell? Yes; you could take it away in your pocket. As Mr. Hamlet has said, the sun and the air are doing all the laboratory work for us.

1142. Where does the sewage come from? The particulars that I gave just now were got out by my draughtsman, who looks after the house drainage. In Paddington there are 1,900 houses.

1143. In what part of Paddington do you start? Up near the Queen-street entrance.

1144. Is not a large portion of the sewage from that locality drained into the ocean? Yes; the greater portion of it. We start from St. Mathias Church, taking the ridge going past the Victoria Barracks to Surry Hills and Strawberry Hills—all the southern slope.

1145. Not Bourke-street? Yes; Bourke-street, as far as Albion-street.

1146. The sewer laid under Mr. Bennett's supervision? Yes.

1147. Was that sewer not enlarged at his instance? No.

1148. Was not the main sewer put down for Shea's Creek enlarged? No; it is the same size now as it was when first designed.

1149. What size is it? Three feet three inches by 2 feet 2 inches, and 3 feet by 2 feet at the other end. It is egg-shaped.

1150. The system of which we are speaking is the partial system—the water from the house-tops is allowed to enter the sewer? Yes; except the water from the front roofs.

1151. You prefer that system to the system recommended by the Commissioners who reported upon the Parramatta scheme? Certainly.

1152. I suppose you have seen their report? I glanced over it just now. It seems to me that it is almost impracticable to carry out the absolutely separate system.

1153. According to the plan before the Committee, the fall of the sewers will be about 1 foot in 300? One in 600.

1154. Do you think that that would be sufficient under the separate system? I do not think that the fall has much to do with either system.

1155. Under a separate system will a fall of 1 in 600 allow the sewage to get away? Yes.

1156. The departmental proposal is to adopt a system similar to that in existence in Sydney? Just the same. We find the system to work admirably.

1157. The Commissioners say that the adoption of the separate system would reduce the cost from 16 to 25 per cent., because the pipes would be smaller;—do you think it would make that reduction? I think I said before that I could not give an answer, because I had not gone into the question; but it is a large reduction.

1158. Can you tell the Committee how it is proposed to raise the sewage at the well-hole, and pump it on to the farm. No, I have not gone into the details of the system; I merely know its general principles.

1159. Would it be possible to lift the sewage and force it on to the farm without creating a nuisance? I say that there should be no nuisance.

1160. The sewage would come on to the farm in its crude state? Sewage has a smell peculiar to itself, but it does not become offensive until it decomposes, and therefore should not be allowed to rest. If you keep it constantly in motion, and get it on to the farm within an hour or two, so that filtration can commence at once, there will be no nuisance.
1161. The sewage from the different houses and public institutions at Parramatta will find its way through the reticulation pipes to the well-hole; there it will have to be lifted several feet and forced on to the farm. Would not that cause a nuisance? There should be no nuisance under proper management.
1162. But there could be no possible treatment of the crude sewage up to its delivery into the well-hole? No; they would not treat it at all; they would take it as it came and pump it on.
1163. Would it be free from smell when so disturbed? I do not say that it would be absolutely free from smell.
1164. Do you not think that there would be a great nuisance when it was disturbed by the pump? I say that there would not be a great nuisance. Nuisance is a matter of degree. What you might consider a nuisance, I might not.
1165. You have nothing to add to the evidence you gave on a previous occasion? No.
1166. Your opinions have not altered in any way? No; and the analysis of the effluent confirm what I have previously said.
1167. *Mr. Hoskins.*] You stated in answer to Mr. Trickett that you believed the expense of managing the Parramatta farm would be less than the cost of managing the Botany farm. Do you make any reference to the cost of the pumping station? No.
1168. The cost of the pumping station at Clay Cliff, together with any disinfecting process they adopted there, would be in addition to the cost of the farm? It would be part of the sewerage scheme I take it.
1169. It would have to be added to the cost of the farm? Certainly not; the people who work at the pumping house will not work on the farm. You must keep your sewage farm account separate. Directly the sewage comes on to the farm it is charged to the sewage farm account.
1170. Though the pumping-station is a necessary part of the scheme? It is just as much a part of the scheme as the sewers are.
1171. *Chairman.*] When last before us I think you stated that, in your opinion, the land at Parramatta above high-water mark was suitable for the purposes of a sewage farm, but not so suitable as the reclaimed land would be? No; not as a filter.
1172. It would not take so much sewage, and would cost much more in the way of subsoil drainage? Yes; it would require subsoil draining, while the other land would not.
1173. Did I understand you to say, in answer to Mr. Trickett, that the smallest reticulation sewer you think desirable would be a 9-inch pipe? Yes; we never lay any smaller pipes, and I am confirmed in the opinion that it is not desirable to do so by the nature of the substances we occasionally take out of the pipes.
1174. With the experience which you have gained, do you think there is any point where you could reduce the expenditure of your farm? Yes; in this way. The Board have carried the farm beyond the experimental stage, and have found out what it can do; I should advise its being leased at so much an acre, one man being kept to see that the sewage is properly disposed of, and that the person who worked the farm did not create a nuisance.
1175. Do you think you would have offers for the farm if you proposed to lease it? We have had any number of offers for the farm at Botany. A gentleman called to-day and wanted to know if we would lease the farm; but at present it is under offer to the Agricultural Department.
1176. Your Department has placed it under offer to the Agricultural Department? Yes; at £200 per annum. They are to manage the whole place, and all we are to do is to employ a man to see that the thing goes on properly. Then a Board connected with a village-settlement scheme has offered to take the farm.
1177. Has the Agricultural Department expressed any opinion as to the rent you ask being too high, or too low? No; they have expressed no adverse opinion.
1178. Do you expect to receive £200 a year from them if they take it over? We do.
1179. Have you had any private offer to rent the farm at anything like £200 a year? Of course, you deal with a Government Department on different grounds from those on which you deal with the general public. It would not do for us to accept the offer of one man for the place. Assuming that our transaction with the Agricultural Department falls through, all we have to do is to throw the farm open to lease by tender, under conditions of which the Board shall approve. The man who takes it over will have to work the whole farm, we providing carriage of the sewage, and he must not create a nuisance. If we find that he is creating a nuisance, we shall have power to come in and terminate the lease.
1180. You would have to maintain the station on the northern side of the river? Yes.
1181. Is the Board favourably considering this proposal? Yes. It does not pay us, as a Government Department, to grow cabbages on the land with men working eight hours a day.
1182. You think that in private hands, the farm could be managed more economically? Yes with a profit to the man who managed it.
1183. *Mr. Neild.*] With reference to the pumping stations near Parramatta; would the pumping be done in such a way as to prevent the escape of smells and gases to the outer air, or would it be carried on in a hermetically sealed chamber? If they adopted the Shone system, the sewage would be dealt with in a covered vessel, hermetically sealed, except when the compressed air was let out by a valve, but that could be treated so as to cause no nuisance.
1184. How? It could be passed through the fire.
1185. There would be a smell if the Shone system were not used? It is a question of degree. Of course there would be a smell; there is a smell from a tub of soap-suds. There would not be any great nuisance.
1186. Would it be possible to have the pumping carried on in the immediate vicinity of private dwellings without creating a nuisance? I think so. Before concluding my evidence, I should like to correct a statement made by Dr. Anderson Stuart, in his examination yesterday. He said that the only nuisance that came under his notice during his visits to the sewage farm at Botany was the smell from the trucks which conveyed the sludge from the inlet-house to the farm. He gave it as the reason of that smell that the trucks were never washed; but that is not correct, because every day after they have been used, the trucks are washed out by means of stand-pipes which have been provided for the purpose.

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1187. Professor Anderson Stuart suggested that the sludge should be covered over in trenches? No doubt that would be the proper way to treat it, but it would be very expensive. The quantity of sludge with which we have to deal is, however, decreasing, and in 1893, it was 800 tons less than in 1892.
1188. How do you account for that? A great many gulleys in the different municipalities were at one time connected with the sewers, more as a matter of convenience, but as the various Councils constructed their own storm-water drains we cut them off, and in this way we get rid of a great deal of silt.

John Carruthers, Esq., Acting Superintending Engineer of Dredges, Department of Harbours and Rivers, sworn and examined:—

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1189. *Chairman.*] How long have you been connected with the Harbour and Rivers Department? For twenty years.
1190. Have you been connected with the dredging department all that time? Yes; and I have had to do with the tug boats.
1191. Do the dredge masters keep an accurate account of the quantity and quality of the silt dredged, and of the place where it is deposited? They keep an account of the quantity.
1192. And where the stuff is deposited? Yes.
1193. Do they make returns showing the cost of dredging and disposing of the silt? No; they do not keep any returns as to the cost. That is done in the head office.
1194. As Acting Superintendent of Dredges, can you furnish the Committee with the cost of disposing of silt at various points? It costs about 3d. a ton to take it from Sydney out to sea.
1195. After it has been delivered into the punts? Yes.
1196. That includes the wages of the punt crews, towage, &c.? This is the cost of towage only.
1197. What does it cost per ton to deposit it upon any reclamation area within Port Jackson (say) Neutral Bay? At Neutral Bay and other places it has averaged about 2½d. a ton.
1198. Was that work done by hand-barrow labour, or by pumping? By a sand-pump.
1199. Does the distance you have to tow the punts before disposing of the silt enter largely into the cost of disposal? Not very much. One or two miles do not matter much when you have a steamer towing.
1200. What is the 2½d. for? That is the cost of lifting the silt by means of a sand-pump, and putting it on the land.
1201. What does it cost to tow it from the dredges and dump it alongside the sand-pump? I suppose it would cost from 2d. to 3d. a ton; it would depend upon the distance it had to be taken.
1202. How far do you reckon it, (say) from Darling Harbour to your dumping ground in the Pacific Ocean? It would be about 12 miles.
1203. In and out? Twenty-four miles in and out.
1204. That costs 3d. a ton? Yes.
1205. How far do you call it to Neutral Bay and back? It would be 6 or 7 miles going and coming.
1206. Would the distance from where you are dredging, to the junction of the Parramatta and Duck Rivers, be equivalent to the length of the journey out to sea? About the same.
1207. Some dredging has been done lately off Darling Point, Rushcutters' Bay? Yes.
1208. Do you know whether they intend to dredge any more there? Yes; I believe it is intended to remove a quantity of sand from there.
1209. How far would you call it from there to the Duck River? I should think it would be 9 or 10 miles.
1210. The return journey would be 20 miles? Yes; it might be a little more or a little less.
1211. It would be much the same as going out to sea? Much the same.
1212. Roughly we may estimate the cost of delivering silt dredged up from Darling Harbour at the site of the proposed sewage farm at Parramatta at about 3d. a ton? Yes.
1213. Do you know the area that is to be reclaimed there? I have heard that it is about 66 acres.
1214. Can you tell us roughly how many tons of silt would be necessary to make the reclamation, carrying it up to a height of about 5 feet above high-water mark? I could not tell you just now.
1215. According to your estimate, it would cost 3d. a ton to take the silt alongside the sand-pump, and 2½d. to put it on the land by means of the sand-pump, or 5½d. altogether? Yes; or 8½d. for dredging, towing, and pumping ashore; but the cost would be increased if the sand-pump had to pump it more than 1,000 feet.
1216. What does it cost for the sand-pump to deposit the silt at Long Cove? It would cost a little more there because the distance is greater.
1217. Another farthing a ton? From a farthing to a half-penny a ton.
1218. Then it would be better for us to be on the safe side and say 3d. in the case of the Parramatta reclamation, making the total cost 6d.? Yes, for long distance.
1219. Now what would it cost you a ton for dredging? About 3d.
1220. Has much of the silt dredged from the harbour been taken out to sea lately? Not lately.
1221. It is practically all used for these reclamations? Yes.
1222. Not only because towage is cheaper, but also because of the value of the reclaimed land? Yes; when you are towing to sea there are a great many stoppages owing to the bad weather.
1223. *Mr. Humphrey.*] Are the dredging operations constantly proceeding throughout the year? Yes; but last year there was only one ladder dredge working in Sydney Harbour.
1224. Is there one dredge constantly at work in Sydney harbour? Yes.
1225. If you had not some place inside the harbour to deposit the silt you would have to take it outside? We should have to take it out to sea.
1226. The estimate of the cost of delivering the sand on to the proposed reclamation which you just gave was exclusive of the cost of building up fascine walls and the labour necessary to move the sand-dredge alongside the farm. You morely spoke of the cost of pumping and delivering the sand? My estimate is for all expense connected with sand pump, but exclusive of fascine dykes.
1227. Exclusive of any other work in connection with the farm? Yes.
1228. You have no information as to the cost of the other work? No.
1229. Where did you get the sand delivered on to the Neutral Bay reclamation? Principally from Rushcutters' Bay.

1230. Was any further work necessary at Rushcutters' Bay? Yes; It would be a great benefit to have the bank of sand which exists there removed, so as to enable vessels to anchor there in bad weather. A great many vessels go there to anchor in bad weather. J. Carruthers,
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1231. How many tons a day can you deliver from a dredge? About 1,900 tons. Two of the dredges now working in the harbour would lift about 1,900 tons each.
1232. That would be nearly 4,000 tons? Yes.
1233. Could you deliver 4,000 tons daily at the proposed sewage farm at Parramatta? Yes. Of course, accidents might sometimes occur; but that would be about the regular thing.
1234. *Mr. O'Sullivan.*] In giving your estimate just now what description of dredges had you in view—sand-pump dredges or bucket dredges? I was thinking of the "Neptune," the sand-pump dredge which was employed at Neutral Bay.
1235. Is that the latest design of dredges? There is the "Groper." She is used more for breaking up fresh ground. The "Neptune" will only lift loose matter.
1236. How does her work compare in cost with the Von Schmidt dredge at Long Cove? We have not yet got the cost of that dredge worked out.
1237. Is it under your supervision? Yes.
1238. Do you find it a better and cheaper dredge than the ordinary sand-pump dredges? She is better adapted for breaking into new ground. She would cut her way through a stiff bottom when the others would not. If there were any clay amongst the silt the sand-pump dredges would not lift it.
1239. You get a better result and a larger amount of work done by the Von Schmidt dredge? I do not know that the result would be better in lifting pure sand.
1240. But you would lift more for the labour employed? I do not think there would be much difference.
1241. *Chairman.*] What dredge do you personally superintend? The "Sydney."
1242. What are the running expenses per day? I have never calculated them.
1243. Are not very elaborate reports and tables made out annually showing the cost of each dredge? I cannot carry them in my mind, but they could be obtained.
1244. Do you know what is charged when the dredges are hired by private individuals? I think that £30 a day is charged for the "Sydney."
1245. There are several grades are there not—£30, £20, and so on? Something of that sort. I have never been on the dredge when she has been hired out.
1246. Do the Department expect to make a profit from the hiring of their dredges? No; they simply pay working expenses, interest on capital and depreciation.
1247. Then £30 a day must be the cost of running your dredge? Yes; if that is what is charged. I think that is the charge.

James Walter Grimshaw, Esq., M.I.C.E., Supervising Engineer, Department of Harbours and Rivers,
sworn, and examined:—

1248. *Mr. Neild.*] I believe you have a knowledge of the cost of fascine work. Do you know the fascine work that has been done at the junction of the Duck and Parramatta Rivers? Yes.
1249. Was the work under your charge? It was under Mr. Williams' charge. I was his assistant.
1250. Can you give the Committee any particulars as to the cost of that work? 3s. to 3s. 6d. per cubic yard is the usual cost of fascine work including everything.
1251. What width do you usually build it? It varies very much indeed.
1252. What is the width of the fascine work already erected? I think in this instance, it is about 6 feet on the top, and about 15 feet at the bottom.*
1253. What is the depth? About 8 feet.*
1254. Would it average 8 feet all through? Yes.*
1255. That is 36s. per lineal yard? Yes; I could ascertain for you the exact cost of the work, which I think would be more satisfactory.*
1256. Does your answer apply to the fascine bank erected at the Duck River? It applies to fascine work generally. I believe it would apply to this work.
1257. In your experience, has the percolation of water a tendency to jeopardise the integrity of fascine work by undermining it? Yes.
1258. You cannot absolutely guarantee the integrity of fascine work? Yes, but accidents may always occur.
1259. Can you state an instance where slips have occurred? Yes; we have had a great deal of trouble with slips at Long Cove.
1260. What was the cause of the slip—the water percolating through and taking the sandy material with it? No, that can scarcely be said to have been the cause. It was more due to the nature of the bottom, which is a very soft slimy mud, and allows the bank to settle and slip forward.
1261. *Chairman.*] Was not the slip to which you refer caused by the dredge deepening the channel below the fascine bank? In some degree.
1262. *Mr. Neild.*] It is proposed to discharge the silt from the punts into the river in front of the fascine work, and then put it on to the land by means of sand-pumps. Will there be any risk of this operation causing the bank to slip in the way you have just referred to? It is just possible that a slip may occur, but not probable.
1263. By the injudicious use of the sand-pump? Yes; but it would not carry the whole bank away. It might affect 20 or 30 feet; but it would settle, and we could build it up again.
1264. But you lose your original line where a slip occurs? Sometimes; but usually we can get the bank back into line.
1265. By what process? By giving it rather more batter.
1266. You get the top back? Yes, we get the top line straight.
1267. *Mr. Humphery.*] Scaling it off on the map, how many running yards of fascine work would there be at the proposed site? I am not sure that there will be a fascine bank along the tramway company's land; I think that is an earth bank. According to the map there will be about a mile of bank, but the greater part is earth bank only.
- 1268.

J. W.
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Esq.,
M.I.C.E.
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* NOTE (on revision):—Referring to questions 1252 to 1255, I find the average measurements are:—Top width 7 feet bottom width 19 feet, and height 9 feet; cost 35s. per lineal yard.—J.W.G., 27/2/94.

- J. W. Grimshaw, Esq., M.I.C.E.
22 Feb., 1894.
1268. Are we to understand that the cost will be about 36s. a yard? The work has been actually carried out, with the exception of a small gap, so I think it would be fairer to refer to the figures themselves.
1269. You could estimate pretty closely the exact cost of the fascine work shown upon the plan? No, I could not, because there are no soundings.
1270. But you could furnish a statement of what the work has cost, and what it will cost? Yes.
1271. *Mr. Ewing.*] Were you working at the fascine bank on the southern boundary of the farm? I think the greater part of that is an earth bank.
1272. *Chairman.*] Will you furnish the Committee with a statement of the cost of the fascine work up to date, and an estimate of the probable cost of completing what is yet undone? Yes.
1273. *Mr. Trickett.*] In making out your statement, will you separate the cost of the bank along the Duck River, because that would probably cost more than the rest. We do not want you to average the cost.
1274. *Mr. Collins.*] What is the life of fascine work in a place like this? Mr. Williams told me that on one occasion, when repairing a dam at Liverpool, he found that some of the fascines in the foundation were still perfectly good, although they must have been there from fifty to sixty years.
1275. Do you think that this work will last fifty years? I think it would last that time if it were repaired and kept in order; but if it was not touched, and no accident happened to it, it would possibly last twenty years. We have no actual experience that I know of.
1276. That is taking into consideration the sewage stuff that would get in amongst it? No; I have not taken that into consideration.
1277. *Mr. Neild.*] The air had probably been excluded from the fascine material in the Liverpool dam? Yes.
1278. If it had the action of the air and the elements to contend with, as is the case with the bank, it would not last so long? No doubt that would shorten its life. That is why I say that this work will probably live about twenty years.
1279. A fresh in the river might undermine the bank and bring it down? Yes; it might.
1280. Supposing the residuum of chemical works escaped from the sewage farm, might it not have an effect upon the ti-tree? Yes; but I do not know the full details of the scheme. I do not know whether chemicals would get into the fascines.
1281. Is there not a considerable discharge of chemical matter into the Duck River at the present time. Is not the upper portion of the river foul with chemical and manufacturing refuse? I have not noticed. Where we were working at its junction with the Parramatta River, this discharge was not noticeable.
1282. *Mr. Humphery.*] When you say that the life of fascine work is about twenty years, do you mean that it requires renewing every twenty years, or that it would have to be repaired at the end of that time? I think under ordinary circumstances it would be kept in repair, and if defects were noticed they would be put to rights. I think if the bank were filled in behind it would last twenty years.
1283. Would it be wholly destroyed in twenty years? I think it would be pretty well destroyed in twenty years if it was not repaired during that time.
1284. *Chairman.*] But applying the stitch in time theory, it might last for thirty or forty years? Yes; I think it would last pretty well for ever. This bank can at any time be faced with stone, should it be considered desirable.

TUESDAY, 27 FEBRUARY, 1894.

Present:—

JACOB GARRARD, Esq. (CHAIRMAN).

The Hon. WILLIAM HENRY SUTTON.

The Hon. JAMES HOSKINS.

The Hon. FREDERICK THOMAS HUMPHREY.

The Hon. JOHN DAVIES, C.M.G.

The Hon. WILLIAM JOSEPH TRICKETT.

THOMAS THOMSON EWING, Esq.

WILLIAM CHANDOS WALL, Esq.

WILLIAM McCOURT, Esq.

JOHN CASH NEILD, Esq.

EDWARD WILLIAM O'SULLIVAN, Esq.

CHARLES COLLINS, Esq.

HENRY DAWSON, Esq.

The Committee further considered the proposed Sewerage Works for Parramatta.

George Henry Stayton, Esq., M.I.C.E., sworn, and examined:—

- G. H. Stayton, Esq., M.I.C.E.
27 Feb., 1894.
1285. *Chairman.*] You were for some time connected with the Sewerage Department of the Public Servico of New South Wales? Yes.
1286. You have frequently appeared before this Committee as a witness in connection with various schemes for dealing with the sewage of Sydney and its suburbs? I have.
1287. You were also examined by the Committee some fifteen months ago in connection with the scheme now under consideration? I was.
1288. Have you before you the evidence taken during the present inquiry? Yes; up to the 14th of February.
1289. Have you read the evidence of Professor Anderson Stuart? No; I had not seen it until a few minutes ago.
1290. In the evidence which we have taken, some doubts have been expressed, I think, concerning the theory you propounded during a previous examination? I gather that there has not been so much doubt as difference of opinion.
1291. Do you still adhere to the opinion that the sewage of Parramatta cannot be disposed of without creating any public nuisance, without an intermediate system? I am strongly of that opinion.
1292. Carrying out the original proposal, without the aid of precipitation? I am afraid I can hardly answer that question, because, I take it, the proposal now before the Committee is somewhat modified and improved, as compared with the scheme which was before them, when I was last examined. It is clearly stated now that there is to be not only a reclamation of the low-level area, but that the ground is to be raised to the height of 5 feet above high-water mark, by putting selected material upon it.
1293. If the reclamation takes place in the manner proposed, do you think the land will be capable of absorbing all the sewage of Parramatta, without creating any nuisance to the public? I think it is quite possible that it would take the sewage of Parramatta for some years to come, but I only say so on the ground

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ground of expediency. What I mean is this:—According to the report before me, it appears that £6,000 has been already expended in acquiring the site of the proposed outfall works, and therefore the proposal might, on the ground of expediency, be more favourably considered. In saying that, however, I am bound to adhere to my original opinion—and I do so all the more strongly—that such a course would mean a large unnecessary outlay.

1294. You submitted an estimate of the cost of the International system of purification when last you were examined, did you not? I did; but I am afraid that I have not those figures before me now.

1295. Do you think the proposal of the Department would be more expensive than the International system which you recommended on a previous occasion? I do clearly.

1296. Have you any idea what the difference in cost between the two systems would probably be? I prepared an approximate estimate, and I think that between making this area of 60 acres fit for receiving the sewage of Parramatta for some years to come, and setting up the International process, as indicated in my report, there would be a saving of nearly £20,000 in the initial outlay.

1297. Have you any estimate of the cost of the proposed scheme before you now? Yes.

1298. Will you give it to the Committee? It is, as I said before, only an approximate estimate. I am taking, as nearly as I can, the figures that have already been placed before the Committee. It appears that £6,000 has already been paid for resuming the land, and for other work. It also appears that it will be necessary, within a few years, to prepare 42 acres, and to underdrain 20 acres more. It will be necessary, in addition, to fill in to the 5-feet level, which would be a very costly undertaking; but I understand that it is not to be charged to the sewerage of Parramatta.

1299. *Mr. Hoskins.*] Who says so? The evidence shows that the work is to be done by the Harbours and Rivers Department, and not charged for by them. In addition, there would be the construction of duplicate rising mains, which the evidence shows would cost about £15,000, bringing up the outlay in connection with the filtration area to £33,000. On the other hand, if the International system were adopted, there would be a saving of the cost of the rising mains, and a saving in connection with the pumping-station, because the lift would not be nearly so great, and therefore the power of the engines could be reduced proportionately. I put that down at the sum of £2,000. Upon the other hand, to establish precipitation works which would be sufficient for the population of the place for some years to come, would not entail an outlay of more than £15,000. Deducting from this the £2,000 to which I have referred, you get £13,000, and that, taken from £33,000, shows a saving of £20,000.

1300. *Mr. Wall.*] Do you question, in any way, the estimate of the Department? No.

1301. You think that the work could be carried out for their estimate? I have every confidence in the estimates and prices of the Department.

1302. Taking those figures as representing the cost of the work, you think the International system could be adopted at a cost of £20,000 less? I do, clearly.

1303. You have not made any estimate of the cost of the different works if the International system were adopted—any detailed estimate? I have to a certain extent, but I have not got it with me. I have some of the latest information with regard to the cost of the system as received from England. At Macclesfield, a town with a population of 40,000, it is proposed to adopt the International system in connection with their existing sewerage works. At present the discharge is into the river, and creates a great nuisance, and the authorities, therefore, propose to construct tanks to purify the sewage on the system to which I have referred, at a cost of £10,000.

1304. *Chairman.*] How is it being dealt with now? They have no tanks at all now. They had an irrigation system there which proved a failure. It fouled the river, and was the cause of complaints.

1305. You cannot give us any details as to their irrigation scheme—as to whether it failed from the unsuitability of the soil, or an insufficient area, or from any other reason? No; I am afraid I have not that information at my fingers' ends.

1306. *Mr. Wall.*] You know the site of the pumping-station? Yes.

1307. Do you think that the pumping of the sewage would cause any nuisance to the adjacent institutions? Not the least. I know several pumping-stations in England which have houses all round and close to them, and there has been no complaint whatever of any smell arising from the pumping. The sewage is not exposed at all.

1308. Then the whole question is reduced to the difference of cost between the two systems? No; there is a very important element beside, and that is efficiency.

1309. But I understood you to say that the proposed system, with the alterations outlined by the Department, would deal efficiently with the sewage of Parramatta? It would deal with it for some years to come. The system could be arranged in such a manner that the sewage could be so taken without creating any serious nuisance. But with regard to the relative merits of the actual purification done by the two systems, there is an immense deal to be said in favour of the International system. I have information here which, if the Committee wish to hear it, would inform them what is being done in this matter, and what immense strides have been taken since the subject of sewerage was last before them.

1310. *Mr. Hoskins.*] Will you kindly furnish the Committee with the information you speak of? I would remind the Committee that in the report I made in 1891 on the subject of sewage purification in England, after my visit to the old country, I mentioned the various systems in use there—irrigation, precipitation, and all the other systems at all known and commanding respect. I said that the International process had been invented in 1887, and had then been adopted in fifteen places. At the present time it has been adopted by over 100 towns and public institutions. Amongst the towns that have adopted this system—the members of the Committee will know that some of them are populous places, and some not so large, are Acton, Devizes, Hendon, Evesham, Loughton, Leicester, Nuneaton, Pendlebury, Norwood, Southall, Huddersfield, Reading, Worcester, Guildford, Bury, Oldbury, Birkdale, Stone, Sutton, Walsall, Maidenhead, Eton, Woking, Tenby, Adlington, and Horsham, and within the last twelve months the system has been adopted by a number of other places. In October last the city of Bath, which you know is a large town, adopted the International system for their outfall works. In August, Salford, after experiments with twenty different processes extending over several years, also adopted the system.

1311. *Chairman.*] Chemical processes? Chemical processes. The International Company offered to treat the whole of the sewage coming down at 30s. per 1,000,000 gallons. In October last, Conisborough and Keynshaw, and in December, Sutton in Ashfield, and Eiland in Yorkshire, also adopted the system.

- G. H. Stayton, Esq., M.I.C.E.
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- That shows that it has gone ahead by leaps and bounds, far and away beyond any other system that has been adopted in England since 1890.
1312. Any artificial system? Any other system at all.
1313. *Mr. Wall.*] Is it generally admitted by sewerage experts, that where land is available, the best method of treating sewage is to deal with it on farms? Undoubtedly so. I have said all along that where a sufficient area of suitable land is available, one of the best and simplest systems of purification is the sewage farm system. The various authorities on the subject, one and all, say that, given a sufficient area of suitable land, there is no system as simple, as good, and as effective.
1314. If we assume that when the reclamation at Parramatta is completed there will be a sufficient area there, the only question between the proposed system and the International system is the cost of procuring the land? Assuming that the first supposition is correct; but that is where I am at issue with the evidence which has been submitted to the Committee.
1315. There is one other point: When you were last before the Committee you submitted some tests that you had made in connection with the suitability of the sand or soil for filtration purposes; we have since had evidence before us showing that sewage is disposed of by certain micro-organisms which exist in the soil, and therefore the question of filtration is not of so much importance as it was reported to be; the evidence before us goes to show that if sewage is discharged upon land in sufficient quantities—not too much being put on at a time—the micro-organisms in the soil will dispose of it? Yes; I quite agree with that statement.
1316. In your previous evidence you say that the cost of both systems would be the same up to about the pumping-station, and that any saving would be effected between the pumping-station and the farm? Yes; the outfall portion.
1317. You estimate that saving at £20,000? That is so.
1318. If the International system were adopted, the effluent, after filtration, would be discharged into the river at or about the site of the proposed pumping-station? Close to there. The effluent would be perfectly clear—as clear as the water in the bottle upon this table.
1319. Does the £20,000 extra to which you have alluded include the cost of the sewage farm? Yes. As I explained just now, I include the cost of raising the land 5 feet.
1320. Assuming that the land was resumed at its market value, the difference between the two systems would be £14,000—that is, excluding the cost of the farm? No; I have excluded the £6,000 in my estimate.
1321. But the farm would remain as an asset to the Department—the saving would be £14,000? Yes; but the land would be an asset for what it is worth. That would make the saving £14,000.
1322. *Mr. Sutor.*] You visited the site of the proposed farm, and took away some samples of soil? Yes; but that was eighteen months ago.
1323. Can you give us any information as to how you treated that soil? I do not think I can throw any fresh light on the subject beyond what was stated during the previous inquiry. The soil was simply got from the holes on the ground and brought to Sydney and submitted to the Committee. I did not treat it, or make any experiments with it at all.
1324. *Mr. Ewing.*] When giving evidence on a previous occasion, you were of opinion that some chemical process of treating the sewage was necessary, and you favoured the International system? Yes; as being the cheapest.
1325. In preference to any broad irrigation scheme—in preference to a sewage farm, in fact? Only because of the way in which it was proposed to prepare the land. No one system can be given as the best in all cases. Every place must be considered on its own merits, regard being had to the local conditions. The conditions at Parramatta at that time were certainly not favourable to the treatment of crude sewage in the way proposed. I then tried to find out what would be the next cheapest and most efficient system to resort to, and, seeing what was being done in England, I recommended the International system.
1326. *Mr. O'Sullivan.*] I gather from your evidence that you think the scheme now before the Committee, with the improvements you have indicated, a suitable one for the purpose designed? It would be suitable for some years to come. I could not go beyond that.
1327. Is it worth our while to recommend a scheme only for a few years? One rule observed by all engineers in devising a drainage system for a town is to make preparation for at least twenty years ahead, and I say clearly that in this scheme proper provision has not been made for twenty years ahead—that is, assuming that the figures are correct, and that the population in the future increases at the same rate as it has done in the past. If the population does not increase at that rate, the land will take the sewage of the district for some years to come.
1328. I understand that even if 5 feet of sand is placed upon the land, and other improvements are made, it will not deal with the sewage twenty years hence, though it may do fairly well for a few years? That is so. It might be thought expedient to proceed however.
1329. That is, the land having been purchased, and various expenses incurred, you think it better to go on with the scheme, which may last for a few years, than to adopt a new scheme;—is that the position you take? That is the position, and it may very well be so considered by the Committee.
1330. Is it what you recommend? I am not going back on my own views, which are very clear on the point.
1331. Did you read the evidence of Professor Anderson Stuart? No; I have not had an opportunity of doing so, except so far as the newspaper report is concerned.
1332. I presume that you are posted up in the literature of the subject? I believe so. I have sufficient evidence here to keep the Committee going for a long time if necessary.
1333. Have you noticed the great stress which has lately been put upon the existence of organisms in the soil that are likely to prove destroyers of the sewage matter? Yes; I noticed what Dr. Anderson Stuart said on the subject.
1334. Do you agree with his theory? I think there is no question whatever that the sewage is attacked in the manner he has stated, but I do not quite see how it applies so strongly to this particular proposal. Every sewerage engineer knows that the evidence of thorough purification is the absence of smell on the sewage farm. You may talk as you please about microbes and bacteria, but it all comes back to the practical question, "Is there a smell?" If the farm is a nuisance, then, either the soil is not suitable, or too much sewage has been put upon it, or there has been neglect somewhere. I do not attach any special importance

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importance to what has been said about microbes, though it is very interesting, and I have no doubt that we shall hereafter hear a great deal more on the subject from the chemist's point of view. In considering the matter from a practical and engineering point of view, the first test we have to apply is the presence of a smell.

1335. Who are likely to be the better judges on these matters—scientists like Professor Anderson Stuart, or engineers like yourself? I submit that one set of opinions ought to be put alongside the other, and both are deserving of equal consideration. In my own case, I submit that having from the time I was fifteen years old had daily acquaintance with sewage farming and sewage purification, I have the whole thing at my fingers' ends. A medical man may be ever so clever from a theoretical point of view, and his opinions in that way may have great weight, as I have no doubt they would have, but the practical experience and common sense of an engineer should also weigh very materially. I saw it stated in the press that Professor Anderson Stuart had said that it should be no part of an engineer's duty to consider what the soil was, or he gave some such answer as that. I was simply amazed when I saw the statement.

1336. *Chairman.*] I am sorry you have not seen the Professor's evidence, and I think it only fair to him, as well as to yourself, to point out that I do not think he put it in that bald way. He said that the constituents of soil would be better described by a medical man than by an engineer? Of course that is a very different thing. I only went by what I saw in the *Daily Telegraph*.

1337. *Mr. O'Sullivan.*] Do you think that a practical engineer like yourself, who has had a great deal to do with sewerage works, is a better judge of these organisms and their power, and the quality of the soil, and the influence of sewage upon it, than a man like Professor Anderson Stuart? I do not mean to say that I am a better judge of organisms, or microbes, or bacteria, than he is, because it would be impertinent of me to say such a thing; but I say that an engineer would be a better judge of successful purification and of the working of a sewage farm.

1338. Does not the whole thing hinge upon a knowledge of the power of these microbes; if their work is successful the purification must be complete, but if they are not successful the engineer may not have been correct in his calculations? This is a matter which has come to the front only within the last few years, and whatever else it has done it has not altered the fact that on most sewage farms there are at times smells. In some cases you will find the smells very bad indeed, and a very serious nuisance. I cannot myself see how it practically affects the matter, whether a medical man says that the microbes will thrive or purify better here or there, because we know from experience in what soils sewage purification is best carried on.

1339. But where a small smell has arisen may it not have been caused by bad management? Bad management would mean the setting in of putrefaction, and putrefaction causes a stink.

1340. But might not that be apart from the microbes or bacteria? It would show that there was something wrong on the farm requiring investigation, and an engineer of any standing would know at once what was the matter and how to rectify it.

1341. Dr. Anderson Stuart was so strong on this point that I should like to emphasise it; he admits that a smell may arise from these farms when they are improperly managed, but he contends that when properly managed there is no danger to health from them? I know most of the sewage farms in existence in England, and I can truthfully say that the smells on them are at times very bad. Even at the well-known Croydon farm at Beddington I have experienced the most foul smells.

1342. Notwithstanding these smells, is it not a fact that villas have been built on the hills overhanging what we would call the gullies situated on the farm? No; not the lower portion of the farm. There are very few houses there, and it is all flat country.

1343. But do not houses overlook the farm? They may overlook it; but they are at some distance from the place I am speaking of. I lived in the district for some years, and I know it as well as I know George-street.

1344. Did you visit it when you were in England last? Yes; several times.

1345. Mr. Price, who has just returned from England, tells us that there are residences quite close up to the farm? There are some, but not many. Dr. Dupré, F.R.S., the well-known chemist, lives at Sutton, and Mr. Dibdin, who is the chemist of the London County Council, also lives there. We were neighbours there, and used frequently to pass through the farm together. In the paper noticed by Mr. Hickson in his report on the Parramatta sewage scheme, Dr. Dupré, discussing the Berlin sewage farm, made this statement:—

It had been said that sewage farming created no nuisance. That might be the case in Berlin, but it would not be so in London. Beddington sewage farm had been brought forward as one of the best in England. When Mr. Dibdin and he, after last Tuesday's meeting, were on their return to Sutton on the line which passes through the sewage farm, and while they were engaged in conversation, not on the subject of sewage, they both suddenly exclaimed, "What is that?" It was a terrible odour coming in at the window as they were passing Beddington sewage farm. He had noticed that whenever he had passed Beddington sewage farm on a warm calm evening the smell was exceedingly offensive, and any inhabitant of Sutton going home in the evening would tell the same tale.

1346. Is the farm at Croydon as well managed and carried out as the farm at Webb's Grant? I have had no opportunity of seeing Webb's Grant for some years; but it is simply a huge filtration area, whereas at Croydon the system of broad irrigation is adopted—an altogether different system.

1347. *Mr. Davies.*] Did you read the report furnished to the Minister of Works by Messrs. Wardell, Bell, and Chanier? Yes.

1348. You noticed that they recommended the separate system? Yes.

1349. Do you approve of that system? I do not.

1350. They say that by its adoption from 16 to 20 per cent. would be saved in the cost of the reticulation pipes and sewers generally? Yes; I noticed that.

1351. Do you place any value upon such a recommendation for a town like Parramatta? I totally and emphatically disagree with the recommendation.

1352. You would not, under any circumstances, recommend the separate system for the treatment of the sewage of a place like Parramatta? I certainly would not.

1353. You would make the pipes large enough to take a portion of the storm waters in order to carry off the sewage? Yes, the partially-separate system.

1354. There is no point in connection with that report which you regard as of any great value in assisting this Committee to arrive at a conclusion? There is, to my mind, a very considerable difference, which I do not think is fully realised, in the quantity of sewage proposed to be put upon the land at Parramatta. That is where I join issue.

1355.

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1355. As far as your opinion goes, the whole objection is in regard to the want of sufficient area to carry on the system of broad irrigation? Of course it is well known that the sewage of only a certain number of people per acre can be dealt with under the broad irrigation system. With the intermittent downward filtration system, a very much larger quantity of sewage can be dealt with per acre, according to the quantity of the land. When last examined, I stated that the sewage from 100 to 200 persons could very well be disposed of by the broad irrigation system on an acre of land at Parramatta, but that nothing like 800 per acre should be thought of in connection with an intermittent downward filtration system, and I still adhere to that opinion.

1356. Would you be surprised to learn that we have had evidence during the present inquiry from the officer controlling the sewage farm at Webb's Grant that that land receives the drainage of from 1,000 to 1,200 persons per acre? I am not at all surprised to learn it, because I know that such a thing is perfectly practicable. But that system should not be continued for an indefinite period. In some of the towns in England where sewage has been similarly treated, the filter-beds have, after a time, become partly inefficient, and in some cases, the system has had to be entirely superseded. You can, for perhaps two, three or five years pour an enormous amount of liquid sewage upon the filters, but the time will come when you will have to desist, and in order to prevent mischief you should never exceed what is a fair quantity.

1357. That is to say, the filter-beds become so charged with sewage matter that they will not perform their proper functions? Yes; after a certain period they will not perform their proper functions.

1358. On the table before you are bottles containing a sample of the soil at Webb's Grant, which has never been treated with sewage, and another sample of soil which has been continually treated with sewage during five years;—do you detect any offensive smell from the second sample? No; I do not notice any difference between them.

1359. Taking the population of Parramatta at 12,000 or 13,000, and supposing this land were raised 5 feet above high-water level by sand being thrown upon it, what do you think would be a sufficient area for the proper and efficient treatment of the sewage of the place, not for a period of five, ten or twenty years, but for all time? My opinion is that the 62 acres of land at Parramatta would provide for a population of over 22,000, if treated partly by the system of intermittent downward filtration, and partly by broad irrigation.

1360. For all time? Until the population exceeded 22,000; but it has been estimated, if I remember rightly, that the population of the place will ultimately increase to 48,000.

1361. Have you checked the estimate of cost for the whole of the departmental scheme? Not a second time. I went over it before I was last examined.

1362. Do you remember the figures which you gave to the Committee when last examined? I am afraid that I cannot recollect them now.

1363. From your general knowledge of the scheme, can you give the Committee any idea of what the reticulation and preparation of the sewage farm, together with compensation will amount to? No, I could not do that, because I have not any of the plans or sections before me.

1364. You could not form any general opinion from the plan before the Committee? It would be impossible.

1365. You are not able to give the Committee any information on that score? No.

1366. You are aware that it is intended to pump the sewage on to the farm? Yes.

1367. I think I understood you to say that no smell would arise from the disturbance of the sewage at the pumping-shaft? There ought not to be any, nor do I think there would be any.

1368. And you think there would be no offensive smell or injury to health from the treatment of the sewage upon the farm? I think it extremely probable that there would be smells at times under certain atmospheric conditions, but if the population does not increase beyond 20,000, I do not think there would be any serious cause of complaint.

1369. Do you think that during the summer months the farm would be a nuisance to passengers by the southern and western trains? I do not think so; but it might possibly be a nuisance to passengers by the tram and steamer, though there ought not to be any serious nuisance.

1370. What course ought to be adopted to prevent or minimise the smell? I have already stated my opinion that the whole of the sewage of Parramatta could be otherwise treated, which could be done without creating the least smell.

1371. By the International system? Yes.

1372. But suppose the scheme before us were adopted, what should be done to secure the residents in the vicinity against any nuisance arising from the farm? It could be prevented by precipitation. The solids could be precipitated in the first instance, and only the effluent allowed to go upon the land.

1373. Where should the solids be precipitated—before the sewage got to the pumping-station, or after it had left it? At the head of the farm.

1374. That is to say, you would have a screening-tank there? No, a precipitating tank. Whatever ingredient was chosen for precipitating the solids would flow into the tank together with the sewage, and the solids would be deposited on the bottom.

1375. How could they be treated afterwards? They could be dried and pressed.

1376. And used on the farm? Yes; or sent away to agriculturists and gardeners.

1377. Would it not be necessary to use chemicals to destroy the offensiveness of the solid matter in the tank? No; all these operations could be carried on without any smell whatever. At Acton, where the International system was first adopted, in 1838, they are now building houses, bringing in a rental of from £40 to £50 a year, which is perhaps equal to a rental of £80 to £100 here, all round the works. That is proof positive that no nuisance arises from the treatment of the sewage.

1378. You are speaking of the International system now, not of the sewage farm system? Yes.

1379. I am asking you questions with reference to broad irrigation on the land it is proposed to reclaim and build up at Parramatta;—you say that the solid matter obtained by precipitation could be pressed and then taken away? It could be pressed into cakes by machinery, and then would be perfectly dry.

1380. And free from any offensive smell? Yes; and it would have a value.

1381. Which, in your opinion, would be the most costly, the International system, treating all the sewage near the pumping-station, and running it into the river after it had been filtered, or the departmental proposal? The departmental scheme.

1382. Which, in your opinion, would be most effective, and would cause least smell? The International system, unquestionably. It is a system that can be carried on in all weathers, whether it is dry or wet, cold or hot. Its effect is exactly the same under all these conditions, and I do not think anything stronger could be said in support of it, especially in view of the result of the important tests that have been made. It has been clearly proved that the purification is effectual. I have before me the result of a test instituted to ascertain the power of polarite to remove organic matter and disease germs. A filter charged with polarite was working for several months near Paris, and in October, 1892, samples were taken from the filter and sent to the Paris Municipal Laboratory. Mons. Girard reported, in regard to those samples:—

Bacterial colonies (including disease germs if present), per cubic centimetre..... 13,000.
Bacterial colonies, per cubic centimetre, after filtration through polarite None.

Polarite filters are working in Paris, and at several other places in France, and the experiments to which I have just referred proved clearly that impure water, containing bacterial colonies, passed through polarite, is quite cleared of them. I could give you recommendation after recommendation by distinguished engineers and chemists as to the absolute certainty of the system. It has never been given up when once adopted, and is gaining friends every day. I cannot say anything stronger in support of the system, and had I been designing this scheme I should not have hesitated to place it first.

1383. Then I gather that you are strongly in favour of dealing with the sewage of Parramatta by the International system as against any other process? I am; because I know of no system that would be so effective for that particular place. Of course, I could not say the same thing for the next inland town or any other town. Every place must be judged by its situation and requirements.

1384. Taking all the surroundings of Parramatta, you consider the International process the most effective for treating the sewage of that place? Yes.

1385. Of course you admit that the best way of treating sewage, when practicable, is to discharge it into the ocean? Yes; when that can be done without creating a nuisance.

1386. That is the cheapest and most effective way of dealing with it? Yes.

1387. *Chairman.*] Do I understand that if it were possible you would discharge the sewage into the ocean or some tidal water, and that next in order of preference would come the chemical system of treating it? No; that would be a contradiction of my former evidence.

1388. I understand that you would give the preference to a system of discharging it into the ocean where practicable, and next, if a suitable area could be obtained within convenient distance, the system of treating the sewage upon the land? Yes.

1389. If neither system could be followed, you would fall back upon a chemical system—the International system first? Yes.

1390. *Mr. Davies.*] But at Parramatta it would be impossible to put the sewage into the river without creating a nuisance, and that would not be prudent? That is so.

1391. But you say that if you had a sufficient area of land, the sewage of Parramatta could be effectively treated by broad irrigation? Yes; to a certain limit.

1392. But the best system under the circumstances is the International system? That is my opinion, emphatically.

1393. I think in your former report you recommended that the sewage should be treated at the site of the proposed pumping-station? At a point a little nearer the river.

1394. You propose to run the filtered sewage into Clay Cliff Creek? I did not propose to treat the sewage at the site of the proposed pumping-station; I intended rather to take the sewer along the road leading to the river.

1395. *Mr. Neild.*] You will not use the creek, but would lay a line of pipes down the road to the river? Yes; and discharge the sewage into the river below the water level.

1396. *Mr. Davies.*] The discharge would not create a nuisance? It would be similar to the effluent in the bottle upon the table.

1397. You know the tram-line running almost parallel with the pipe lines? Yes.

1398. If the proposed farm is reclaimed, and the land built up to 5 feet above high-water mark, will that tramway be in any way endangered or impaired? No; I should not think the reclamation would make the slightest difference to it.

1399. Would it not be affected by the percolation of the water? I think not. The difference between the 5-foot level and the present surface would be very gradual. I suppose it would run out at 30 or 40 feet. It would slope out very gradually, and the bank would probably be turfed, so that it would be scarcely appreciable at the margin.

1400. You do not think any injury would arise to the tram-line? No.

1401. Do you think that if an objectionable smell was created by the spreading of crude sewage on the farm, the shareholders in the tramway would be injured thereby? I have already stated that it is possible under certain atmospheric conditions there will be smells.

1402. *Chairman.*] But not of a serious character, you say? Not of a serious character.

1403. *Mr. Davies.*] I understand that you have, to a certain extent, modified some of your objections to the departmental scheme, because of the proposal to raise the embankment and to reclaim some 42 acres of land? I do not know that I have done that. If the Committee will allow me to read the fifth conclusion I came to when previously examined, it would pretty well state my position. What I said then was this:—

That if by reason of the land having already been resumed for the proposed farm at Duck River, it is considered necessary to adhere to the original proposal, I am strongly of opinion that such scheme should not be permitted, unless the method of treatment is supplemented by the before-mentioned process of precipitation and filtration, nor unless a satisfactory assurance be obtained that the reclaimed area will be filled in with suitable materials to a height of at least 5 feet above mean high-water mark, spring tides, as shown upon the accompanying sections.

1404. The evidence shows that that has been clearly provided for;—now comes the question, What population will the present scheme serve? I submit, after having given the matter great consideration, that it would not be safe to assume that the sewage of a greater number than 22,000 people could be poured upon the land. If the population of the place increased beyond that number, and possibly before that, it would be absolutely necessary, either to enlarge the farm, or to resort to precipitation, or some other process for reducing the density of the sewage before it was applied to the land.

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1405. If the population became too big, and the International system had to be adopted, all that would be lost to the State would be the sewage farm? £14,000 would be lost.

1406. That is the farm, plus the reclamation work? No; the farm, plus the reclamation, would come to more than that.

1407. The reticulation and the sewer service in the town would be just as useful for the International system if the land on the sewage farm became surcharged with sewage and useless? Yes.

1408. *Mr. Hoskins.*] I gather from your evidence that in most places where there are sewage farms, there are occasionally, under certain conditions of the atmosphere, very offensive smells? That is so. No doubt the Committee have often heard of the Edinburgh farm, but I think they would have been shocked if they had seen the condition of the things there as I saw it. Still, although there is a very objectionable smell, no serious illness has arisen. The black sewage runs in a water-course right across the land, and the tenant, who has a long-standing lease from the authorities, takes what sewage he thinks fit. If he does not want the sewage, he allows it to run straight into the sea. That sort of thing could not be tolerated in this country, although it is allowed at Edinburgh. At three or four towns within the last eighteen months sewage farming has had to be supplemented by precipitation. They have gone on with the farm until they could go no further, and have then had to adopt another system. At my native city, Coventry, where the works were ample, they, within the last nine months, have had to entirely reconstruct their disposal works, and in several other places they have had to resort to the system which, it has been foreshadowed, will have to be adopted here, namely, the precipitation system.

1409. The experience of other countries is that in course of time sewage farms must be supplemented by other systems? Some of them have been. I could give you the names of several such places. It has been done at three or four places within the last twelve months.

1410. If many of these farms become a nuisance under the atmospheric conditions existing in the mother country, do you think that similar places would be more likely to become a nuisance under the much higher temperature of the atmosphere here? I think so, unless they were very carefully managed. I do not anticipate that there would be any trouble on such land as that at Webb's Grant for many years to come, because the amount of sewage delivered there now, compared with what will come down when the whole of the western suburbs scheme is in operation, is very small. They will eventually, however, have to deal with a large volume of sewage, and then great care must be exercised.

1411. *Chairman.*] They treat the sewage of 1,000 persons to the acre now? To my mind, that is very unwise, and should not continue. Mr. Roebling, speaking of the Berlin sewage farm, which is supposed to be the latest and an altogether model institution, and has been largely discussed and referred to throughout the sanitary engineering world, says:—

There can be no doubt that the rest obtained by the land plays a most important part in sewage-farming, and too much stress cannot be laid on this fact, as upon it largely depends the success of any farm. From the experience gained on the Berlin farms, it may be concluded that not more than from 2,000 to 3,000 gallons of daily sewage flow should be allotted to each acre, a state of things which practically prevails on the northern farms.

So you see that his idea as to the amount of sewage which you can put upon a farm is very different from the idea in regard to Webb's grant, and I am convinced in my own mind that the system pursued there will have to be very much modified as time goes on. At present you might apply the sewage of 2,000 persons to an acre of that land, and it would deal with it, but the time will come when you will have to go back. This all arises out of the question of the different climatic conditions. In Berlin, in the summer time, they have extremely hot weather—a much higher temperature, I believe, than we have in Sydney—while it is very cold in winter.

1412. Berlin farm is on a sandy plain? The farm to which I refer is of enormous extent—17,000 acres or something like it, and mostly sand.

1413. It therefore offers great facilities for the treatment of sewage? Yes.

1414. I gather from your evidence that you think the day is not very remote when extra care will have to be used at Botany to prevent the sewage becoming a nuisance? At any rate, extra care will have to be exercised to perfectly purify the sewage in the first instance. If that is not done it will be a nuisance; but the position of the Botany sewage farm and the position of the proposed Parramatta farm are very different.

1415. Did you understand, when you were first examined, that it was proposed to raise this land by depositing sand on it to the height of 4 or 5 feet above high-water mark? I did not understand that in 1892.

1416. Supposing sand was deposited on the land to the height of from 4 to 5 feet, how long do you think the area could be safely utilised as a sewage farm without its becoming so foul as to be of no value for purifying purposes? I think that under proper conditions it could be used with only occasional cause of complaint—no serious cause of complaint—until the population draining upon it numbered 22,000 persons. I could not tell you how long that would be. I take the number of persons, because that means a certain volume of sewage. I would not dream of designing a farm to take the sewage of, say, 1,400 persons per acre. It would be most unwise.

1417. You think, from the experience you have gained, that it would be most unwise to turn the sewage of 1,000 or 1,400 people upon an acre of even sandy land remote from the sea? Yes, permanently.

1418. Can you give the Committee an approximate estimate of the cost of preparing the proposed farm, including the cost of depositing the sand to a height of 4 or 5 feet, levelling it, and properly preparing it, the cost of the pumping station and everything connected with the scheme? I think I stated just now that I estimated the cost of everything below the pumping station, including the rising mains and the farm, together with the work already done and to be done, at £33,000.

1419. That includes the cost of depositing the sand to the proposed height? Yes.

1420. *Mr. Trickett.*] By reading the papers before the Committee you will see that Mr. Hickson advocates the partially-separate system, whereas the special commissioners advocate the totally separate system? I have observed it.

1421. You do not believe in the separate system? I have no faith in it as an efficient system.

1422. Do you approve of the partially-separate system? That is the system I approve of, and the system that has been adopted in connection with the western suburbs sewerage scheme and other schemes which have come before the Committee.

1423. And you advocate it for this work? Yes.

1424. Could you give the Committee any instance where the separate system has proved a failure? In my report on sewage purification, dated 1891, I referred to the Dorking sewage works. The following is a quotation dealing with the subject:—

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Dorking is in the county of Surrey, and contains a population of 7,000 persons. The sewers are on the separate system, but the total exclusion of rain water from roofs and yards caused considerable trouble to the working of the house drains and pipe drains at first. This has now been remedied by admitting part of such rainfall.

It is not more than two months since I read in a Surrey newspaper which was sent to me, an account of the completion of the rectification of the defects of the Dorking system. Fever and serious illness had occurred in the town entirely caused by the sewer gas generated in the house drains. It was stated in the paper, however, that everything has now been put right by the adoption of the partially separate system, and the scheme is working satisfactorily.

1425. Another witness, whom I questioned about the matter, thought that the failure of the separate system was in all probability attributable to the bad laying of the pipes;—can you say if that was the case? It certainly was not. The system itself was to blame. I went round the works with the officer in charge, but at that time I had not the remotest idea that a question such as this would crop up. I gathered from the report of the newspaper alluded to that they had tried the separate system originally, but had had a good deal of trouble with it, and were altering it.

1426. Experience proves that drainage matter will not go through the pipes properly without the aid of rain water to help it along? Yes. I should like to point out to the Committee that in the report which was handed in in connection with the western suburbs sewerage inquiry, I made a statement in connection with the separate system very clearly setting forth the objections to that system.

1427. *Chairman.*] Will you read the paragraphs to which you refer, and which you wish to incorporate in your evidence? The paper from which I wish to quote is an Appendix to the report of the Public Works Committee on the Western Suburbs Sewerage Scheme. There I say:—

The separate system *per se* is a method which necessitates one set of sewers and drains for sewage, and a second set for surface waters from roofs, paved yards, and streets, and for subsoil waters. In the few towns where the so-called separate system has been carried out, it has involved the construction of either a duplicate or triplicate set of channels, but in no instance has it been found practicable to rigidly exclude the rainfall from roofs and paved back yards.

The insanitary results of such a system in dry seasons must be obvious. The storm-water drains for conveying rainfall and surface waters from streets, roofs, and paved yards would practically become sewers. Washings from paved yards are so highly impregnated with organic matter that it is necessary to intercept such waters, and deal with them in the same way as ordinary sewage. The sides and inverts of the storm-water sewers would become fouled, and in dry weather the gases evolved would be nearly as offensive as in the case of a sewage sewer. Thus, the evil complained of would be duplicated.

I also quoted the opinion of Sir Robert Rawlinson, K.C.B., for many years Engineer-in-Chief to the Local Government Board in England, and a leading authority on sanitation. He was against the separate system, as was also Sir Joseph Bazalgette, C.B., who was for many years Engineer-in-Chief to the Metropolitan Board of Works, and who said, in reference to the Separate system:—

How to dispose of the rainfall is a question of considerable difficulty, and has given rise to much diversity of opinion. This arises from the fact that whilst in itself harmless, it sometimes falls suddenly in large quantities. *These considerations have induced theorists to advocate that the rainfall should not be allowed to flow off with the surface, but should be dealt with by a separate system of sewers. The theory is, however, most impracticable.*

Mr. James Lemon, M.I.C.E., a strong advocate of the Separate system, and a gentleman who has carried out several large works, says:—

The foregoing opinion of Sir Joseph Bazalgette, coming from so eminent authority, was a heavy blow to the Separate system.

He goes on to say, in a paper he read at an annual congress of the Sanitary Institute of Great Britain:—

“What is the ‘Separate system,’ so-called? Does it mean the *entire and absolute separation* of the rainfall from the sewage? If so, then I say at once that there is no town in England where it is carried out.” With regard to the sewerage of the city of Winchester, which he had recently carried out, he stated that he “knew of no town where there are such natural facilities for carrying out the Separate system in its integrity.” In the scheme, however, he excluded surface drainage, and provided for the sewage and a small quantity of rainfall from the houses, feeling confident that a margin for rainfall under the most favourable circumstances was necessary.

I also referred to Abingdon, where the Separate system is carried out, but there they admit the rain-water from the roofs and back yards, and have no less than three systems of drainage—one for sewage, one for storm-water, and one for sub-soil water—the consequence being, that they have to pay a drainage rate of 1s. 7d. in the £. I concluded by saying that:—

I think it has been clearly shown that the system contemplated (for the western suburbs, the partially-separate system) is not only in accord with common sense, but its efficiency must be obvious to all practical men.

1428. Can you give us any instance where the Separate system has been adopted of late years? I do not know of any place where the absolutely Separate system had been adopted. I take it that the Commission who reported on this matter advised the total exclusion of rainwater; but I am totally at variance with them. I think it has been clearly shown that it is a very dangerous system to adopt. There is one other point in connection with their report with which I should like to deal. I saw that Mr. Bell advocated the total exclusion of rain-water from the sewers, and he stated that he would not touch the gradients that had been devised by the department, though he would reduce the size of the pipes, probably, from 15 to 12 inches, and from 12 inches to 9 inches. I should here like to mention that a Mr. White, who read a paper on the separate system before the Institution of Civil Engineers some years ago—it is the latest report on the system—stated that the rain-water from roofs and back yards should be taken in. The separate system, as commonly understood, means, apparently, the exclusion only of street surface water, the water from roofs and back yards being admitted. Mr. White said also that the velocity of the low-level flow should not be less than 135 feet per minute. Applying that to the suggestion of Mr. Bell, and taking a 12-in. pipe, which, as was shown in the former evidence, it is proposed to lay down at a grade of 1 in 300, if the pipe was only half full of sewage there would be a velocity of 172 feet per minute. Reducing its size to 9 inches, the velocity would be only 147 feet per minute. If the pipe was only flowing one-quarter full, however, as it would be for the greater part of the day under the absolutely separate system, the velocity would be considerably less; it would, in fact, be only 111 feet per minute, and would not be self-cleansing. It is clearly laid down in all the reports on the subject that the minimum self-cleansing velocity of well-diluted sewage should not be less than 2 feet per second.

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second. For Sydney I think Mr. Clark said 150 feet per minute, that is $2\frac{1}{2}$ feet per second. If Mr. Bell's proposal was carried out, however, the velocity would be not greater than 111 feet per minute for long periods during every 24 hours. That is one instance, and I could multiply such instances in dealing with the dimensions of other pipes, but I think what I have said will show the Committee the risk that would be incurred by substituting a smaller sized pipe for a smaller flow of sewage, without making the inclination greater.

1429. But in a hot climate like this, where baths are very much used, would not the bath-water help to cleanse the pipes? Most people take their baths between 7 and 9 o'clock in the morning, but the hottest period of the day is later on.

1430. You have no reason to alter your opinion in regard to the separate system? None at all.

1431. You strongly advocate what is known as the partially separate system? Yes. When I first commenced my professional career, at Coventry, we had to pull up some miles of pipe drains in one part of the city. When the sewerage there was originally carried out, some twenty-five or thirty years ago, there was a great craze for treating house sewage only, and using small pipes, and the consequence was that in a few years a number of the pipes had to be taken up, because they became partly choked with the sewage.

1432. *Mr. Neild.*] Would that apply to the 9-inch pipes laid throughout the suburbs? No; because they are probably laid at such an inclination that there is a self-cleansing velocity.

1433. *Mr. Trickett.*] During your last examination, page 43 of the Committee's report, Question 1233, you were asked:—

What do you make the total cost, abandoning the sewage-farm altogether?

To that you replied:—

I can put it in this way—that under the departmental estimate, the present outlay, and the prospective outlay for sewage disposal—that is, pumping and treating the sewage—amounts, according to the evidence, to £42,375.

Does that mean that your system of precipitation could be carried out for £42,375? That is the departmental estimate.

1434. Then I want to know what your estimate is for precipitating the sewage of Parramatta, and discharging it through a pipe into the river? I stated this afternoon that I put the cost of everything below the pumping-station in the departmental scheme at £33,000, and I added that by substituting the International system, and taking into consideration the less lift there would be for the pumps, and the consequent reduced cost of machinery, the difference would be £20,000.

1435. But what would the whole outlay be? I am afraid that I cannot tell you at the present moment; but supposing the cost of everything above and including the pumping-station was £50,000, that plus £33,000, the cost of everything below the pumping-station according to the departmental design, would make the total cost of that scheme £83,000; while, on the other hand, the cost of my scheme would be £50,000, plus £13,000. What the cost is up to and including the pumping-station, I cannot at this moment determine. Mr. Hickson, in answer to Question 68, says that the whole of the works are estimated to cost £75,926, but from his answer to Question 75, it appears that there will have to be an additional expenditure of £55,128 for future completion. Part of that money, no doubt, will have to be spent above the pumping-station, and part of it below the pumping-station. If the Committee will allow me to look into the matter I will send the information you require to the Secretary.

1436. Apparently the conclusion at which you arrive on page 85 of our last report on the subject has, in a measure, been swept away by the Government proposing to adopt some of your recommendations? Which conclusion?

1437. The conclusion which you read just now; there you advocate the system of precipitation and filtration? In that case it is earth filtration.

1438. Where would it take place—on the farm itself? Yes.

1439. Then you propose filtration on the farm, and an intercepting filtering station half-way down? No; the precipitation as well as the filtration would be done on the farm.

1440. You still believe in the necessity of precipitation and filtration? Yes, as I have previously stated, when the population increases sufficiently. This scheme was devised for a prospective population of 48,000. At present the population is not more than 14,000 or 15,000; but I think that when it reaches 20,000 or 22,000 precipitation should be resorted to.

1441. You say, as your third conclusion, "That the purification of the sewage could be more efficiently ensured by adopting the International process of precipitation and filtration?" I say so still, because the works can be carried out without any possibility of a smell or a nuisance arising, and the effluent is so clear, and is carried away at once.

1442. I understand that you are still of opinion that it would be better to adopt the International process than to have a sewage-farm? I have stated that already. I only admit the latter suggestion on the ground of expediency. I have guarded myself on that point all through.

1443. Mr. Hickson says, in his reply to the report of the Parliamentary Standing Committee on Public Works:—

The objections raised to all chemical precipitants yet known are based on very substantial scientific grounds. Their action is at the best partial. They act as clarifiers rather than purifiers of the sewers. Although the effluent may be discharged perfectly clear, it still retains nearly the whole of the salts originally found in the sewage, and, therefore, putrefaction must rapidly follow, unless the body of water into which it is discharged is sufficiently large to complete the process of oxidation.

Do you agree with that? No; I do not, and I have evidence here which is distinctly to the contrary.

1444. Could you give us the names of the scientific men whose views are not in accordance with Mr. Hickson's statement? I have a statement of the late Mr. T. Hawksley, F.R.S., and a few years ago President of the Institution of Civil Engineers. He said of it at an inquiry at Worcester, on the 14th December, 1892:—

I could not imagine a more complete system of treatment of sewage than that proposed. There would be no odour, nor any nuisance to anyone.

He was then referring to the International system of sewage purification. That was at a Government inquiry at Worcester, presided over by Colonel Ducat. In England, before a Town Council can carry out any large scheme of sewerage or water supply, a Local Government inquiry is held. At Worcester they had an inquiry in 1887 into the process of treatment with lime, which was rejected. In 1890 a process of treating with lime and aluminium was also rejected. Then the process of treating with ferrozone and polarite, backed up by recommendation of Mr. Hawksley, was adopted. At another inquiry at Birkdale, Dr. Frankland, F.R.S., gave evidence in support of

of the system, as also did Mr. Manserge, M.I.C.E., who advised upon a system for Melbourne and other places. Then, as to the opinion of chemists upon this subject, there is the report of Sir Henry Roscoe, M.P., F.R.S., one of the most eminent living chemists, Professor Davies, Dr. Arthur Angell, Dr. Carter Bell, and others in England and abroad. I have also before me the result of tests of sand and gravel filters compared with polarite filters. One engineer says, that though at first he was very sceptical of the process, he now thinks it the best system of purification. I have also evidence to show that where the effluent has been kept for over a year, and allowed to remain exposed in tanks, it has, at the end of the time, been found perfectly good, not having changed its colour, or altered its character in any way.

1445. So that, apparently, Mr. Hickson's statement does not accord with the opinion of recognised authorities? No. One of the latest reports on the subject is that written by the Director of Public Works, Philadelphia, in September, 1893, who tested and analysed the results of polarite filtration and sand filtration, and notes that the albuminoid ammonia left after sand filtration was '064, while after polarite filtration it was only '034, there being no turbidity, no colour, and no smell.

1446. Your opinion is that the effluent would be quite unobjectionable? I am quite sure of that from what I have seen myself, and from the opinions of eminent English engineers and chemists, which I have read.

1447. *Mr. Neild.*] Are the majority of sanitary authorities in the old world engineers, or are they biologists? There are some of each. The opinion of engineers like Sir Robert Rawlinson, Mr. Baldwin Latham, Professor Robinson, and men of that class, is quite as weighty as that of other gentlemen to whom I have referred, such as Sir Henry Roscoe and Dr. Dupré.

1448. In the old world is it recognised that engineers are competent to deal with questions of sanitary engineering? I am amused by such a question. The engineer and the chemist always go hand-in-hand in those matters.

1449. It has been stated here that engineers should simply carry out what the biologist teaches;—is that opinion supported by the practice of the old world? Certainly not. I never heard the point raised before.

1450. Engineers are recognised as authorities, not merely as executants of the ideas of biologists? Unquestionably that is so.

1451. Then you do not agree with Professor Anderson Stuart that engineers should merely carry out what the biologist teaches? No. I think that is an amazing assumption.

1452. I suppose you know all about the *micro-coccus nitrificans*, otherwise known as the friendly microbe? I have heard of him.

1453. You know all about the operations of the friendly microbes? I do.

1454. Is it recognised in the old country that in order to have a sewage-farm you must cultivate the growth of these microbes? I cannot say that it is. There are theorists who urge that view, but it is not generally accepted.

1455. Are you aware that efforts are made to breed the friendly microbes before a farm is considered to be of any value? I have only heard of them being bred in a chemist's laboratory; I never heard of such a thing being deliberately done on a sewage-farm in England.

1456. Is sewage farming in the old world recognised as the process of filtration through the soil, or as a process of breeding microbes to consume the impurities? I think we pretty well understand that both processes operate.

1457. Is it customary to put entirely out of consideration the effect of filtration, and attach all importance to the presence of the friendly microbe? I am not aware that the latter point is considered from a practical point of view.

1458. How do you look upon it? I look upon it as a theory which may develop into something useful.

1459. It is not recognised as a practical way of dealing with sewage? No.

1460. I will read you one little sentence from the evidence taken by the Committee:—

You do not seem to attach very much importance to the effect of the soil in purifying sewage matter? Yes; and for this reason, if you take soil and sterilise it, that is to say, if you heat it, so as to destroy the organisms to which I have referred, or if you chloroform it so as to suspend their action, it has no longer any purifying effect upon sewage. It is because of the organisms in it that soil is an active agent in purifying sewage.

Does that answer represent the present practice in the old world with regard to sewage farming, or does it represent the theories of the laboratory? I incline to the latter opinion.

1461. You know all about the 22 acres of high land;—you took samples, and tested them about eighteen months ago? Yes.

1462. In answer to one question we were told that that land was fairly good soil for the purposes of sewage purification;—does that answer coincide with your view on the subject? Yes; I rather like that soil, and I think I stated so in 1892. The 22 acres, if properly prepared, would purify the sewage better than the sand would do.

1463. You regard it as fairly good? Indeed I do.

1464. In answer to the next question the same witness says, "I think the land is admirably adapted for the purpose";—which of the two answers do you think most accurately describes the land? I think it can be truthfully said that it is good.

1465. You would not call it "admirably adapted"? No; I should not, but it is suitable for the purpose.

1466. In another answer the witness states that the 42 acres of reclaimed land would provide effectively for the sewage of 56,000 persons—four times the present population—that would be at the rate of about 1,333 persons per acre;—do you think it would be safe to attempt to deal with such a quantity of sewage to the acre? I am certain that it would not.

1467. We were told that the friendly microbe is the purifying agent in soil, and that until he is cultivated the process of purification is imperfect;—you said just now that after a time it was possible for soil to become so surcharged as to cease to act as a purifying agent? I do not think I said "cease"; it would very much deteriorate.

1468. Is any knowledge possessed by sanitary engineers or biologists which would fix the condition of things when these friendly microbes cease to operate; in other words, do they become choked out by the presence of too much sewage matter in the soil? I have no information whatever on the point. What I can say is, as the Committee are aware, that sewage farming and irrigation have been carried on in different parts of the world for many years past, but in some places, as you know, the system has partly failed.

- G. H. Stayton, Esq., M.I.C.E.
27 Feb., 1894.
1469. From there being too many microbes or too few? This happened before we knew anything about the microbe theory, and I want to know, now that that theory has been formulated, what practical difference it makes. To my mind the question resolves itself into a matter of plain common sense. If there is no smell on the ground, you need not trouble much about microbes or bacteria.
1470. *Chairman.*] Friendly or unfriendly? Friendly or otherwise. I picked up an extract from a newspaper a few days ago wherein the writer shows that if you carry out this theory to the fullest extent, no matter what you do you must run a risk. Two chemists found out some time ago that a couple of bank notes, which had been in circulation for a few years, contained, according to their estimate, 19,000 or more microbes each. We should be told, I suppose, that wherever there is dirt or filth there are these microbes. As far as sewage farming is concerned, this theory may lead to something practical by-and-by, but what we have to consider is, microbes or not, is there likely to be a nuisance.
1471. Assuming that the evidence that we have had as to the presence of microbes being necessary to ensure purification is correct, I want to know how the theory will fit in with your statement that after a lapse of time the soil may become surcharged, and be ineffective for purification;—where is the line to be drawn? I take it that after a time land cannot be properly oxidised, and therefore the microbes cannot live.
1472. Have you any knowledge of the life of fascine work necessary to secure the filling in of this farm? No, I have not; I have had no experience of work of that kind, and my opinion in regard to it would be worth very little.
1473. *Mr. Humphery.*] Have you estimated what would be the total annual cost of maintaining your system? I have done so; but I have not the figures before me at the present moment.
1474. Will you add that to the estimate of cost with which you have promised to furnish the Committee, giving details? I will.
1475. *Mr. Neild.*] Adopting the International system, how would you deal with a large volume of storm-water;—would you turn it off, or pass it through your filters? It would pass through the filters. Of course there would be storm-water overflows as proposed in the departmental scheme, to provide for the safety of the sewers; but the ordinary storm-water coming in from the back yards and roofs would be treated in the same way as other sewage.
1476. Your filter-beds will be sufficiently large to cope with it? Yes.

WEDNESDAY, 28 FEBRUARY, 1894.

Present:—

JACOB GARRARD, Esq. (CHAIRMAN).

The Hon. WILLIAM HENRY SUTTOR.	WILLIAM CHANDOS WALL, Esq.
The Hon. JAMES HOSKINS.	WILLIAM McCOURT, Esq.
The Hon. FREDERICK THOMAS HUMPHERY.	JOHN CASH NEILD, Esq.
The Hon. JOHN DAVIES, C.M.G.	EDWARD WILLIAM O'SULLIVAN, Esq.
The Hon. WILLIAM JOSEPH TRICKETT.	CHARLES COLLINS, Esq.
THOMAS THOMSON EWING, Esq.	HENRY DAWSON, Esq.

The Committee further considered the proposed Sewerage Works for Parramatta.

Robert R. P. Hickson, Esq., M.I.C.E., Commissioner and Engineer-in-Chief for Roads and Bridges and Sewerage, sworn, and examined:—

- R. R. P. Hickson, Esq., M.I.C.E.
28 Feb., 1894.
1477. *Chairman.*] You gave evidence before the Committee when this work was being considered by them about fifteen months ago? Yes.
1478. *Mr. Suttor.*] Have you any further information to give us with reference to the total cost of the scheme? No, except, of course, that prices have so altered now that I think that if the work were put on the market at once a considerable saving could be effected. I have not taken that into account, however. I have made a fair estimate of what the work should cost. Of two large sewerage works that have been let within the last three months one has been let at 17 per cent. below our estimate, and the other at as much as 30 per cent. below it.
1479. Do you recollect what estimate you gave for this work when you were last examined? £75,926.
1480. That does not include an additional cost which, I understand, will have to be incurred? There will be no additional cost.
1481. You are satisfied that the work could be carried out for that amount, with the probability of some reduction being made? I am quite satisfied of it. If we were prepared to put it upon the market during the next few months, we could get it done for much less.
1482. *Mr. Ewing.*] Does the amount you have just given us include the cost of the sewage farm? It includes everything.
1483. The fascine work? Yes.
1484. The pumping of the sand? No.
1485. How much more would that make it? Nothing at all, because the work will be done by the Harbours and Rivers Department. They want a depot for their material.
1486. It is a convenience to them to be able to send the stuff there? So Mr. Darley told me yesterday, and it has, therefore, not been taken into our estimate.
1487. Have you made an estimate of the cost of maintaining the scheme after it has been carried out? In my previous examination I said that the cost of maintenance, together with the interest on the outlay, would come to £4,268.
1488. You regard that estimate as ample? It is too much, because we know from what is about to take place at Botany that the sewage farm will not cost us anything. I have allowed for the working of the sewage

R. R. P.
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sewage farm on the assumption that we should get no return from it; but now the Water and Sewerage Board are dealing with two parties—I do not know that it would be right to give you the terms, as the matter has not been finally settled—who are prepared to take the farm off our hands and pay us rental for it, and I think that the cost of the Parramatta farm might be reduced in a similar way.

1489. This estimate of the yearly expenditure takes it for granted that the pipes and syphons will work properly—there is nothing put down for repairs? It is estimated that the amount will pay off the whole cost in sixty years. Of course, in addition to that, there are the working expenses and the cost of repairs to engines, and so on, to be met.

1490. That is, supposing the pipes do not choke and the syphons work all right? There are no syphons.

1491. There is nothing of that kind. It is a gravitation scheme right through? There is a rising main from the pumping-station to the farm, but there are no syphons.

1492. You take it for granted that there will be no leakage in the pipes or anything of that kind? The whole thing will pay itself off in sixty years, and the estimate includes the cost of any ordinary repairs which may be necessary during that time.

1493. Do you desire to alter your previous evidence at all? As to cost?

1494. As to anything? I do not think so.

1495. Judging from a communication which we have had from you lately, your opinion in regard to sewage farms has been strengthened? Yes; very much strengthened.

1496. *Mr. Collins.*] What would it cost to fill up the 42 acres, if the Harbours and Rivers Department did not give the sand free? That is a question which I could not answer. Mr. Darley says that it would cost him as much to take the material out to sea as to deliver it there.

1497. The working of the dredges is charged against the department? The Harbours and Rivers Department pay for that work. Up to a couple of years ago, they used to send whatever they dredged out to sea, and it costs them a certain amount—I cannot tell you how much—but Mr. Darley tells me that it would not cost any more to put it on the site of the proposed farm.

1498. What has been the cost of the fascine work? We have paid £1,089 for what has been done.

1499. What would it cost to keep the fascine work in repair;—it would want repairing every year, would it not? I could not say; but it would be only a very small item.

1500. Is it included in your estimate? It was not specially taken into account.

1501. What would it cost? A very small sum, judging from what has occurred at Cook's River, where the work has been standing for eight years without anything being done to it.

1502. How long do you think this work would remain without repair? I could hardly say. It would last for years and years.

1503. Do you think it would last twenty years? I think that if it were properly made it would. The only accident that could take place would be caused by the bank slipping, owing to dredging that might be going on alongside. Under other circumstances the bank would last for years.

1504. If sand was put behind it, would it be likely to be forced out by the sewage matter? No; it would be strong enough as a retaining wall.

1505. *Chairman.*] How many tons of material would have to be placed on behind the fascine banks for the purpose of raising the land to the required height? About 600,000 tons.

1506. That would be an average height above high-water mark of 5 feet? Yes; 5 feet.

1507. In some places, I suppose, 9 or 10 feet would have to be filled in? I should say that the deepest place would be 9 feet, running off to nothing.

1508. You think that that estimate is approximately correct? Yes; the quantity was taken out a few days ago.

1509. The Harbours and Rivers Department would be able to give us full information as to the cost of landing the soil;—it does not come within your department? No.

1510. We understand, from the answer given to Mr. Suttor, that the total cost of the proposed work will be £75,926, and, according to the evidence you gave when last before the Committee—page 6, Question 72—the work above the pumping-station—mains, reticulation, and so on—will cost £53,416;—is that so? Yes.

1511. And the balance—£22,510—would be for the works at the pumping-station and the sewage farm? Yes.

1512. Was it the intention, when this scheme was first put before the Committee, to raise the sand-banks to a height of 5 feet above high-water mark? Yes.

1513. Can you point to any evidence given in the early stages of the inquiry, which would leave that impression? Yes; I think so, though the depth is not directly mentioned.

1514. May I direct your attention to Questions 60 and 61 in the evidence taken in 1892:—

60. I understood that 49 acres were resumed, and that the other is to be made up with silt? Forty acres have been resumed, and 22 acres 1 rood 2½ perches have been included in the fascine bank which is put in. It did not require to be resumed, because it is Government property. The whole area contains 62 acres 1 rood 3½ perches, the western portion of which is above spring-tide level, while the eastern portion is below mean high-water level.

61. About how much? About a third. The latter has been already enclosed with fascine embankments, and is to be filled in with sand pumps from the river above highest spring tide, after which it will be divided by raised roads running north and south, and east and west.

Is it not a fact that only one-third is above high-water level? There is a mistake there. We originally thought that we should have to resume only 49 acres. It was supposed that the rest of the land was Government property, being under the influence of the tides; but, as a matter of fact we had to resume 62 acres 1 rood 13½ perches.

1515. How comes it that the Government had to resume land below high-water mark;—have grants of land ever been made to any private individual, giving rights to land under the sea? That is a question I could not answer. The matter was dealt with in the resumption branch. All I can tell you is that the land had to be resumed, and it has been paid for.

1516. As a matter of fact, the ordinary boundary of private land is high-water mark? I always thought so.

1517. That is the invariable custom and law? Yes, as far as I know.

1518. But in this case, for reasons of which you have no knowledge, compensation had to be paid for land below high-water mark? Yes.

1519. Coming back to the questions to which I have just referred you, instead of about one-third of the total area of 62 acres being subject to tidal influence, nearly two-thirds of that area is so subject? Yes.

R. R. P. 1520. Will you now look at Question 62, "Are you going to put in clean sand or silt? Ordinary river
Hickson, Esq., sand." There is nothing there about any proposal to raise the farm 5 feet above high-water mark. Now
M.I.C.E. turn to page 9, Questions 167, 168, and 169:—

28 Feb., 1894. 167. What is the height above water-mark of that portion of Webb's Grant which you have under cultivation. I should say from 4 to 6 feet.

168. Assuming that sand does not actually absorb, but acts as a filter for sewage, the opportunities for getting rid of sewage matter would be very much greater at Webb's Grant than on the proposed farm at Parramatta, the height of which is so much lower? It will practically be the same when it is finished.

169. To what extent do you propose to fill in to cover the portion which is now above high-water mark? The fascine bank we have made around the farm is of the same height above high-water mark as the fascine bank in Cook's River, so that the finished level of the farm at Parramatta will be within a foot or so of the same level as the farm at Webb's Grant.

Do you think it could be gathered from that evidence that it was your intention to raise the land 5 feet above high-water mark? Yes; I think so; but the first part of the reply to Question 169 is certainly wrong, though I suppose I gave it that way. As a matter of fact, the concluding portion—"The finished level of the farm at Parramatta will be within a foot or so of the same level as the farm at Webb's Grant"—really governs the sentence. That land runs from 4 feet at the lowest part to 6 feet.

1521. I presume you will admit that the answers just quoted are capable of being misunderstood? Yes; I think they are. The first portion of the answer to which I have referred is certainly not correct.

1522. Now turn to page 48, when you were re-examined after Mr. Stayton had reported upon the proposed scheme, Questions 1370 and 1371:—

1370. *Dr. Garran.* In the report which you have been good enough to make on Mr. Stayton's report, you say, "I contend, therefore, that his conclusions, being based on incorrect assumptions, are of no value, and are quite misleading." Will you state, categorically, what the incorrect assumptions are? The incorrect assumptions are, that the level of the sewage farm will be 1.88 feet—practically 2 feet—above high water, and further, that he has taken samples from a portion of the land that will not be used as a filtering medium.

1371. Do you agree with him that we want not less than 4 feet of good filtering soil? Yes; I have said so in my evidence. I was then referring to my answer on page 9.

1523. Which, to say the least of it, is a very vague one;—do you admit that this is the only evidence given by you which refers, even in an indefinite way, to the necessity of raising the land 5 feet high; do you know of any more definite statement? I could not say that there is a more definite statement without going through the evidence from beginning to end.

1524. In a reply to the report of this Committee, which you furnished to the Minister, you stated that you were in possession of a large amount of detailed information which you thought it was not necessary to put before the Committee. Do you not think that it was not only unfair to yourself, but also unfair to the Committee, who had to consider the project, that this detailed information, which they were told off to obtain, should be kept back from them? I am sorry that the Committee took it in that way; I certainly did not mean it so. I must, however, repeat what I said there. For instance, not a stroke of the pen more has been put on the plan you have seen, nor has there been a stroke of the pen put on the plans of the tanks and engines and so on. We do not go into the details of the scheme until the Committee has reported on it. We simply give the general features.

1525. But Mr. Stayton, who is somewhat of an expert on sewage matter, when he was examined, said that he had made an estimate of the work required to be done to prepare the sewage farm, and that it would be necessary to raise it 5 feet above high-water mark; but, owing to these details being suppressed, he could not say whether the cost of that work had been taken into consideration by the Department? I gave the cost of the work in the report which was before the Committee when they made their recommendation. You will find the information on page 80 of the Committee's report. The Committee have all the information that I have got.

1526. As a matter of fact, some £16,000 has already been expended on sewerage works at Parramatta, in the construction of stormwater drains and approaches and the erection of fascine banks in connection with the sewage farm? I do not think the whole £16,000 have been spent. I think that £13,000 had been spent at that time.

1527. Let me draw your attention to question 68:—

68. Will you give us some information now with regard to the estimated cost of the work? The whole of the works herein described, exclusive of the future extensions, are estimated to cost £75,926. That sum includes £20,000 for reticulating sewers which are not shown on the plan, and £16,000 already spent on sewage farm and storm-water channel? We were not £16,000 out of pocket at that time, though we were pledged by the contracts which we had in hand to an expenditure of that amount. As a matter of fact, we were only £13,000 out of pocket. You will find that stated on page 2.

1528. But now the expenditure has reached £16,000? Yes; it has almost reached that amount, though I could not tell you what it is exactly.

1529. So that £16,000 has been laid out in Parramatta in connection with this work, but for that money the State is getting no interest, nor is the principal being returned? That is so.

1530. And the State cannot obtain interest for the expenditure until the whole scheme has been completed and rates have been levied? Yes.

1531. The Special Commission, consisting of Messrs. Wardell, Chamier, and Bell, which was appointed by the Minister to inquire into this matter, recommend what is known as the distinctly separate system;—do you approve of the suggested alteration from the partially separate system, which you endorsed when last before the Committee, to the distinctly separate system? No.

1532. You would still carry out the proposed scheme under the partially separate system? I would.

1533. Do you think that if the separate system were carried out there would be a saving, as estimated by these gentlemen, to the extent of 25 per cent. on the cost of the work? The actual saving, supposing we carry out the separate system, allowing the prices upon which we based the original scheme, would be £6,000. But the Committee must remember that there would also have to be an alteration of grades, because, with the separate system, the proposed sewers would not be self-cleansing. To alter the grades we should have to cut down very much deeper, and at the pumping-well, for instance, we should be discharging at 7 feet 6 inches or 8 feet lower down than proposed. If we did that we should come under the tidal influence, and the cost of making the sewer would be increased to very much more than the schedule rates placed beside the various items.

1534. Then you do not agree with Mr. Bell that the same grades would do for the separate system? I do not.

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1535. If you had to go down 7 feet more to get the proper grades you would have 7 feet more to pump the sewage up to the delivery main? That would not make very much difference, because there would be a less volume of sewage to pump, and one would balance the other.

1536. But the difficulty and expense would be increased by the necessity of making steeper grades, which would be self-cleansing? Yes; we have reduced the quantity of water going into the Parramatta sewers to a very low amount indeed.

1537. A very much lower amount than is the case with the western suburbs sewerage? Yes; at Parramatta we have included the water falling on the yards and roofs, but it is possible that we may omit the roof water and take in only the yard water. Of course I need not point out that the less sewage we have to pump the better, not only for the pumps but for the sewage farm. It is just possible that we may be able to keep the roof water out of the sewers; but what we should save in that way is not worth mentioning.

1538. Will the sewage conveyed by the mains from Parramatta to the pumping station be delivered on to the farm without creating any nuisance to the neighbourhood;—will it be conveyed through hermetically sealed tubes or cylinders? It will be completely sealed up, and there will be no nuisance whatever.

1539. It would not come into contact with the atmosphere at all? It would not come into contact with the atmosphere.

1540. Have you any recent information as to the success or failure of the International system of dealing with sewage? I have no information dealing directly with that system. What information I have I laid before the Committee in a short report, showing that all chemical processes so far had been a failure.

1541. Is it the general opinion of those engaged in the construction of sewerage works that the best way of dealing with sewage is to take it out to sea? Yes; I think it is better to get rid of it entirely, if you can.

1542. But if you have a suitable area of ground within a reasonable distance which can be utilised as a sewage farm, the next best way of dealing with it is by the process of intermittent irrigation? Yes.

1543. Failing both of these processes, it must be treated with some chemical precipitate? There is nothing left but to do that.

1544. Would you call the International process a chemical or a mechanical process? A chemical process.

1545. How does it compare with other chemical processes? It is very hard to answer that question, because I can get very little information in regard to it, except from the company itself. The International process is not specially mentioned when chemical processes generally are dealt with, so that there is very little information to be obtained in regard to it, except what appears in the pamphlets issued by the company.

1546. Suppose the departmental scheme were carried out, and the sewage farm were found to be a nuisance, I suppose it would be possible to try the International or any other chemical process of precipitation at the pumping station? Certainly.

1547. Only whatever work has been done below the pumping station would be thrown away? Yes; though I am not sure that it would all be thrown away, because you would want some land on which to bury the sludge. Sludge is a very unmarketable product.

1548. It is always difficult to find a market for the residuum left after chemical treatment? So I ascertained from the reports which I have received from England.

1549. Is it true that the sludge obtained from the treatment of the London sewage is pumped out to sea and thrown into the English Channel? I know that a great deal of it is sent to sea; I cannot say whether all of it is.

1550. The London authorities find that the most expeditious way of getting rid of it? Yes.

1551. *Mr. Humphrey.*] Are you of opinion that provision could be made for dealing with the sewage of a population exceeding 22,000 at the proposed sewage farm? Yes, I think so, on a sand filtration bed. At Botany we are dealing with the sewage of 1,000 people per acre.

1552. For how many do you think provision could be made at Parramatta? I do not think any of us know the limit of the powers of a sand filtration bed.

1553. Do you feel disposed to venture an opinion on this subject? I do not; and I will tell you why. The Agent-General only the other day sent me a paper describing a test which had been made with a filter bed. The bed was 3 feet 1½ inches deep, and was formed by a bottom layer of stones broken to an inch measurement, 6 inches deep, an intermediate layer of fine stones, broken to a ½-inch measurement, 3 inches deep, and a top layer of sand. That filter was used for several months by putting crude sewage upon it, varying in quantity from 178,290 gallons per acre per day to 484,000 gallons per acre per day; in other words, allowing 40 gallons of sewage for each head of the population, the sewage of a population of from 4,460 to 12,100 an acre was treated on it. The report says: "The quantity applied when the most satisfactory result was obtained was at the rate of 263,780 gallons per acre per day, which is equal to the sewage of a population of 6,600."

1554. What became of the effluent? After elaborate experiments had been made with the filter, the filtering material was carefully examined, and it was found that, except at the actual surface, it appeared to have undergone no change whatever. It emitted only the ordinary earthy smell, and was perfectly clean. None of the effluent, when kept in a room, underwent decomposition.

1555. Where was the experiment made? In London. It was made by Sydney Richard Lockett, M.I.C.E.

1556. Does the report say where the sewage came from? I take it that the sewage was London sewage.

1557. If that system is so successful, what necessity is there for establishing a costly sewage farm? I only quote that experiment to show how little we know of the capabilities of a sewage farm. The experiment was made at the end of last year.

1558. Then your information is quite recent? I only received the paper from London the other day.

1559. Does not what you have said go a long way to support Mr. Stayton's contention that the best way of dealing with sewage is the International process, which is a process of filtration through polarite? No; the results of the systems to which I refer were entirely due to the action of microbes grown on top of the filter bed. No chemicals were used.

1560. Does this recent information which has reached you in any way alter your previously expressed opinion that the best method of dealing with the sewage of Parramatta would be by treating it on a sewage farm? No; it enormously strengthens my opinion.

1561. In what way? Because it enables me to see what a sand filter can do if it is put to it, if I may use the term. I should be very sorry, however, to recommend the Committee to propose the establishment of

R. R. P. of a sewage farm on the lines suggested by Mr. Locoock, because I would like to see more experiments
 Hickson, Esq., made first. I have merely referred to the matter to show that we really do not know what the
 M.I.C.E. capabilities of a sand filter are. We know that at Botany the soil has treated the sewage of a population
 of about 1,000 per acre, and I believe that with the climate we have here, it could do a great deal more
 28 Feb., 1894. if it were put to it.

1562. Your opinion is that the proposed sewage farm would provide for the sewage of at least 20,000 people, and that provision could be made by means of this new method of filtration for dealing with the sewage of a largely increased number? It is hardly a new method—it is really an improvement on the present system; and instead of having the filter bed composed entirely of sand, there is a layer of sand on the top and stones on the bottom. This lets the water and air get through more quickly, and hence you can treat a much larger volume of sewage.

1563-4. You do not care to commit yourself to an opinion as to the population the proposed farm would serve? I have no hesitation in saying that it would serve as many people as the Botany farm has done—1,000 per acre.

1565. If it should be necessary to extend the area of the proposed sewage farm, would it be possible to do it? Yes; you could take the land fronting Duck River. The land is very much of the same character all along that river.

1566. How many additional acres could you reclaim? I could not say without going over the ground; but at all events you could easily double the area.

1567. Does the land there, which is subject to tidal influence, belong to the Government, or would it have to be resumed? I presume that it stands in the same category as the other land.

1568. Have you any information on the subject? No.

1569. Who could give us the information? You could get it through the Under Secretary of the Lands Department.

1570. If there should be any doubt about the area of the proposed farm not being sufficient for the future population of Parramatta, there would be no difficulty in doubling it? No difficulty.

1571. A question had been raised as to the difference in cost between the International system and the sewage farm system; I want you to give me the actual cost of the works above the pumping station, taking as your first item the £6,000 or £7,000 which, in your former evidence, you said had already been spent on storm-water sewers? I think that evidence has been given already.

1572. I want to get it from you definitely now? If you refer to Question 72 of the former evidence, I think you will find all the information there.

1573. Is it correctly stated there that the cost of the works above the pumping station will be £53,416, of which £6,000 or £7,000 has already been expended on storm-water sewers? Yes.

1574. Has the expenditure upon the storm-water sewers been increased since you were last before us? Yes; but only to a very slight extent. I think that £16,000 has very nearly been spent now.

1575. That includes what has been spent on the farm? Nothing has been done to the farm since. We have simply been making storm-water sewers, but I could not tell you how much we have spent on them, without looking at the office records.

1576. If £13,000 had been spent when you were last examined, of which £7,000 were spent on storm-water sewers, and you have now spent £16,000 altogether, though nothing further has been done to the sewage farm, the total expenditure on storm-water sewers up to date must be about £10,000? Yes, about £10,000; but I should not like to be bound down to any definite sum until I knew exactly how the account stood. For instance, we may not have spent the whole of the £16,000, though I think it is pretty nearly all spent.

1577. Have you taken it for granted that the sewerage of Parramatta is to be proceeded with under one system or another, and has this expenditure been made in anticipation of the authorisation of the scheme? Yes; that is the case.

1578. So that is really left for the Committee to say which system should be adopted? Yes.

1579. You assume that sewerage works will be carried out? Yes.

1580. Will you give us the rest of the proposed expenditure above the pumping-station; in your former evidence you gave it as main sewers, £26,416; reticulation, £20,000; and storm-water sewers, £7,000;—are you prepared to say that that would be the total expenditure? I am prepared to say that the work would not cost that.

1581. For how much less than the estimate do you think the work can be done? That depends a good deal upon when we commence. If it is put off for an indefinite period, prices may come up again.

1582. I want to know how much per cent. may be saved on the estimate under existing conditions? I know what has taken place in regard to other contracts, and I do not see why something similar should not take place here. I should say that there would be a saving of 15 per cent.

1583. *Chairman.*] If you went on with the work now? If we went on with the work now.

1584. *Mr. Humphery.*] What would be the cost of the pumping-station? £3,670—that is, including the acre of ground.

1585. What will be the cost of the works between the pumping-station and the farm? There will be delivery mains, costing £7,095.

1586. You also make provision for other works—£3,408? Yes.

1587. That money has already been expended? Yes, practically.

1588. Are you prepared to say that these figures will certainly not be exceeded? The estimate is a very liberal one, and if we were to start work now we could effect a saving upon it.

1589. *Chairman.*] The saving which could be effected if the work were proceeded with now, would apply to all works above the pumping-station? Entirely, you may say.

1590. *Mr. Humphery.*] With regard to the farm—you say that the sand will be given to you free of cost? Yes.

1591. But the fascine work must be charged to the scheme? Yes; we have already paid £1,098 for that.

1592. How much additional fascine work will be necessary? There is only a gap to fill up.

1593. You will not want a side boundary? That has been made as far as we want it.

1594. I understand that the Harbours and Rivers Department propose to deliver the sand free of cost;—what would it cost, presuming you had to pay for it? That would altogether depend upon where we got it from.

1595. What do you estimate would be a low cost? I could not give you an estimate, because if there were no dredges at work, I do not know where we could get the stuff from. The work would, in that case, be most costly and would more than likely involve a totally different scheme. Your assumption seems hardly necessary, because this material must be dredged and got rid of, and the Harbours and Rivers Department can send it to Parramatta as well as anywhere else. R. R. P.
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1596. But the Harbours and Rivers Department will only deposit it alongside the sand pump? No; they will put it right on the land.
1597. Will that not cost more? I can only tell you what Mr. Darley told me.
1598. But it would require an additional expenditure to put it on the land;—at present the silt simply drops from the barges into the sea? Yes; but then there is the loss of time caused by the dredges lying idle in bad weather.
1599. So it would really cost the Harbours and Rivers Department nothing to give you the sand you required? That is what Mr. Darley says, and I think the Under Secretary sent a letter to you to that effect.
1600. Do you know if the use of the International system has been largely extended since 1891? No, I do not.
1601. Mr. Stayton says that over 100 places now adopt the system;—have you any information on the subject? No.
1602. Are you in a position to say he is incorrect? I should be very sorry to say that.
1603. In your estimate of the annual return, which will be available for paying the interest and the cost of maintaining this work—is a sum of £17,000 a year to be charged against the Government institutions at Parramatta;—do you believe that that is the fair annual ratable value of that property? It accords with the information which was given to me.
1604. Do you know the Government institutions at Parramatta? I have been over some of them.
1605. Do you think that a fair annual value is anything like that? I do not know. I think Mr. Vernon, and Mr. Barling, and, I presume, Dr. Manning, made out the estimate.
1606. But you refer to it as your estimate? It was based on what I had been told by those gentleman, who I presume are able to give the information. I had not the least idea what the value of the property is.
1607. Do you think that these institutions are worth anything like £17,000 a year? I should be very sorry, with the limited knowledge I have, to give a valuation. I can only give you the information which was supplied to me by officers who, I presume, are in a position to furnish it.
1608. It is on the assumption that the Government buildings will be rated at an annual value of £17,000 that you estimate that the sewerage rate will not be more than 11d. in the £? That is so.

John William Withers, Esq., Mayor of Parramatta, sworn, and examined:—

1609. *Chairman.*] How long have you been connected with the Municipal Council of Parramatta? On a former occasion I was an alderman for three years, and I have now been an alderman for two years—five years altogether. J. W.
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1610. How long have you resided in Parramatta? About twenty-nine years altogether.
1611. You are familiar with the details of the proposed scheme for dealing with the sewerage of Parramatta? I am.
1612. Your predecessor gave evidence before the Committee when this scheme was last being considered by them? Yes.
1613. Are you aware that since this Committee reported on the subject, a commission of experts so-called have made a report upon it, and your Council has passed a resolution urging the carrying out of the scheme suggested by them? Yes.
1614. I suppose the details of the scheme are immaterial to the people of Parramatta so long as their sewage is dealt with? I do not think the details of the scheme trouble them very much.
1615. Has the necessity for dealing with the sewage of Parramatta increased or decreased since this matter was last before us? I think it has increased, more on account of the Government asylums.
1616. Have the greater number of complaints arisen during the last fifteen months in regard to the insanitary condition of the town? A great many complaints have been made with regard to the pollution of the river, and, if you were to see it, you would not think twice about it. I suppose there are 1,500 persons—I was going to say that half of them are loafers—in the poor houses, and including the gaol, lunatic asylum, and Girls' Home, I suppose the river receives the sewage of from 3,000 to 4,000 people.
1617. As a matter of fact, do not the officials contend that you are in error in making that statement? I do not care whether they do or not. In my opinion the nuisance is caused mostly by the Government institutions.
1618. Are you aware that, as a matter of fact, they have small sewage farms within their own borders on which they treat their sewage? Most of the pollution of the river is caused by Government institutions. Very little sewage goes into it from Parramatta itself.
1619. How do you know? I am quite sure of it.
1620. If we have had the sworn testimony of the managers of these institutions to the effect that they deal effectually with their sewage, and only pour innocuous effluent into the river, does that alter your opinion? No; I am of the same opinion still.
1621. So far as Parramatta is concerned, there is an urgent necessity for dealing with the sewage irrespective of whether the Government institutions contribute an undue quantity or not? There is no doubt about that. The matter has been before the Council for a long time, and no opposition has been shown to it.
1622. Has the population of Parramatta increased or decreased during the last eighteen months? I think that, if anything, it has increased.
1623. To an appreciable extent? I do not think it has increased to a very large extent; but there is a better class of houses being built there.
1624. Was there an increase or decrease in the municipal valuation last year? There was a slight increase last year.
1625. An increase for 1893-94 as against 1892-93? Yes.
1626. The valuation for this year has not yet been made? No.

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1627. Do you think there is likely to be an increase upon the valuation of last year? No; I do not.
1628. Do you think there will be a decrease? I think there will be a decrease on all property.
1629. To what extent? I should not think to a very large extent.
1630. Would it go back to what you received in 1892-93? Very likely.
1631. The increase last year will be counterbalanced by the decrease this year? Yes.
1632. So that the income of the borough for the coming year will be much the same as its income in the year 1892-93? Yes.
1633. Can you tell the Committee what the estimated revenue was last year, and how much was actually received? I did not bring that information with me, but I know that we received about £2,500 from water rates last year.
1634. Was that what was actually received, or was it the assessment? The actual assessment.
1635. What water rate do you pay? Nine pence in the £. We have our own scheme.
1636. Have you raised any loans during the last eighteen months? No.
1637. Then your indebtedness is the same as it was eighteen months ago? Yes.
1638. What was it then—£56,000? I think it was about that.
1639. Have you an overdraft? Yes.
1640. To what amount? About £1,600.
1641. Is it larger now than it was when your predecessor was examined? I do not think so.
1642. Then you have a standing overdraft to that amount? No; we will pay it off during the next six months.
1643. You have borrowed right up to your limit? We have borrowed up to our limit. I should like to know from you what the proposed scheme will cost?
1644. A scheme to meet the present requirements of the town will cost £75,926? What will be the annual maintenance? I thought it was to cost about £45,000.
1645. £4,268 is the annual charge? What will the Government institutions pay?
1646. It is for you to say what they are worth? —
1647. *Mr. Humphery.*] What do you assess them at for the water rate? They pay 10s. for each inmate per year.
1648. *Mr. Dawson.*] How many people are there in these institutions? I believe there are 1,000 in one and 450 in another.
1649. That is in what you call the asylums? Yes.
1650. Then there is the gaol? There are about 450 there, and about 1,500 in the lunatic asylum.
1651. Do you think it would be an advantage to the people of Parramatta to have the sewage farm, or would it be better to dispose of the sewage by treating it with chemicals, or in some other way? Of course I am not an expert, but what I have heard from other people the sewage farm would be a good thing.
1652. You do not think it would cause a nuisance? From inquiries I have made, I do not think it would cause a nuisance.
1653. Have you ever been to Webb's Grant? No, I have not; but people who have been there tell me that the place is not a nuisance to anyone.
1654. You think the people of Parramatta would pay for this work;—it would not be a drag upon the Government in after years? I do not know what the rate would be.
1655. It would be about 11d. in the £? I do not think that that would hurt anybody, and the scheme would be a good thing for the town.
1656. How much are they taxed now? 2s. in the £.
1657. *Chairman.*] You are including the pan charges? No; that is an extra tax. We pay 3d. for gas, 9d. for water, and 1s. as a general rate.
1658. Then from the 2s. 11d. you would have to deduct what you are now paying for the pan service?—
1659. *Mr. Dawson.*] You have not gone into the matter sufficiently to be able to say whether the borough could pay for this work, if not at the present time at least very shortly? I believe that the people of Parramatta would be able to pay for it, and I am sure that they would be willing to pay for it.
1660. Do you think that the majority of the ratepayers are in favour of it? I am sure of it. The matter has been alluded to during elections, and there has never been any dissent from the proposal.
1661. You do not think any nuisance would arise from the farm? I do not think so, because it will be quite away from the town. I suppose the farm will take the sewage of Granville, though I do not know whether that would make any reduction as far as Parramatta is concerned. There is no doubt something must be done in regard to the river, because it is in a terrible state.
1662. How do you account for the statements of the superintendents of the asylums that the sewage from these institutions is carefully and properly treated and creates no nuisance, never getting into the river? The sewage from these places used to cause a nuisance where the bridge is now, but they spent a little money and had it brought nearer to the town. The black slimy mud there is so objectionable that you cannot go near the place.
1663. Is not the nuisance caused by the drainage from the town? No; it mostly comes from the lunatic asylum, the gaol, and Biloela. It has always been caused by these places.
1664. *Mr. Ewing.*] Do you regard Parramatta as a healthy place? I am sure that it is.
1665. What is the usual reason why people carry out sewage works;—is it to insure the health of the people? Yes.
1666. If Parramatta is a very healthy place, under the pan system, why do you want to spend £70,000 to make it what it already is? The principal reason for carrying out sewerage works would be to get rid of the nuisance caused by the Government establishments. It is because they empty their muck into the river that the danger has arisen.
1667. But you, as Mayor of Parramatta, say that the health of the people is not suffering? I do not say that we are not suffering.
1668. But the cleansing of the river is necessary? The pollution of the river is the worst nuisance with which we have to contend.
1669. Is it the only nuisance? Of course, there are some parts of Parramatta which would be the better for a sewerage scheme.
1670. Notwithstanding the fact that the town is a healthy one, you are going to put a debt of £75,000 upon the ratepayers because the river does not smell very savoury sometimes? Yes.
1671. The people of Parramatta will have to pay something like £3,000 a year for the sewerage system? Of course, the Government will have to pay a large part of that.
- 1672.

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1672. Do you think a sewerage system would be worth £2,000 a year more to Parramatta? I am sure that if we could get the work done for £2,000 a year no one would grumble about it.
1673. You are now paying £1,300 a year, and the total cost of this scheme will be £4,600 a year. Subtracting £1,300 from that, it leaves £3,300, of which, if the Government pay £1,000—which will be a very large amount—£2,300 must be paid by Parramatta, in addition to what it pays at present? You say that there will be a rate of about 11d. in the £.
1674. But you realise that you have already borrowed up to your limit? Yes.
1675. Still you believe that it is a wise thing to increase your debt to between £130,000 and £140,000? It would take a number of years to complete the sewerage of Parramatta, and I believe it is proposed to expend only £76,000 at the present time.
1676. But you already owe £56,000. Adding £76,000 to that would make your liability £132,000 at the lowest estimate. All that expenditure is to be incurred to make a town healthy which is healthy already? I have no doubt about the healthiness of Parramatta.
1677. Then why are you anxious to incur this liability? There are some parts of Parramatta which would be the better for a sewerage system.
1678. *Mr. Collins.*] Does not the Council attend to the pans of the asylums? No; I think they empty their own now.
1679. *Mr. Byrnes* said that the Council serve all the Government institutions except the lunatic asylum? We serve the poor-houses, but not the lunatic asylum or the gaol.
1680. What do you receive from the Government for that? I could not tell you off hand.
1681. Do you charge them what you charge the ratepayers, or so much per head? I believe we charge so much per head.
1682. Are you aware that £16,000 has already been expended in connection with the sewerage of Parramatta? Yes; on the storm-water drains.
1683. Have the Council paid any part of that amount? No.
1684. Why not? We have never been asked to pay.
1685. You make use of the drains, and do not pay anything towards their cost? We have not paid anything yet.
1686. Do you not think that you should pay for them? I know that we shall have to pay for them—I have always expected that.
1687. *Mr. Humphery.*] Looking at the plan before the Committee, what proportion of the annual rateable value of the property will be served by the proposed scheme? It would serve the principal part of Parramatta.
1688. About what percentage of rateable property will not be served by this system? The population that will not be served is very scattered, but I should think that fully 10 per cent. of the rateable property will not be served.
1689. *Mr. O'Sullivan.*] You have no doubt as to the financial capacity of Parramatta to bear the burden of this work? I have no doubt that we could bear it.
1690. It would be some years before the work was finished, and in that time the population would increase, and it would go on increasing? Yes.
1691. Although you may be temporarily hampered just now, having borrowed up to your limit, you will not always be in that position? I hope not. We are going to try to pull down our liabilities.
1692. Parramatta has made great strides during the last ten years? Yes.
1693. Is it becoming a favourite residential suburb? Yes; during the last few years a great number of people have come to live there.
1694. Do you think there is any possibility of Parramatta ever repudiating its obligations, or failing to meet them? I do not think there is the slightest possibility of that.
1695. It is not within the ken of man to discern the likelihood of it? No.
1696. If the public institutions were taken away from Parramatta would you be able to bear this impost? I think so. I do not see why not. No doubt if we had a sewerage system people would be more inclined to live in the town.
1697. In the ordinary course of events, Parramatta will become the industrial centre, and its population will be increased in that way? Yes.
1698. *Mr. Davies.*] *Mr. Byrnes*, in a statement which he sent in correcting and amplifying his evidence, says that £4,324 are received from other sources of revenue in addition to the general and special rates; are those figures correct? I have no doubt they are correct.
1699. *Mr. Byrnes* stated that £56,000 had been borrowed by the Council, in which case you have exceeded your limit, because you are only allowed to borrow a sum equal to five years' rates? Yes; that is so.
1700. Do you know to what extent the revenue has increased during the last eighteen months? I could not tell you that.
1701. Is there likely to be an increase of revenue during the present year? I do not expect it. I think it will be the other way round.
1702. Does the Government pay rates on its buildings? No.
1703. If the proposed scheme were adopted, would it be necessary to assess and rate the Government property? There is no doubt about that. I should like to know what the Government are likely to pay.
1704. If Parliament gave you power to levy sewerage rates on the Government property as well as on other property, would you be in a position to pay the working expenses and the interest on the proposed scheme? We have always considered that we should be able to do so. I reckoned this morning, before coming away, that the sewerage rate would be about 9d. in the £.
1705. It would be only reasonable to expect the Government to contribute towards the cost of the sewerage scheme? Yes.
1706. Notwithstanding the great debt which you at present owe, you believe that if a rate of 10d. or 11d. in the £ were imposed upon all properties within the borough you could pay the £4,000 odd, which would be necessary to meet the cost of management, together with the interest on capital? That would be after deducting what should be paid by the Government.
1707. But striking a general rate? Yes; we think so.
1708. You have been asked whether, if the Government institutions were abolished or removed elsewhere, your income would be very largely crippled? No doubt it would make a great difference in the returns.

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1709. Would your borough, with such a shrinkage of income, be able to strike a higher rate, and thus equalise the cost amongst the residents of the municipality, or would the impost be found oppressive? I should not like to impose a rate of more than 9d. or 11d. in the £. I should not care to have to pay a higher rate than that.
1710. You have been informed that it has been estimated that, taking in the Government buildings, a rate of 11d. in the £ would have to be levied;—do you think that the ratepayers could pay such a rate in addition to the 2s. in the £ which they already pay? I believe there would be no difficulty about that.
1711. It would be equal to about 15 per cent. increase on the assessed value of the property there? Whenever the question has been brought up there has never been any objection to the scheme. Everyone knows that they will have to pay something like 9d. in the £.
1712. Have they not been looking to a paternal Government to do everything for them? No; it would be stupid for anybody to think that the Government would undertake such a work without being paid for it.
1713. When does any portion of your loan fall due? Speaking from memory, I think in about five years' time.
1714. How do you hope to be able to meet your debentures then? We must do as a good many others do—renew them, and try to get a reduction.
1715. Seeing that you have exceeded the limit imposed by the Act, do you think that the Government will allow you to re-borrow? I think there will be no help for it. We have a water service there which is a good asset.
1716. What did it cost? We got it from the Government. The Government made the dam about forty years ago, but it was lying idle until Mr. Byrnes had the water brought into the town. We have reticulated a large part of Parramatta out of the rates paid for water.
1717. The municipality has only paid for the reticulation? Yes; the dam was made when I was a boy, and was lying idle for a long time, until handed over to the Parramatta Council.
1718. You supply the public institutions with water? Yes; at so much per head.
1719. Is it a pumping scheme or a gravitation scheme? A pumping scheme—the water is pumped into reservoirs.
1720. That asset is in no way pledged to the debenture holders? Yes; we have borrowed money on it to reticulate the town, to construct filter-beds and reservoirs, and to build the engine-house.
1721. What amount has been borrowed in that way? I should think half of our loan.
1722. Fully £26,000? Yes.
1723. What other assets have you? The town-hall, a square of land, baths, and market buildings, and two reserves in the town are, I think, the principal assets.
1724. *Mr. Hoskins.*] What interest do you pay annually? I think 6 per cent.
1725. What!—6 per cent. on £56,000 would be £3,360 a year. What interest do you pay on your overdraft? Seven per cent.
1726. That is practically £3,500 a year for interest? Yes.
1727. What do you raise by taxation? I think about £7,000.
1728. What are the working expenses of the Council? I cannot tell you. We spend all our money upon improvements and working expenses.
1729. It takes all the money the corporation can raise by taxation to pay the interest on their debt and overdraft, together with their working expenses? There is a certain amount of money spent in each ward every year upon permanent improvements, such as kerbing and guttering. We spend all the money we raise.
1730. You think the corporation of Parramatta could raise £4,600 yearly in addition to what they get now? The Parramatta people would not have to pay the whole of that amount, because the Government institutions would have to pay a good deal. We reckon to get £1,800 or £2,000 from the Government.
1731. The Government would only pay a few hundreds, say £1,000 a year;—at present they only pay £674;—do you think that the Council could pay £4,600 a year in addition to what they have to pay now? I was rather surprised to hear what the scheme would cost. I thought it would only cost £50,000.
1732. Then you speak with some hesitation with regard to the ability of the corporation to repay the cost of carrying out this scheme, together with the annual working expenses? I do speak with hesitation, considering what it will cost.
1733. If the Government could dispose of their sewage without creating a nuisance, would the people of Parramatta be content to do without this scheme? I maintain that the principal cause for carrying out the work is the nuisance created by the Government institutions draining into the river.
1734. If the Government got rid of that nuisance, would the people do without a sewerage scheme? Speaking for myself, personally, I think they would if it is to cost so much.
1735. Do you say that the principal expenditure in connection with your water scheme is incurred by the Government? No; I say that the Government built the dam.
1736. Is it not a fact that at several meetings of the Council several of the aldermen have complained of the rates which are charged as excessive, and have suggested that the present scheme be got rid of so that the town may be served by the Prospect scheme? I think only one alderman has suggested that.
1737. *Mr. Wall.*] Have the Council discussed the sewerage scheme during your term of office? No; we have not. I was only elected a week ago.
1738. At present the Government pay £674 for having their pans attended to, and the annual cost of the scheme will be £4,268;—assuming that the charges to the Government were not increased, that would make the municipality liable for £3,594, or four times as much as they are paying now, because at present they pay £856 for the pan system;—under those circumstances, do you think the ratepayers would be prepared to adopt the system? I do not think they would; I think they would growl.
1739. Do you know the actual number of Government institutions that pay for having their pans removed? I think that George-street asylum, Macquarie-street asylum, the poor-houses, and the old men's homes are all attended to by the Council, while the Government attends to the gaol, the lunatic asylum, and the girls' reformatory.
1740. *Mr. Barling*, in submitting this work to the Committee, says: "For many years past the unsatisfactory sanitary condition of Parramatta has been the source of much trouble, both to the municipal authorities

- authorities and to the Government." You stated just now, however, that the town is particularly healthy? I say so again.
1741. Then what you say does not accord with Mr. Barling's statement? No.
1742. Do you know how they dispose of their sewage under the pan system? I think it is mostly taken out to the orchards.
1743. Is it only the Government institutions which have not adopted the pan system that are discharging their sewage into the river? It is not the contents of the night-pans that go into the river, but the slops and grease, and washing-up water.
1744. You could not tell us the number of ratepayers in Parramatta? Not from memory.
1745. *Mr. Neild.*] According to the statement of your predecessor, Mr. Byrnes, it would appear that the people of Parramatta pay £856 for the removal of their night-soil, which, with a population of 12,000, would be at the rate of 1s. 5d. per head. The proposed scheme is expected to cost £4,650 per annum. Taking off £1,000, say, for the Government institutions, it leaves £3,650 to be raised by the Council? Yes.
1746. Which, with a population of 12,000, would mean a cost of 6s. per head;—do you think the ratepayers would approve of the increase of cost from 1s. 5d. to 6s. per head? I know that they would not.
1747. Do you think that they could afford to pay such a rate? It seems a large sum of money, and I do not think so.
1748. Putting the calculation in another way—the number of houses in Parramatta is stated roundly at 1,950, so that the proposed charge would be £2 per house per annum;—do you think that the taxpayers would agree to pay such an impost? You could not tax them in that way.
1749. I am putting the calculation before you in two forms—per head of population and per house;—£2 would be a small charge for some houses, but it would be deemed altogether too heavy for smaller places? There can be no doubt about that.
1750. Would you have any difficulty in meeting your charges for interest or in renewing your loans? No.
1751. Have any loans fallen due lately? Not lately.
1752. Do you know of any large municipalities in the Colony which have had a difficulty lately in renewing loans, or providing money to meet existing liabilities? I do not remember any.
1753. Is the next loan falling due a large one? I do not think the amount is a large one.
1754. I gather from what you said to Mr. Wall, that if the sewage from the Government institutions could be prevented from going into the river, the people of Parramatta would not be so anxious for this scheme? It would do away with the greatest nuisance we have.
1755. And if that nuisance were removed, would you advocate a four-fold increase of the present cost of removing the night-soil? I should not.
1756. Then, after all, the question seems to resolve itself into this, that you desire a sewerage system in order to obtain relief from the nuisance created by certain Government establishments? Yes; principally.
1757. That nuisance removed, you would not trouble about the sewerage scheme at present? I should not.
- 1757½. Do you think the people would? I do not think they would.

J. W.
Withers, Esq.
28 Feb., 1894.

THURSDAY, 1 MARCH, 1894.

Present:—

JACOB GARRARD, Esq. (CHAIRMAN).

The Hon. WILLIAM HENRY SUTTON.	WILLIAM CHANDOS WALL, Esq.
The Hon. JAMES HOSKINS.	WILLIAM McCOURT, Esq.
The Hon. FREDERICK THOMAS HUMPHERY.	JOHN CASH NEILD, Esq.
The Hon. JOHN DAVIES, C.M.G.	EDWARD WILLIAM O'SULLIVAN, Esq.
The Hon. WILLIAM JOSEPH TRICKETT.	CHARLES COLLINS, Esq.
THOMAS THOMSON EWING, Esq.	HENRY DAWSON, Esq.

The Committee further considered the proposed Sewerage Works for Parramatta.

Charles James Saunders, Esq., Chief Draftsman, Department of Lands, sworn, and examined:—

1758. *Chairman.*] You have been requested to furnish information as to whether the land to the south of the proposed sewage farm at Duck River is Crown land? So far as our records show, that land forms part of John M'Arthur's Grant of 850 acres, issued in 1816.
1759. Is there any reservation of any kind? No; there is no reservation of water frontage in the old grant. I satisfied myself about that.
1760. The land to which you refer is bounded by Duck Creek? By Duck Creek and the Parramatta River on the southern and northern sides.
1761. The land already resumed for the purpose of a sewage farm, was resumed either from M'Arthur's executors, or some subsequent purchaser of part of the estate? Yes.
1762. Can you tell the Committee how the Lands Department define the term "high-water mark"? High-water mark is the mean high-water mark between spring high tides and neap high tides.
1763. The mean between the highest water at neap tides, and the highest water at spring tides? Yes.
1764. If the land is very flat there may be a considerable area at times covered by the tide, but not belonging to the Government? Yes.
1765. As a matter of fact, the Crown has no right to any portion of the land in question? I should not like to say that. I believe that the Crown has a right to all lands under the sea, and I think that if there was a gradual encroachment of the sea, the Crown would gradually acquire the title to so much of the land as was encroached upon. That, I think, is the common law of England.
1766. But your Department recognise mean high-water mark as the boundary? Yes.
1767. As far as the Lands Department are concerned, you are not aware of the existence of any Crown land to the south of the piece that has already been resumed? No.
1768. *Mr. Davies.*] All the land referred to is under water at times, is it not? I am not aware.

C. J.
Saunders,
Esq.
1 Mar., 1894.

Alexander

Alexander Brown Portus, Esq., Assoc. M. Inst., C.E., Superintending Engineer of Dredges, Department of Harbours and Rivers, sworn, and examined:—

- A. B. Portus, Esq.
1 Mar., 1894.
1769. *Chairman.*] You have been connected with the Harbours and Rivers Department for many years? For nearly thirty years.
1770. How long have you been superintendent of dredges? For thirteen, nearly fourteen years.
1771. Can you tell the Committee what it costs per ton to dredge material in any part of Port Jackson by means of your ordinary ladder dredges and deposit it in the punts alongside? From 2½d. to 3d. per ton.
1772. That estimate of cost is based upon a consideration of the loss of time in removing dredges, wear and tear, renewals and all other expenses? Yes.
1773. What does it cost per mile for the towage of punts? It costs about 3d. per ton to tow the punts 24 miles, that is, 12 miles each way.
1774. That would be to tow them to sea and simply to drop the silt down there? Yes.
1775. Would it be any saving if you took it to Long Cove or Neutral Bay? Yes, the cost would be somewhat less, because you could work with a tug of less power than would be required to tow to sea.
1776. Would the distance from Sydney Harbour to the junction of the Parramatta and Duck Rivers be equivalent to the distance of towing to sea? It would be about the same.
1777. And it would cost 3d. a ton? About that.
1778. But would you require so powerful a tug to tow the punts to Parramatta as would be required to tow them to sea, where the weather is sometimes heavy. You said there would be a saving if you were only taking the stuff to Neutral Bay? Yes; but the distance to Neutral Bay is less, and therefore a tug of less power would do than would be required to tow a punt as far as Parramatta.
1779. It is not because you go out to sea that you require heavier tugs, but because of the longer distance? Yes.
1780. What does it cost per ton to lift and deposit material upon a reclamation area by means of a sand-pump? About 2d. a ton, though the cost varies. We have paid 2d., 2½d., and have gone almost as low as 1½d. per ton; but the latter price was only paid under very favourable circumstances on the northern rivers where there is a great deal of sand, and the distance to be pumped is not very great.
1781. The cost depends very greatly upon the distance at which you have to deliver the sand? Yes; and the nature of the material operated upon.
1782. Do you know the land at Parramatta of which it is proposed to make a sewage farm? Yes.
1783. Can you give us any idea as to what it would cost to lift and deliver material on to that land? I think if the "Groper," the Von Schmidt dredge, was sent up there, and material favourable for the purpose were put ashore, the work could be done for 1½d. per ton.
1784. What does it cost you to pump and land material at Long Cove? About 2d. a ton with the "Neptune," but with the Von Schmidt dredge we can work more cheaply. We have no actual return for the working of the Von Schmidt dredge yet, because she has only been in use a few months.
1785. But there is no doubt that she is working more economically than the other dredges? Yes; we have had to combat several difficulties but they have been overcome now, and I think we can put the work of that dredge down at 1½d. per ton.
1786. Is it a fact that the "Neptune" was a hopper-berge and was converted into a sand pump? Yes.
1787. But the "Groper" is a sand-pump constructed upon more modern principles? She is specially adapted for dealing with clay. The "Neptune," under certain conditions will deal with sand just as well as the Von Schmidt dredge, but the Von Schmidt dredge is more powerful and will force the material to a greater distance.
1788. Is any hand labour employed in spreading the stuff after it has been put on the land by the sand-pump? No; the water levels it off.
1789. Did you employ any men to spread the stuff at Long Cove? We had men making fascine banks there.
1790. But was the material put on by the sand-pump spread by hand? No; if the spreading is properly done there should be no hand work.
1791. What is the area of the Long Cove reclamation? I think we have reclaimed about 40 acres.
1792. That is 20 acres on each side of the channel? No; the greater area is on the southern side. I speak approximately when I say 40 acres.
1793. There are about 40 acres enclosed in the fascine bank? About that approximately.
1794. *Mr. Trickett.*] Do you think that the sand-pump which would have been moored in Duck River or in Parramatta River could spread the sand all over the proposed farm? Yes; I think the work could be done admirably by the Von Schmidt dredge. The material discharged by the pump would be sand, but silt would also be lifted with it, and this would flow away over the adjacent land. The sand would deposit itself at the mouth of the pipe.
1795. But that would only apply to land up to high-water mark? No; the work could be done at a height of 10 or 15 feet—as high as you desired to lift the sand.
1796. *Chairman.*] Can you tell the Committee the longest distance you have delivered sand by means of a pipe from a sand-pump? Two thousand feet; but in Melbourne material has been delivered ¾ of a mile in this way.
1797. But speaking of your own dredges? About 2,000 feet. You require more power to deal with sand than with silt, because of the friction caused by the sand going through the pipe.
1798. You estimate that it would cost 1½d. a ton to land silt or sand upon the proposed farm. That would include the cost of removing the dredge to the place, ordinary stoppages of work, and so on, and interest on capital? Not interest on capital; just the actual cost.
1799. Including renewals? Yes; including renewals.
1800. Everything that could be fairly charged would be charged, with the exception of interest on capital? Yes.
1801. You think that 1½d. per ton would cover the cost of the filling in? Yes; that is, dealing with the material I know there is up there, and which would be suitable for the farm. We have dredged there before, and have found the material to be sand intermixed with silt. If the Von Schmidt dredge were used the sand would be left on the land, and the silt would flow in whatever direction you liked to direct it.
1802. From your knowledge of the various kinds of silt and sand in Port Jackson and its branches, can you tell the Committee if there is any silt or sand near the site of the proposed farm equal in quality to that

that which the Committee saw at Neutral Bay? About 2 miles below the site of the farm there is sand which is quite as good as any to be got in the harbour. Some of it was brought down to White Bay, and pumped ashore there.

A. B. Portus,
Esq.
1 Mar., 1894.

1803. What part of the river do you refer to? Just above Ryde Bridge.

1804. Is that stuff in the way now; in other words, will it have to be removed in order to make a channel? At present we have to dredge the channel to a depth of 8 feet for the Parramatta boats, but it will be necessary to make it 11 feet deep in order that we may take our heavy barges up there. The "Castor," for instance, draws 11 feet, and we require a channel of that depth for the Homebush reclamation.

1805. Certain of your plant which draws 11 feet will have to be used for the purpose of completing your own reclamation? Large punts may not necessarily have to be used, but it will be more economical to use them than to use barges of lighter draught.

1806. To that end you must dredge the channel where the good sand is? Yes.

1807. That channel would have to be dredged to properly complete the Homebush work, irrespective of the sewage farm altogether? Yes; in order to enable us to carry out our own reclamation to advantage.

1808. And where are you going to get the silt for the Homebush reclamation? We get the softer material—clay and material of that kind—from Sydney Harbour. We do not consider it desirable to put sand there, because we wish to conserve the sand as much as possible for health purposes, and use it at North Shore and other places at small reclamations.

1809. Has not some dredging been done off Darling Point of late? Yes.

1810. Where are you taking the material so dredged? It has been taken to Careening Cove, Neutral Bay, Long Cove, and, I think, a little was taken to the Homebush reclamation, where the "Neptune" was dredging.

1811. So that you have been punting some of the material dredged from Port Jackson up the Parramatta River? Not very much. A little was taken up there when the "Neptune" was working there to mix with the softer material.

1812. What would it cost to dredge the stuff at this point, 2 miles below the farm, and deliver it alongside the sand-punt at the junction of the creek and the river? The cost of the dredging would be just the same as it costs in Sydney Harbour—from 2½d. to 3d. a ton, say, 3d., and the towage would be about 1½d. per ton.

1813. So that it would cost 7½d. per ton to dredge material from the channel above the Ryde Bridge, and deposit it upon the proposed farm? Yes; because you would have to deal with it by means of two dredges. It is that that runs into expense.

1814. If the stuff was not deposited on the proposed farm, would it be deposited on the reclamation area at Homebush Bay? Yes; that is probably what we would do with it.

1815. Is there sufficient stuff there to complete your work at Homebush Bay? No. There are about 500 acres enclosed at Homebush Bay, an area sufficient to keep us at work for a long time.

1816. If you put the stuff on the site of the proposed farm, you will be robbing the Homebush reclamation? Yes; but we would not put sand there by choice, because our supply of sand is limited.

1817. You would bring the ordinary silt from Sydney Harbour, and put it there? Yes. We are not punting to Homebush Bay now, because there is no dredge available for the pumping work. We are sending all the stuff to Long Cove.

1818. *Mr. Davies.*] How many sand-pumps are there in connection with your Department? Eight.

1819. Whereabouts in the harbour are they working? There is only one in Sydney Harbour at the present time. The other is at present deepening the bar at the Clyde.

1820. Where is the one that is working in Sydney Harbour delivering the sand? At Long Cove. It was recently working at Callan Park.

1821. You have no difficulty in finding reclamation works where you can deposit silt and sand taken up by the dredges? No; we have no difficulty.

1822. You have any number of places where you can dump down the sand or silt without going outside the Heads? Yes; we have Long Cove and Homebush Bay.

1823. At Long Cove there is room for millions of tons of stuff, is there not? Yes, there is room for a large quantity.

1824. The Department is not inconvenienced for want of a place where it can deposit the sand? No.

1825. So that you have no occasion to take stuff outside the Heads? No occasion.

1826. And you will not have for many years to come? No.

1827. You have told us that it would cost 7½d. to deliver sand on to the proposed sewage farm. Does your Department usually debit another Department with the cost of services rendered by it in reclaiming land for public purposes? The Government by arrangement with the Municipal Council of North Shore receives half the cost of pumping the material on to the land at Careening Cove and Neutral Bay. They (the Municipality) pay for the delivery of the sand only, not for dredging it.

1828. That would be about 1½d.? About that.

1829. Where you render similar service to another Government Department do you debit the department with the cost of delivering the sand or silt? There has been no instance where that has been done.

1830. Would it be a fair thing to charge the Sewerage Department whatever may be the cost per ton of reclaiming this land so that it may be used for the purpose of a sewage farm? If it is a Government affair, it would not be a fair thing to do, because we have hitherto taken all the sewage delivered at Sydney out to sea without charging it to any person.

1831. I think you misunderstand my question; do you think it a fair thing, where one Department renders a service to another Department, to charge against it the cost of that service? Our Department should receive credit for the work done by it; but it is a question for the Minister to decide. I have never been asked to give an opinion upon it.

1832. You cannot say whether it is likely that your Department will get credit for this reclamation? Our Department would get no credit for it, because any money that was received would be paid direct into the Treasury.

1833. You say that this work will cost about 7½d. a ton? Yes; but if the material were dredged just at the spot the work would cost only 1½d. a ton.

1834. That is independently of the capital cost of the machinery used? Yes.

- A. B. Portus, Esq. 1835. You simply take into account the wages and wear and tear? The wages and wear and tear.
- 1 Mar., 1894. 1836. *Mr. O'Sullivan.*] We have it in evidence that it will take 600,000 tons of silt to carry out this work; that, at 7½d. a ton, would come to over £18,000? That is, supposing the whole of the material were taken from Ryde, but a great deal of it could be obtained on the spot—probably 150,000 tons—and that would only cost 1½d. per ton.
1837. Seven pence three farthings per ton is the cost of taking it from the harbour? That would be about the cost if two dredges were employed; but if the "Von Schmidt" could pump the stuff direct on to the reclamation, it would only cost 1½d. a ton.
1838. Whatever it may cost, I understand that this work would be done by your Department in the ordinary way, just as you would deposit material at Long Cove or Homebush Bay? Yes.
1839. If you did not take it to the proposed sewage farm, you would have to take it to some other place? Yes.
1840. Under those circumstances, do you think the work would be a fair charge against the sewage farm? The question of public health comes in here. The Dredging Department has always looked upon the public health as being a chief concern with it. If the requirements of the public health necessitates sending a dredge to any particular place it is at once sent there, and I suppose that on that score the people of Parramatta would be entitled to some consideration.
1841. Your Department would be justified, on consideration of the public health, in depositing silt on this particular spot? I think that is a very serious consideration. The preference should be given to a place where the reclamation will benefit the public health.
1842. Would your Department suffer any loss by the work at Long Cove or Homebush Bay, or any other place, being retarded while you were depositing silt at Parramatta? If the "Groper" were sent to Parramatta another dredge would be required at Long Cove. I daresay it would be possible to deposit the material dredged in Sydney Harbour upon the land at Parramatta; but it would be better to have another dredge at Long Cove and deposit it there.
1843. Supposing you did not send another dredge to Long Cove, and the work there was stopped, would your Department suffer any loss? Yes; it would inconvenience the Department.
1844. *Chairman.*] How would the Department suffer loss—through having to tow their material to Parramatta, or else take it out to sea? Yes; besides the material dredged from Sydney Harbour would not be very suitable for a sewage farm, because it is mostly clay and you require sand there.
1845. *Mr. Humphery.*] The sand-pump at Long Cove at present disposes of all the silt raised in Port Jackson? Yes.
1846. You are not put to any inconvenience in finding a place for depositing the silt that is raised? No.
1847. Do I understand that provision has been made for many years to come for depositing any silt that may be raised inside the Heads? Yes, for a long time to come.
1848. So that you do not want the Parramatta site as a dumping ground? It is not absolutely necessary to us.
1849. Is it necessary at all, if you have made provision for many years to come? No, it is not.
1850. *Mr. Trickett.*] You say that the area you have been filling in at Long Cove is about 40 acres? That is speaking at a guess; I think we have done that. I believe there are 60 or 70 acres there altogether.
1851. Which have to be filled in? Yes.
1852. How long have you been working there? We have been working there intermittently for a little over two years.
1853. Can you tell the Committee how many tons of silt have been put in there? Not without referring to the records.
1854. Do you know what the work has cost the Department? I could not tell you without referring to the records.
1855. What depth had you to fill in there? At the lower portion, 8 or 10 feet. The bottom is very soft, and the material sank down.
1856. Has the work been nearly completed? No; there is a good deal to do yet.
1857. What time would it take to complete it, using one dredge only? Eighteen months, I think.
1858. That is working continuously? Yes.
1859. In taking stuff up the Parramatta River, would you not have to go very slowly above the Ryde Bridge? No; we could go full speed.
1860. Would it not take time to moor the punts? No; the tug would go alongside the punt before reaching the sand pump, and you could then open the doors, and steam away again. The whole operation of discharging does not take longer than five minutes.
1861. How much stuff do these punts hold? From 250 to 500 and 600 tons, but the very large punts could not get right up there. I have explained that it would be necessary to make the channel 11 feet deep in order to get the larger punts up there.
1862. How many punts a day do you think you could send there? Each of the larger dredges would turn out about 2,000 tons a day.
1863. Could you send up five punts a day? Yes; five 400-ton barges.
1864. That would be using all the dredging plant in the harbour? We have two dredges working in the harbour, each capable of lifting 2,000 tons a day of eight hours.
1865. Will you furnish a return showing what amount of stuff you have already put upon the land at Long Cove, and what the work has cost? Yes.

Robert R. P. Hickson, Esq., M.I.C.E., Commissioner and Engineer-in-Chief for Roads and Bridges and Sewerage, sworn, and further examined:—

- R. R. P. Hickson, Esq., M.I.C.E. 1866. *Mr. O'Sullivan.*] I want to know from you if the tramway from Parramatta to the river, which runs past the sewage farm, would be in any way injured by the works which you intend to carry out? I do not think so.
- 1 Mar., 1894. 1867. Will not the tram-line be lower than the sewage farm, and will not the water from the farm therefore drain on it? It is rather lower than the sewage farm will be, but the side drain will catch all the soakage.
1868. Will you have concrete drains on the outside to carry off the soakage? No; pipe drains.

1869. Do you anticipate the probability of damage occurring to the tramway, and a claim being consequently made for compensation? No; there is no possibility of that, I think.

1870. Do you think that any claim for compensation will arise because of the sewage farm proving disagreeable to travellers by the tram? If the farm is properly managed, I do not think that it can be disagreeable.

1871. The Rosehill racecourse, which is very much frequented by the public on holidays, is near the proposed farm;—do you think that the odours from the farm will prove disagreeable to the people attending the races, and thus depreciate the value of the racecourse and give the owners of it a claim for compensation? I do not.

1872. Do you think that if the farm is properly managed, no claim for compensation can be made? If the farm is properly managed it cannot be a nuisance either to the tramway passengers or to the racecourse people.

1873. Do you think it is likely to be better managed than the Botany farm? Yes; because it will be managed under very much better circumstances.

1874. You are aware that at times there is a disagreeable odour about the Botany farm? To a very slight extent, and it is due entirely to the way in which we have to work the farm on account of the syphon under Cook's River. Instead of sending the sewage on to the farm diluted with water, the sludge has to be collected by the strainers, and when it has been collecting for some days, it is no doubt very disagreeable. I have never been able to detect any smell from the conduit that carries the sewage water.

1875. I understand that you anticipate that there will be still less smell at Parramatta? Most decidedly.

1876. Is your Department satisfied as to the financial ability of Parramatta to pay for the work? That is hardly a matter upon which I should like to give an opinion. I can only give an engineering opinion. The Parramatta people, however, seem very anxious to have the work carried out, and I understand that they are prepared to take the burden upon themselves.

1877. How long do you anticipate that the farm can continue working without anything like a disagreeable result;—how many years do you think it can be used before any radical alteration will be required? Sewage farms improve, they do not deteriorate.

1878. We have it in evidence from Mr. Stayton that he anticipates that within the next twenty years the farm will be, as it were, played out, and an enlargement of the area, or something else will be required? He is entirely wrong there. I have here the report of a Royal Commission which sat last September to inquire into the water supply of the metropolis of London. The Commission also dealt with the sewerage question, and amongst its members were Sir George Barclay Bruce; Sir Archibald Geikie, Doctor of Laws, and Professor of Geology and Mineralogy in the University of Edinburgh; James Dowar; George Henry Hill, Civil Engineer; James Mansergh, Civil Engineer—it was he who designed the Melbourne sewerage scheme—and William Ogle, Doctor of Medicine. Some of the members of the Commission were Cambridge men, and others were from Edinburgh University. This is their opinion upon the subject of filter beds:—

The action of a filter-bed appears to be partly mechanical, partly vital; but the mechanical action, which is confined, or almost confined, to the holding back of the comparatively gross substances suspended in the water, and which was supposed until recently to be the only operation in the filter, is now held to be of far less importance than the vital action, which depends on the activities of the gelatinous layer of living matter gradually deposited on its surface. A new filter, composed of perfectly purified sand, has little or no effect in producing either chemical or bacteriological purification; but, in course of use, a layer charged with living microbes is deposited upon the surface, and it is by these organisms which constantly increase in number, and also penetrate the sand to a slight distance, that both the nitrification of organic matter and the arrest of other microbes is affected. Thus, the longer a filter has been in use the more efficient it becomes, provided, of course, that the surface layer has not acquired such density as to interfere with the passage of the water; and consequently the recommendation, which was commonly given in former times, that a filter-bed should be cleansed as often as possible, appears to have been a mistake; cleansing, by which the efficient superficial membrane is removed, should only be carried out when the filter has become unduly blocked.

I have several other similar extracts which I could read to the Committee if they wished to hear them? The extract I have just read is, I might say, the cream of the sanitary engineering of the present day.

1879. That extract supports the theory that the longer a sewage farm is used the better it becomes? Provided that it is used properly; otherwise you could clog it in a very short time.

1880. But there seems to be no danger of the soil becoming choked, and proving a nuisance if properly managed? Not in the least.

1881. We have it in evidence that it will cost 1½d. to deposit silt raised from the river near the farm, and 7½d. to bring silt from the upper portions of the harbour, and put it on to the farm, so that the work would cost altogether about £17,000. Mr. Portus has informed us that the deposit of sand and silt there will necessitate the Department of Harbours and Rivers incurring a certain amount of expense, because they would have to neglect other work. His answer seems to convey the impression that there should be some charge upon the sewage farm for the work of reclamation, and I should like to have your opinion upon the point? The only statement I can make in reply is to read to you the minute which Mr. Darley has written on the subject:—

When we are dredging up the river, it will be a most convenient site to send the silt, and for landing. We have to get rid of the material, and it would actually be cheaper to land any silt raised in the upper portion of the Parramatta River at the farm rather than to send it to sea. The flats in the river above the railway bridge are nearly all good sand, very suitable for the farm.

1882. I gather from that minute that Mr. Darley takes over this work as part of the work of his Department? It seems to me a very simple thing. The material has to be dredged from the harbour, and has to be deposited somewhere. If it can be deposited at this place as cheaply, or, as Mr. Darley says, more cheaply than it can be sent to sea, why should it not be deposited there, and why should we be charged anything for it? Besides that, they are actually depositing material now at different parts of the harbour without the work bringing in any return, whereas, if the stuff were deposited at Parramatta, it would bring in a return.

1883. *Mr. Hoskins.*] Are you not aware that there are towns in England where they have had sewage farms for years, but because these farms have become foul in consequence of the quantity of sewage deposited upon them, they have been compelled to supplement them with the precipitation system? No; I am not.

R. R. P.
Hickson, Esq.,
M.I.C.E.
1 Mar., 1884.

- R. R. P. 1884. It has been given in evidence before the Committee that the International process has been
 Hickson, Esq., adopted in over 100 places, in some of which there had been sewage farms? No doubt there are places
 M.I.C.E. in England where they cannot have sewage farms. I get all the latest papers on the subject by almost
 every mail, but I have never come across an instance where a properly designed and managed sewage
 1 Mar., 1894. farm has had to be given up, and a chemical process has been adopted in its stead.
1885. *Chairman.*] Or where a sewage farm is being helped by a chemical process? No.
1886. *Mr. Hoskins.*] Are you aware that at Glasgow, the most populous town in Great Britain next to
 London, they are about to adopt the precipitation system? I am not.
1887. Can you tell me how many storm-water drains have been constructed in the suburbs of Sydney as
 far as Parramatta which do not connect with any sewerage system? There are a good many; I could
 not tell exactly how many.
1888. The residents in the vicinity of these drains are not called upon to pay rates for the benefits which
 they derive from them? We have no power to compel them to pay rates; but the Minister has a Bill
 dealing with the matter in print, which, I understand, he intends to bring before Parliament this Session.
1889. Therefore, the construction of storm-water drains at Parramatta is not to be taken as a special
 reason why the proposed scheme should be carried out, seeing that in other localities similar drains have
 been made for the benefits of which the residents are not paying rates? This sewerage scheme was
 designed not to fit in with the storm-water sewers, but to ensure the health of the town. I do not, how-
 ever, quite follow your question.
1890. The fact that these drains have been constructed is not to be regarded as any justification for the
 carrying out of a sewerage scheme there? Unquestionably not, if a sewerage scheme is not required.
1891. *Mr. Trickett.*] When you were examined before the Committee in September, 1892, you stated
 that it would take 400,000 tons of stuff to make this reclamation, but yesterday you said that it would
 take 600,000 tons? Four hundred thousand tons was Mr. Stayton's estimate. Dr. Garran mentioned it
 in his question, and I assumed that the estimate was correct.
1892. But in answer to Question 1413, you say: "I think it is about right"? I took what Mr. Stayton
 said in regard to the quantity, which, as a matter of fact, had not been taken out at that time. It has
 been taken out correctly now, however, and is 600,000 tons.
1893. Do you not think that this is a very important feature? From my point of view, I do not think
 it is of any importance whatever.
1894. You think that 600,000 tons is correct? Yes; as near as possible.
1895. The Department estimate that the sewerage scheme will cost, in round figures, £76,000; but if
 600,000 tons of sand has to be put on to the land—and that, at the lowest estimate, will cost £15,000—
 the whole work will cost £91,000? No. I have already shown that it will not cost anything extra to
 put the silt on the farm.
1896. The towing of the punts and dredges will have to be paid for by someone? Yes; but I should
 like to explain that the dredging has to be done in any case, and the head of the Department says that
 he could deposit the material dredged more cheaply at this place than he could send it to sea.
1897. We have had it in evidence from Mr. Portus that there are several places in Sydney harbour which
 are quite as convenient and less than one-third of the distance away? There is no place, with the
 exception of the Homebush reclamation, nearer to the spot from which Mr. Darley proposes to get the
 material—that is, just above the Ryde bridge.
1898. I understand that about £16,000 has already been spent at Parramatta:—supposing this scheme is
 not carried out, to what account will that expenditure be charged? If a Bill is passed compelling the
 people who live in the immediate vicinity of a storm-water sewer to pay for the convenience, I presume
 that it will apply to Parramatta.
1899. But if the scheme were not carried out, could the land which it is proposed to reclaim be put to any
 other purpose than a sewage farm, or would the money spent on it have been wasted? I do not know
 what use it could be put to. I do not think it could be used for anything else.
1900. Is not this very much the position of affairs—£16,000 has been expended, and we must borrow
 £76,000 to put on top of it to carry out the whole work? The way I look upon it is this: Parramatta
 is a very unhealthy place, and a sewerage scheme should be carried out there.
1901. *Mr. Hoskins.*] The Mayor says that it is a very healthy place? Then I stand corrected; but I
 know that letters from doctors have appeared in the newspapers saying that it is very unhealthy.
1902. *Mr. Trickett.*] Upon whose authority was the £16,000 spent? It was put on the Loan Estimates
 by the Minister.
1903. We also had it in evidence from the Mayor yesterday that if the refuse from the Government
 institutions were satisfactorily disposed of, Parramatta would not agitate for a sewerage scheme such as
 this;—is there any way by which the sewage of the Government institutions could be easily disposed of
 except by a scheme such as this? I am not sufficiently conversant with the system adopted there to be
 able to answer the question. There is a very considerable number of people living in Parramatta, and I
 think they require some sewerage system.
1904. I think that in most rural districts they bury their refuse? Yes; as a rule.
1905. Is there any place around Parramatta where that system could be effectively carried out as far as
 the Government institutions are concerned? Not that I know of just at present. It would be difficult
 to do that without creating a nuisance. In your report of the 12th November, 1892, you say:—
 The objections raised to all chemical precipitants yet known are based on very substantial scientific ground. Their
 action is at the best partial. They act as clarifiers rather than purifiers of the sewage.
- Are those your own words, or are they an extract? They are my own words, and convey the opinion I
 have formed from the papers which I have read.
1906. Mr. Stayton was very positive that the statement was not correct? Professor Warren of the Sydney
 University says that—
 Chemical precipitation processes have been applied to render the effluent sufficiently pure to discharge into a river,
 but these are only partial, as they leave the precipitated impurities, known as sludge, to be dealt with in some other way.
 The purification of the effluent is more apparent than real, and it rapidly decomposes if allowed to remain standing.
- Mr. Sidney Lowcock, in a paper published in the *Building and Engineering Journal*, says—
 It has been proved by the Rivers Pollution Commissioners and other investigators, that the chemical treatment of
 sewage can only remove suspended matters, and does not remove the highly putrescible soluble constituents from the
 liquid which passes off, containing about six-sevenths of the total manurial value of the sewage.
- That paper was sent to me by the Agent-General, and arrived here on 10th February. 1907.

1907. Does that refer to precipitation or filtration brought about by means of a material called polarite? This is speaking generally of the whole question after various experiments had been made with chemical processes.

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1908. We have had it in evidence that the use of certain clarifying matters does not effect purification, but that where polarite is used the effluent is rendered absolutely harmless? Mr. Price, who has just come back from a trip to the old country, and part of whose instructions were to inquire into the methods of dealing with sewage in vogue there, told me that the consensus of opinion amongst scientists at home was that the polarite and ferrozone loses its effect in six months. Mr. Price is making a report on the subject which I ought to have received this morning, but unfortunately it has not yet come to hand. When it does come I will send it on.

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1909. In answer to Mr. Hoskins you said that you did not know that the sewage of Glasgow was being treated by precipitation. I suppose, however, that the *Scientific American* is a fairly creditable authority? Yes.

1910. Well, in an article appearing in that newspaper on the 16th December, 1893, the statement occurs, stating that the precipitation system is about to be tried at Glasgow? I have no doubt that the statement is correct.

1911. The concluding portion of the article is as follows:—

When in full operation, 10,000,000 gallons of sewage will be treated every twenty-four hours, while provision is made for extensions capable of dealing with double that quantity. The total estimate, inclusive of land, is £100,000.

That will be a much cheaper process than ours? You cannot compare the two, unless you have the details before you. I think that the £100,000 must be the cost of treating the sewage.

1912. Would not the adoption of that system in the old world, where they are in the midst of all this scientific information, seem rather an argument in favour of the precipitation system? Certainly not. If you cannot send your sewage to sea, or get land upon which to treat it, you must adopt a chemical process. I think that is admitted by everyone; at least, it is as far as my reading goes. The best way of dealing with sewage is to send it to sea, and the next best way is to treat it upon a sewage farm;—sand is the best material you can get for that. Both these methods failing, you must adopt a chemical process.

1913. *Mr. Neild.*] I find in looking over the evidence that the Committee have never learnt what was paid for the land which it is intended to use as a sewage farm? I think you will find the information on page 80 of the Committee's first report—"Farm (land), £5,592."

1914. Do you know when the purchase was made? I think about two and a half years before that evidence was given.

1915. That would be in 1890? I think so; but it was done through the Land Valuation Branch.

1916. Do you know from whom the land was purchased? I do not.

1917. At Botany, where you have to deal with a large quantity of storm-water, it is customary to allow it to flow into the river, together with any sewage matter that may come down with it? That is only when the sewers are surcharged.

1918. Is it proposed that the storm-water at Parramatta should be run direct into the river? When the sewers are surcharged you can do nothing else; but we shall not have the same quantity per head of population coming down there.

1919. Is there not some element of danger in discharging storm-water directly into a river, seeing that at any moment a large quantity of sewage may come down with it? We have been letting storm-water run into Cook's River whenever it was necessary to do so, but I have not heard any complaints.

1920. But there is no population there? There is no population below the farm.

1921. The nature of the channel there would give the tide a greater sweep than it would have in the tortuous arms and bays of the Parramatta River? The rate of tide is about the same in both places. The tide in the Parramatta River is very strong.

1922. You said that this farm, if properly managed, would cause no nuisance, but is it not a fact that numerous complaints have been made in regard to the English sewage farms? Not that I am aware of.

1923. Then I ask your opinion about this statement, made by Mr. Arthur Angell at a meeting of the Society of Arts, and reported in the journal of that Society:—

The one at Cheltenham, he found from the *Birmingham Daily Gazette* for the present month, there were complaints about, and memorials were being presented against it as creating a nuisance. Croydon, he admitted, was one of the best managed, for he had never seen any other to come near it, but there the sewage was very dilute and the land well drained, but he was informed on authority, in which he had perfect faith, that a loss of £12,000 was made upon it in one year. Next, he would take Harrogate, and he found, from the *Leeds Mercury*, that the Corporation of the town were making complaints about the pollution of a tributary of the Nidd, consequent on the irrigation farm not dealing effectually with its sewage.

There is a statement, made apparently on authority, that sewage farms are a cause of trouble? Decidedly they can be a great cause of trouble.

1924. In the *Macclesfield Courier and Herald* of 2nd December, 1893, there is a long account of the Swinton and Royton sewerage works. I wish to draw your attention to this particular paragraph:—

We have given a full and particular description of Swinton works, because we visited them first, and because they are the outcome of the sewage farm on which irrigation was originally tried, and was an utter failure and a great nuisance.

Did that fact ever come under your knowledge? No; but I think the statement is utterly useless unless one knew the character of the farm and the whole of the circumstances.

1925. You said that the proposed farm at Parramatta would be less likely to be a nuisance than the one at Shea's Creek. Have you any other reason for making that statement, except the way in which the sludge is treated at Shea's Creek? The material forming the farm will be a little better, because we shall be able to get a purer sand. At Botany the sand is not pure. You will see from the samples before you that there is a good deal of silt in it. The way in which the sludge will be dealt with, however, is the main reason.

1926. But has not the evidence you have already given gone to show that the success of a sewage farm is not due to the purity of the sand of which it is composed;—is it not a fact that the presence of soil or the residuum of sewage is requisite in order to bring about the propagation of the friendly microbes? It is the sewage itself that is necessary for this purpose.

1927. The presence of a certain amount of sewage in the sand is necessary? Yes.

1928. Then why do you say that the proposed farm will be better than the Webb's Grant farm, because the sand will be purer;—is not that a contradiction of your former evidence? No; the material of a

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sewage farm, or a sand filter (and that is really the better designation) should be as coarse as possible, and quite free from anything that will prevent the air from going through it. You put the sewage on to the land in a thin layer. If you let it go on in such quantities as to form a cake the whole effect of the farm is stopped.

1929. You consider that the 42 acres which you are going to reclaim will make an excellent sewage farm. I ask your attention to the following statement made by Mr. James Lemon, a member of the Society of Arts, and reported in the journal of that society. He said that—

He was not opposed to putting sewage on land, but though he had found that when it was put on high land you got purification, and it succeeded, when he could not get proper land, and had been forced by the exigencies of the case, or economical reasons to put it on low land, there was not the purification there ought to be. Low-lying land had water enough already, and sometimes more than it could do with. The effect of putting a large quantity of sewage on the low-lying land or the bank of the Thames would be that in some parts of the year it would be filtered, but at other times it would all go into the river.

Does not that reference to low-lying land on the banks of the Thames apply equally to the situation of the land at Parramatta? I really could not say, because I do not know what the low-lying land there is composed of. It may be a swamp, for all I know.

1930. Is it not a fact that in wet weather the sewage farm will be charged with a large quantity of rain-water, together with soakage from the higher lands? No; not in the least.

1931. Why not? Because it will be so thoroughly drained. We know that water never lies nearer the surface at Botany than 3 feet or 3 feet 6 inches. It never gets lower, and never gets higher than that. We have wells all over the sewage farm by which we can tell.

1932. You think you will always have 3 or 4 feet of dry land and soil on the farm? I am quite certain of it.

1933. I would now ask your attention to a statement made by Sir Robert Rawlinson, whom I think you will admit is a recognised authority on sewerage? Yes; I think I have quoted from him pretty freely myself.

The only purification of sewage with which I am acquainted is when it is used in broad irrigation on a light porous soil, in summer weather, when the entire volume of water disappears in absorption and evaporation, the soil and the sun having effectually purified it. This, and this alone, so far as I know, is sewage purification.

1934. That is not your opinion? Yes; that is my opinion.

1935. Were you not placing all your stress upon the work of micro-organisms? Yes; but they are the result of those conditions.

1936. The result of the absence of water? The result of the presence of heat and air.

1937. But reference is also made to the soil? Of course, as I have said, the more porous the soil, the more air will get through it, and, therefore, the microbes will grow more quickly.

1938. Do you think that that is a proper interpretation to put upon Sir Robert Rawlinson's words; he says nothing about the friendly microbe? The soil itself will not purify sewage, it is the microbes that do the work. I think that is hardly a matter of opinion now after the four years experimenting which has taken place at Massachusetts.

1939. You say that you know no place where a sewage farm has been given up and the International process adopted? I cannot call to mind such a place, but I do not say that there is no such place.

1940. What do you say to this statement by Mr. Egan, the engineer to the Epping rural sanitary authority, in explaining the sewerage of the town of Loughton—

The land is under-drained, and the sewage from the settling tanks passes through it. This answered fairly well for some time, but ultimately the effluent from the land became most unsatisfactory, and other steps had to be taken to prevent pollution. In 1888 it was resolved to improve the state of affairs, and also to extend the sewerage system for the northern part of Loughton, and after many schemes of sewage purification had been considered, it was decided to adopt the use of ferrozone for precipitation, followed by filtration through polarite beds, instead of buying more land, especially as the land treatment had altogether failed.

It is quite possible that the land treatment was a failure, but I should like to know what the soil was.

1941. You say you receive information from England at frequent intervals, with reference to the progress of sanitation in the old world. Have you received any information with reference to the failure of the Huddersfield sewage farm? Not that I can call to mind just now.

1942. Have you seen any statement showing the great success that has attended the use of polarite filters in connection with the Huddersfield sewerage scheme? No; on the contrary, all that I have read goes to show that chemical processes—not distinguishing any one process from another—had been a failure.

1943. Mr. Hoskins asked you whether you are acquainted with the large number of cases in which the International system had been adopted. Are you aware that it has been adopted at Acton? I could not say from memory. I have got the International Company's pamphlet, and no doubt the information is given there.

1944. In that pamphlet there is a long list of towns in which this system has been adopted, amongst others Reading, Leicester, Hastings, Huddersfield, and Worcester? I believe so.

1945. Still the information you have received is in favour of the sewage-farm system as compared with any chemical system, or with any other system except that of discharging into the ocean, or so large an arm of the sea that no nuisance is likely to follow? That is so.

1946. *Mr. Wall.*] Have you taken into consideration what it would cost to deal with the sewage of the Government institutions separately? No; I think Mr. Barling, in his first examination, told the Committee what it cost them to dispose of their sewage at the present time. I have not gone into the matter myself.

1947. You say there have been a number of complaints regarding the insanitary condition of Parramatta. Have they referred principally to the nuisance caused by the sewage from the Government institutions? To the general nuisance.

1948. In your reply to the report of this Committee you say—

I desire to say that before submitting the scheme to the Committee the Department have carefully studied the applicability of all the known arrangements for sewage disposal and utilisation, and had worked out the details of the farm as fully as was necessary to arrive at a just conclusion.

From that I infer that before submitting this matter to the Committee your Department made a thorough investigation into it, and that the evidence you are bringing before us now is evidence which you were in a position to give on a former occasion, but which you did not think it necessary to put before a Committee of laymen? I do not think that that is quite the way to put it. The evidence I am putting forward

forward now is not exactly in addition to what I gave before, it rather bears on the same point and illustrates it. I think I explained yesterday that I should be sorry if the Committee thought I had some information which I had purposely kept back. That is not the case. I gave the Committee all the information in regard to the proposal that we had at our disposal.

1949. In a Minute which you submitted to the Chairman, you said that the study of the subject has shown that the purification of sewage is due to the work of a bacillus commonly known as the friendly microbe or nature's scavenger. But this was your evidence when before the Committee in 1892—

Have you studied the chemical action of soils upon sewage? No.

You admit of course that sand can have no possible action on sewage? No.

I gather from your evidence to-day that you regard the Parramatta farm as likely to be superior to the Botany farm in consequence of there being more sand on it? The sand, of course, would have no effect upon the sewage.

1950. But the sand, giving facilities for quick drainage, is the best material for a sewage farm? Yes; the coarser the material the better.

1951. Have you gained the information in regard to the action of the friendly microbe, which you have recently submitted to the Committee, since you were examined in 1892? Yes; to a very great extent.

1952. When you were examined before, you said in answer to the question—

I suppose you depend very largely on your crops for the absorption of the sewage? Yes; a good deal.

Professor Anderson Stuart, however, stated the other day that sand alone would not contain friendly microbes, and that instances were known where it had to be covered with a certain quantity of loam in order to generate the micro-organisms that dispose of the sewage? That has not been the result of my research.

1953. You do not anticipate that, in consequence of the greater purity of the sand at Parramatta, it will have to be covered with loam in order to generate the friendly microbes? On the contrary, the coarser and purer the sand, the better it will be, because it will allow more air and heat to penetrate into the sewage deposited upon it. The microbes grow out of the sewage; they do not grow out of the land.

1954. You disagree with Dr. Anderson Stuart, when he says that if the micro-organisms are destroyed by chloroform or heat, sand itself will not generate them? If that is his opinion, I certainly disagree with him.

1955. The Professor said that it was possible, by the use of chloroform, or the application of great heat, to destroy these organisms, and thus render the sewage farm entirely useless? That has not been the result of experiments made in other parts of the world.

1956. The tenor of his evidence was that pure sand, in which there were none of these organisms would not act as a purifier at all, and that the sewage does not in any sense contribute the organisms, but that they are in the soil and act upon it? I do not agree with him there.

1957. You could not form an approximate estimate as to what it would cost to dispose of the sewage of the Government institutions at Parramatta, taking into consideration what the sewerage of similar buildings usually costs? I could not, because I have nothing to do with the sewerage of Government buildings.

1958. Mr. Price, in his evidence the other day, referred to an automatic system of disposing of sewage which he had seen in some part of Ireland; could you give us any idea of the cost of that system? I could not, but I think I will be able to lay the whole of the particulars before you when I receive Mr. Price's report.

1959. I find, from a return furnished by the late Mayor of Parramatta, that the Government contribute something over £600 a year to the council there in connection with the pan system. Do you think that if the sewerage scheme were carried out, the council would be justified in making a greater demand upon the Government for the removal of the faecal matter from these institutions? I think that is hardly a matter for an engineer to give his opinion on. I do not know what amount the council should ask from the Government.

1960. The whole thing depends on the subsidy which the council will receive from the Government, and the ability of the ratepayers to pay for the scheme. I suppose you recognise that? Not entirely, the question of health should be the first consideration.

1961. Have you formed any opinion as to whether the present cost of removing the faecal matter from these institutions is expensive or otherwise? I do not know how the work is done.

1962. You are not in a position to say that £600 a year would pay the interest on sewerage works for the Government institutions? It would be very hard to answer that question, because it would be difficult to divide the cost of the scheme into two, and ascertain what portion was chargeable to the town, and what portion was chargeable to the Government institutions. It would either have to be done as a whole or not at all.

1963. You recognise that the construction of the work hinges to a very great extent on the ability of the ratepayers to pay the interest on the cost of construction. That being so, the Department might have been in a position to give us information as to what the Government are prepared to pay? I understood that the Under Secretary gave that evidence. It is an aspect of the question that I have gone into very little.

1964. *Mr. McCourt.*] Have you any personal knowledge of the working of the International system? No.

1965. That system is being run by a company? Yes.

1966. Do you know if the company has any representative in New South Wales? I believe that Mr. Stayton is their representative here, at all events I have been written to to that effect. In a letter received from a Parramatta man, he says, "I have received from Mr. Candy, director of the Company, the information that he is their accredited representative in this colony."

1967. You believe that that is so? I have no reason for disbelieving the statement.

1968. Interest is to be charged on a sixty years' basis, is it not? Yes.

1969. Has there been any movement on the part of the Government to extend the time? Not that I know of.

1970. *Mr. Davies.*] On the 12th November, 1892, you sent to the Secretary for Works a reply to the report of this Committee, in which you urged that no action should be taken upon the report of the Committee until a "competent and unprejudiced engineering opinion" had been obtained on the matter? Yes.

1971. On the strength of that report three gentlemen were appointed to inquire into the matter? Yes; I might perhaps take this opportunity of explaining that those three gentlemen were not the three whom I proposed in the first instance. I advised that Dr. Ashburton Thompson, being the medical officer of the

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- Crown, was really the proper person to be on the Commission, and that Mr. Chamier, whom I knew had had something to do on sewage farms, should act with him. I am sorry to say that Dr. Ashburton Thompson had to go to Broken Hill, and could not take the matter up. Then I personally asked Dr. Manning if he would take it up, and he said that he had too much to do, so that it was no use suggesting his name to the Minister. Therefore, I requested the Minister to ascertain if the now President of the Board of Health, Professor Anderson Stuart, would take up the matter, because I was very anxious that a man of his standing should inquire into it. I believe that he was pressed to do so, but that he could not find the time. The Minister then applied to another doctor to accept the position, and at this time, when we were almost stranded, Mr. Napier Bell happened to come to Sydney from New Zealand. I have known Mr. Bell a great many years, and he therefore called upon me, and I suggested his name to the Minister. We then had two engineers upon the Board who had been connected with sewerage works, and I had not at the time the remotest idea what their opinions were, so I suggested the appointment of a third engineer as umpire. That is how the Board came to be constituted.
1972. Your chief grounds for urging the Minister to take no action upon the recommendation of the Public Works Committee were that you desired an unprejudiced engineering opinion upon the matter. Is Dr. Ashburton Thompson, or Dr. Anderson Stuart, or any of the gentlemen whom you first named an engineer? Yes.
1973. Who? Mr. Chamier.
1974. He subsequently became a member of the Board? Yes.
1975. Do you think that the gentlemen you named in the first instance were qualified to express an "unprejudiced engineering opinion" upon the matter? I would have been quite prepared to abide by the decision of the first two men, whatever it might have been.
1976. What do you know of Mr. Chamier as an engineer who has had to do with sewerage matters? I know that he was a member of a Royal Commission appointed to report upon the Adelaide sewage farm, so that I suppose he knew something about the matter.
1977. To report in regard to the site? I think the Commission reported upon the farm after it was in operation, but I make this statement subject to correction. I know that Mr. Chamier was a member of a Royal Commission appointed in connection with the Adelaide sewage farm, and I understood at the time that he reported upon the working of the farm.
1978. Have you seen the evidence which he gave before this Committee? No; I do not think I have.
1979. That Board was appointed, and reported to the Minister, and in the concluding paragraph of a letter which you wrote dealing with their report, you say:--
- The question now to decide is—What is the next step to be taken?, and though this is a matter which rests entirely with the Minister, I might be permitted to say it would appear of little use to resubmit a purely sanitary engineering question such as this, which has been fully dealt with by a scientific board, to a committee of laymen.
- So you regard the three gentlemen whom you have named as a scientific board? Yes.
1980. What particular portion of their report do you regard as of any value in connection with the proposed scheme? The whole of it from beginning to end is full of value.
1981. Will you tell me what portion of it bears out the departmental scheme? It bears out the departmental scheme as to the advantage of a sewage farm, and as to the proposed area being sufficient. I think those are the two points upon which we joined issue.
1982. Do not they recommend an entirely different treatment from what you recommend;—do they not recommend the separate system? That is not a treatment. The treatment takes place at the sewage farm, and in regard to that they entirely agree with me. They disagree, however, as to the system of sewerage to be adopted, and recommend the totally separate system.
1983. In that they were unanimous? Apparently so.
1984. Can you tell the Committee the names of any distinguished sanitary engineer of the present day who recommends the adoption of that system? Not from memory; but as I have pointed out in my report, that is a point upon which a great many engineers would report in one way, and a great many in another way.
1985. Can you mention one engineer who is in favour of the system? Not now, but if I look through the pamphlet which has been sent to me, I could find plenty of them, though I admit that the majority recommend the partially combined system.
1986. That is the system you favour yourself? Yes.
1987. Then I want to know where this scientific board comes in;—they recommend the separate system, and you are not in favour of it? No.
1988. Do you think they are correct in estimating the reduction in the cost of reticulation, supposing the separate system were adopted? Their estimate runs out very close to mine. I understand that they make it £7,000, while I make it £6,000, which is practically the same.
1989. Are you not aware that they state in their report that the cost will be from 17 to 25 per cent. less? That is not on the whole work, because some of the money had already been spent, and the adoption of the separate system would not affect the sewage farm, nor the pumps, nor the rising main.
1990. Would it not affect the pumps if there were less pumping to do? There would be a less quantity to pump; but the sewage would have to be raised to a greater height. It comes to practically the same thing.
1991. But would there be anything like the saving they estimate, that is, 17 to 25 per cent. on the cost of the reticulation and the main sewers? It comes out to about that on the works above the pumping-station.
1992. What great sewerage works have you had to do with prior to joining the Water and Sewerage Board? None.
1993. What experience have you had with regard to sanitary sewerage works? None.
1994. It is all a matter of theory with you? Not entirely. I was engaged for a number of years by the London North-Western Company in designing station yards, and I had to provide sewerage for them.
1995. But you have never had to do with the sewerage of a city? No.
1996. You have only had to do with sewerage works since you became connected with the Water and Sewerage Board? Yes.
1997. In your letter to the Minister, dated the 12th November, 1892, you stated that the farm at Webb's Grant was serving a population of 1,400 to the acre;—do you still adhere to that statement? I got that information from the engineer in charge of the farm; but I understand now that it should be 1,000 to the acre.

1998. You stated yesterday that you had received from the Agent-General an account of an experimental sewage farm conducted on new principles;—will you give a brief description of that farm? The filter-bed was 3 feet 1½ inches deep, and was composed of a 6-inch layer of stone broken to a 1-inch mesh, a 3-inch layer of metal broken to a 5-8th inch mesh, 10½ inches of screenings from the broken metal, and a top layer of sand. R. R. P.
Hickson, Esq.,
M.I.C.E.
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1999. Practically, that would be the old principal of subsoil drainage? Yes; with sand on the top.
2000. I think you said that your authority did not say where the experiment had taken place? Yes, in London.
2001. In what part of London? The name of the place is not given. London sewage was treated however.
2002. Suppose it was not necessary to build up the whole area of Parramatta in the way proposed, what would be the cost of the system to which you have just referred? In the first place, it will be necessary to make the reclamation, and in the second place, I have not the data by me to form an estimate of the cost.
2003. Is it not usual for one Department to charge another for any service rendered;—if your Department did a service to the Railway Department, would you charge the expenditure against them? Yes, if we incurred any extra cost.
2004. Would it not be a fair thing for the Harbours and Rivers to charge you with the service rendered in filling in this land? I do not think so, because it will not cost anything extra to them. We paid them for the fascine work, because they had to employ men specially to do it, but it will not cost them extra to deposit the silt there.
2005. But supposing we have the statement of those who control the work of that Department that it would cost from 1½d. to 7½d. per ton to deliver sand by means of a sand-pump? I do not know that it was stated that that would be the extra cost.
2006. Yes, the extra cost? Then I cannot reconcile that statement with what has been said by the head of the Department.
2007. You would not doubt Mr. Portus? It is not a question of doubting any person's word. Mr. Portus told me that it would not cost them anything more to land the stuff dredged up above the railway bridge on the sewage farm than to send it to sea. Of course, if you brought it from the far end of the harbour it might cost more.
2008. Why should it go to sea when there are twenty different places to put it? I answer that by saying, Why should it not go to the sewage farm, from which there will be a return, while there will be no return from the other places?
2009. All land reclaimed by the Government has some value? So will this land.
2010. Has not the land reclaimed at Shea's Creek a commercial value? I do not know where the return comes in.
2011. But surely it has a commercial value? Yes; and so will the Parramatta farm. But there has been no charge made yet.
2012. But should there not be a charge for this service in connection with the Parramatta scheme? I do not agree with you there, but, of course, it is a matter of opinion.
2013. If you had to do this work, what do you think it would cost the Department? Probably if we had to get the stuff ourselves, we should have to carry out a totally different scheme.
2014. You are aware that there is no difficulty in finding places on which to deposit dredging material? There was no inconvenience last year, because they were not working the dredges then, but Mr. Darley tells me that he is going to put all the dredges back directly, and he wants a place to dump the silt.
2015. Are you not aware that at Homebush Bay and at Long Cove, there is room for millions of tons of silt? Yes; and there is room for 600,000 tons at Parramatta.
2016. The Water and Sewerage Board have under their control the Botany farm;—do you think that it is satisfactorily managed? Yes.
2017. Do you look upon it as perfect? I do not. I think it is imperfect as far as the way in which we have to deal with the sludge, but I am preparing designs for a pipe sewer across the river, which will enable the sludge to be taken straight on to the farm.
2018. *Chairman.*] Will not that interfere with the navigation of Shea's Creek? It will be a swing pipe.
2019. *Mr. Davies.*] How do you propose to treat the sludge at Parramatta? In the first place, we would not have the same sort of sewage to deal with, because it would all have to pass through the pumps, and would be completely broken up in the process. It could go straight on to the farm and be spread upon the beds, while the effluent would drain away into the river.
2020. You do not think that strainers, or any apparatus similar to that at Webb's Grant, would be necessary? There would have to be a strainer to catch dead animals, stones, and other things which could not go through the pump, but the faecal matter would not be collected.
2021. What provision have you made for the drainage of this farm? There would have to be drains underneath. I think the most likely way we shall work the farm is this: The red line on the map shows the delivery-main. On the north-west corner of the farm there will be a small tank, which will be necessary to collect the sewerage brought down at night. The main carrier will come along the western fence, right down through the centre of the farm, and on either side of it will be the beds, just as we have them at Botany. Round the boundary there will be catch-drains, and eventually the effluent will find its way into Duck River.
2022. Will there be one point of discharge or two? That is a matter of detail. It will depend a great deal upon the quantity of water, but most likely there will be two points of discharge.
2023. You have no plans showing the section of the batter? No; they have not been prepared yet.
2024. From your general knowledge, you believe that there will be no nuisance from this farm? I can come to no other conclusion in view of the enormous weight of evidence I have here, testifying to the good results of sewage farming when you have sand-beds to deal with.
2025. *Mr. Humphery.*] What do you estimate will be the maximum annual cost of the sewage farm, and the maintenance of the whole system. You gave some figures in your last estimate;—have you revised them? I have not revised them, though I think I might fairly do so, and reduce the cost.
2026. Will you do so, and give us a statement of the matter? Yes.

TUESDAY, 13 MARCH, 1894.

Present:—

JACOB GARRARD, Esq. (CHAIRMAN).

The Hon. WILLIAM HENRY SUTTON.

The Hon. JAMES HOSKINS.

The Hon. FREDERICK THOMAS HUMPHRY.

The Hon. JOHN DAVIES, C.M.G.

The Hon. WILLIAM JOSEPH TRICKETT.

THOMAS THOMSON EWING, Esq.

WILLIAM CHANDOS WALL, Esq.

WILLIAM McCOURT, Esq.

JOHN CASH NEILD, Esq.

EDWARD WILLIAM O'SULLIVAN, Esq.

CHARLES COLLINS, Esq.

The Committee further considered the proposed Sewerage Works for Parramatta.

Herbert James Beaumont, Esq., Assessor, Metropolitan Board of Water Supply and Sewerage, sworn, and examined:—

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2027. *Chairman.*] You are assessor for the Metropolitan Water Supply and Sewerage Board? I am.
2028. How long have you been connected with the Board? Since July, 1888.
2029. In the capacity in which you now officiate? Yes.
2030. Prior to that were you engaged in the valuation of properties in the various municipalities? I was.
2031. For how many years? Five years.
2032. Were you engaged in the city as well as the suburbs? No; I was engaged in Balmain, St. Leonards, East St. Leonards, Strathfield, Randwick, Waverley, Leichhardt, and Willoughby—seven or eight boroughs altogether.
2033. You have had considerable experience in the valuation of properties for rating purposes? I have.
2034. Will you inform the Committee as to the mode of assessing Government institutions within the jurisdiction of the Metropolitan Water Supply and Sewerage Board? We take them upon what we consider to be a fair average annual rental—the same as in connection with any other premises.
2035. Is there only one mode of valuation provided under the Act, namely, on the annual rental? There is nothing provided under the Water and Sewerage Act. We are bound by the Municipal Councils' assessment, if there is any. In cases where the Councils have not valued the premises, we rate them.
2036. Do you take the valuation made by the City Corporation for properties within their boundaries? We do.
2037. Do you take the valuations made by the various suburban municipalities within their boundaries? Yes; but, of course, the suburban municipalities do not rate the Government buildings.
2038. Is there any power under the Act to assess large Government institutions on a different basis from that of mere valuation? None at all. The Act simply says that we are bound to take the assessment of the Municipal Councils if there is any. If not we make our own.
2039. Then you are not operating on anything at present but what is within the municipal boundary? Yes, we are. If we make our own valuation, we give the people the right of appeal on the same line as the municipalities do. That is provided for in the Amending Act of 1889.
2040. Will you inform the Committee how you arrive at the valuation for sewage and water rates (say) for a Government institution like Darlinghurst Gaol? That is assessed by the City Council, but there are three or four Government institutions outside the city altogether which I have valued. They are the Prince Alfred Hospital, the Callan Park Asylum, and the Gladesville Asylum.
2041. They were in municipalities before? Yes; they are in municipalities now, but they were not rated by the Municipal Councils, because they cannot rate Government buildings or charitable institutions.
2042. Therefore you had to rate these various institutions? Quite so.
2043. Can you tell us the principle upon which the City Corporation acted so far as the gaol is concerned? Upon what they considered a fair average rental.
2044. Is that what you did with reference to the institutions to which you have just referred outside the city boundary? Yes. In addition to those institutions there are the Victoria Barracks, the Evelcigh workshops, and the University. The Victoria Barracks comes within the borough of Paddington. There are also the Maitland Gaol and the Newcastle Benevolent Asylum.
2045. How did you arrive at a fair annual rental or value of these Government institutions—take the Maitland Gaol for instance? I went round the premises and saw each building, and put down what I thought would be a fair value for them supposing they were occupied by a private individual.
2046. Are there any institutions supplied with water by your Board upon a different basis than on the ordinary rental basis? Only one, and that is Darlinghurst Gaol. That is assessed at £10,000 a year. In that case the authorities have entered into an agreement with the Board not to pay according to the assessed value but to pay a lump sum of £660 a year. That was done in order to do away with the meter, so that they could have a better pressure.
2047. You know the number of persons, who, as a rule, are within the Darlinghurst Gaol. Can you tell us how much per head that runs to? On an average I believe from 1,000 to 1,200 persons in the gaol, and I should think between 9s. and 10s. per head.
2048. Roughly speaking you charge them about 10s. per head? Yes.
2049. That would be very much higher than if you were rating ordinary dwellings? Certainly. They entered into a special agreement to that effect.
2050. And because the number of inhabitants to a given area is larger in the case of a Government institution like that than in ordinary dwellings, a larger amount is charged? Yes; we took the average meter consumption. They wanted to do away with the 4-inch meter, and they asked us to fix a lump sum, so that they might use an unlimited supply.
2051. You have power, under the Act, to do that? Yes—to make special arrangements or agreements. At the Colonial Secretary's office, for instance, they wanted a better pressure in case of fire, and asked us to do away with the meter, and we fixed the sum they had to pay at £310 per annum.
2052. You referred to the Maitland Gaol just now;—has your Board any control over the Hunter River Water and Sewerage Board? No; but I was sent up there to assess the collieries and Government buildings at the time the Board was formed.
2053. You were lent to them for a time? Yes.
2054. Do you know whether they have any special contracts for water supply similar to the one at Darlinghurst? I could not say. I have not been there since I made the assessment.

2055.

2055. You state that the special contract for the supply of water to Darlinghurst Gaol, is at the rate of about 10s. per head;—is there any agreement as to a sewerage rate? None whatever. We have not any agreement with any place in reference to sewerage.
2056. But if you charge more per head for water for the persons within Darlinghurst Gaol, because of the density of population on a given area, why should you not do it in connection with sewerage? It does not cost us any more whether there are twenty people or 1,000. So long as the pipes are there the sewage will go away all the same.
2057. But 1,000 people will give more excreta to a sewage farm than 500? But in this instance it does not go on to a sewage farm, but to Bondi. Of course the Board have power at any time to insist upon a meter being fixed, and in these big institutions meters are fixed. They pay the assessment, and then pay the excess over and above the assessment. In the case of Darlinghurst Gaol, they wanted to do away with the meter altogether, in order that they might have a better pressure, and a special arrangement was made.
2058. What is the sewerage rate in the city? Sevenpence.
2059. Is that the rate all through, including the suburbs? Yes.
2060. I understand that you have recently visited Parramatta, and have seen the various Government institutions there? Yes, I went up on Friday.
2061. And you have arrived at what you consider to be a fair ratable value for them? Yes.
2062. Have you the list showing the various institutions? I have a list showing the total of the Government buildings.
2063. Mention the names and the amount? The assessed value of the gaol is £3,500—that is the total; the Industrial School, £1,000; the post office, North Parramatta, £36; the post office, South Parramatta, £350; school and residence in Macquarie-street, £300; school and residence, North Parramatta, £300; court-house, Parramatta, £600; the police barracks, £500; the Lunatic Asylum, £7,000; the George-street Asylum, £2,000; the asylum, Macquarie-street, £800; the asylum, Harris-street, £250, and the Cottage Homes, £200. Then, there are two large blocks of land belonging to the Government in Parramatta, which I have assessed. There is the land which has been resumed for the court-house, which I have assessed at £425 per annum. That is, 5 per cent. on the capital value. Then, there is the land at the corner of Windsor-street and George-street—that is also resumed land—which I have assessed at £250 per annum.
2064. Under your system of rating, would these be subject to a sewerage rate? Yes. The total assessed value of the Government buildings is £17,511.
2065. Under the rate which you are now imposing for your metropolitan sewerage, what would that realise per annum? £802 11s. 9d.
2066. That is on a 7d. rate? No; on a 11d. rate.
2067. Presuming sewerage works were carried out at Parramatta, and were vested in the Board for management, and you struck an 11d. rate that, in your opinion, would be the amount which would be received from the various Government institutions? Yes.
2068. Is there anything else you desire to say? Yes. Through the kindness of the Mayor I yesterday ascertained the amount paid to the Council for emptying night-pans. The amount in regard to all the buildings I have mentioned last year was £702 17s. That is the amount paid by the Government institutions last year to the Corporation.
2069. And there are some of these Government institutions which do not have night-pans? Yes; the Lunatic Asylum.
2070. Is that the only instance? Yes; with the exception, of course, of the vacant land.
2071. Last year, then, the Government institutions, excluding the asylums, paid the Corporation £702 17s. for a night-pan service? Yes. I may mention also that there are premises which are not rated by the Council at all, and they would not be liable unless they were connected with the sewer, namely, the two railway stations. They would be liable, of course, if they were connected with the sewer, but they would not be liable unless they were connected.
2072. Does that apply to any of the institutions you have enumerated? No; only to the two railway stations.
2073. But does that apply to any of the other institutions you have mentioned, or would they all come under a compulsory rate? The institutions I have previously mentioned would be liable whether they were connected or not, but the railway stations would only be liable if connected.
2074. Why should they not connect;—are they beyond the area in which the sewers would be formed? No. According to the Railway Act of 1888 all railway properties are exempt from the payment of certain rates and taxes. In the city we do not charge the railways a sewerage rate unless they actually connect, and we do not charge a water rate unless they actually connect.
2075. You spoke just now of the Eveleigh Works;—are they connected? Yes.
2076. But unless they are connected there is no power on your part to assess them? No. The amount which would be received from the two railway stations—the Parramatta and Harris Park—at 11d. in the £ would come to £18 6s. 8d. a year. Last year they paid the Council for emptying the pans £32, so that under a sewerage system they would pay less. Again, there are properties which are not rated by the Council, and which the Council have not the power of rating, but which would be liable, under the Act, to pay rates whether they were connected or not. For instance, there is the Town Hall, the baths, the hospital, and the fire station, and all churches.
2077. A church is not liable to a rate for sewerage? Yes; for both water and sewerage rates.
2078. And do you impose the rates? We do; but we do not exact them. We let them run on until we get power under an Act of Parliament to charge them less than ordinary premises or exempt them altogether. Some pay, and some do not.
2079. Have you any other information to offer? With reference to the institutions in Parramatta, I may mention that the gaol last year was charged £193 for water. Presuming that the Council assessed the gaol, and did not charge as they do now at 10s. 6d. per head, the valuation of the gaol calculated at 9d. in the £, would be £5,146. Presuming that they assessed it on the ordinary assessed value, and did not enter into an agreement with the Council at a fixed sum per year of £193, the assessment of the gaol would be £5,146. The same with the Industrial School—that valuation would be £1,467, and so on all the way down, until you come to the Lunatic Asylum, which would be £14,266. That is presuming the Council made an assessment of the premises instead of having a special contract.
2080. *Mr. Humphery.*] What method did you pursue in arriving at the annual value of the various Government buildings you have mentioned? I used my own judgment in the matter. I took what I considered to be a fair average annual rental. 2081.

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2081. Having regard to the number of inmates or the rental value? The rental value.
2082. How did you arrive at the annual value of £7,000 in the case of the lunatic asylum? I went round and valued every building in the place.
2083. At a capital value? No, at an annual value.
2084. Everything included, what do you estimate will be the contribution from the Government for all buildings that would be subject to a sewerage rate of 11d. in the £? £802 11s. 9d.
- 2084½. Would that comprise all ratable property belonging to the Government? Yes, except railway stations.
2085. What would it be including the railway stations? £820 18s. 5d.
2086. *Mr. Davies.*] Do you regard a sewerage rate of 11d. in the £ as a fair and equitable rate for a town like Parramatta;—do you know of any rate struck by your Board as high as 11d. in the £? No; 7d. is the highest rate.
2087. What is the present rate? Sevenpence in the £.
2088. And that is the highest rate you have ever had for sewerage? Yes.
2089. *Mr. Neild.*] Are you contemplating a higher rate? I do not know. I have not heard anything about it.
2090. Has it not been discussed by the Board? I am not a member of the Board.
2091. *Mr. Davies.*] Are you aware that the Parramatta people have an independent water supply? Yes.
2092. And this inquiry is simply confined to the question of sewerage and drainage? Quite so.
2093. Your estimate of the income to be derived from the Government buildings is £802? £820, including the railway stations.
2094. That is including everything belonging to the Government? Yes.
2095. And that would be brought in by a rate of 11d. in the £ on the assessed value of all Government properties? Yes.
2096. *Mr. Hoskins.*] If the control of the sewerage of Parramatta were turned over to the Water and Sewerage Board, as it might be under the law, do you think that the Board would charge a rate of 11d. in the £ to the residents, seeing that they hitherto have only charged 7d. in the £ to those who have used the sewers under the control of the Board? I could not answer that question, for the reason that I do not know what rates would be derivable from the private properties in the town of Parramatta. Unless I went through the books of the Council, I could not tell you what revenue would be derived from a rate of 11d. in the £, exclusive of Government buildings.
2097. But I suppose you consider a rate of 11d. in the £ exceptionally high? Yes.
2098. And you do not know of any place in which a sewerage rate of 11d. in the £ is paid? No.
2099. *Mr. Trickett.*] Did you, in dealing with this question, consider the capital value of any of these properties? No; I took them at a fair annual average rental, with the exception of the two blocks of vacant land that I have mentioned which I took at 5 per cent. on the capital value.
2100. Is it not a very difficult thing to say what would be the annual average value of a gaol? Yes.
2101. Did you assess every little sentry-box? No; I did not include the sentry-boxes.
2102. You took into consideration the whole range of buildings used for the accommodation of inmates;—how could you arrive at the annual value of property of that kind? I thought the matter over as to what it would be, presuming it were occupied by a private individual. I presumed on the cells being done away with altogether, and the place made into a private house. One can only use their own judgment in a matter of this kind. There is nothing laid down to guide you. If I were dealing with the capital value it would be a different thing altogether.
2103. Are these places suitable for private occupation? Some of them are.
2104. The Lunatic Asylum for instance—you value that at £7,000 a year? Yes.
2105. How would you arrive at that;—do you know of any place within the Colony which is fetching £7,000 a year? I compared that with the Darlinghurst Gaol, and also with the Maitland Gaol which I assessed. In neither instance was any appeal received against the amount of the assessment. I also assessed the Callan Park Asylum and the Gladesville Asylum, and the authorities had the right of appeal, but they evidently thought the assessment a fair one.
2106. How many acres are there connected with the Lunatic Asylum at Parramatta? I could not gather; they did not know at the institution.
2107. Could you not form an idea? They have a lot of land outside, which is not enclosed at all. I could not form any idea. I tried to obtain the information.
2108. I suppose the valuation you have made is a very high one? No; generally speaking I put it down very low, subject to its being increased at any time.
2109. Do you think the Lunatic Asylum premises are worth £70,000 at ten years' purchase? Yes; that would be £150,000 at twenty years' purchase. It is a very difficult thing to get the total cost of the asylum premises, and also of the gaol premises, because the greater portion of the work was carried out by prison labour.
2110. I should have thought you would have more equitably arrived at a decision by using the capital value as a basis rather than the average annual value of premises which are never let? If you take it according to the capital value—that is the cost of the work—the buildings in the Lunatic Asylum are very poor in comparison with those in the gaol.
2111. Which would come the highest in the assessment? As far as buildings are concerned, I suppose the buildings in the gaol go as high as those in the Lunatic Asylum, because a large portion of the Lunatic Asylum is weatherboard.
2112. But would the assessment come higher if you acted in regard to the capital value? I should think they would be pretty nearly on a par. The Lunatic Asylum might be slightly more. A large portion of the Lunatic Asylum is weatherboard.
2113. *Mr. Wall.*] I suppose you know nothing about the present rates of Parramatta? No, I only know that the water rate is 9d. in the £.
2114. Do you know what it brings in at that amount? No.
2115. We were told by the Mayor of Parramatta that a 2s. rate realises £3,790;—that means £1,800 for a shilling rate? I think it must be more than that. What is the assessed value of the properties?
2116. We are told by Mr. Byrnes "the 2s. rate realises annually £3,792"? I think the assessed value of the town is £76,000, and that at one shilling in the £ would come to £3,800.
2117. Then based on your calculation you think that the rates accruing from a sewage farm at 11d. in the £ would reach over £4,000—that is, taking £800 for the Government buildings, and assuming that the rates of Parramatta at 11d. in the £ would realise £3,500? Yes.

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2118. And it would give a total revenue of £4,000 odd? Yes. Of course it is a difficult thing to know what the revenue from the town will be, for the simple reason that the Act provides a minimum of 10s. a year.
2119. Why did the Department take 11d. in the £ as the basis of your calculation, seeing that the amount was not required to pay the interest on this work? I did not have any instructions that way at all. I simply had instructions to assess the premises. Reading through previous reports, I saw that 11d. in the £ was thought would be required to cover interest, &c., and I worked it out accordingly.
2120. You have taken that as the basis, although the highest rate charged by the Department is 7d. in the £? Yes.
2121. *Mr. Collins.*] To make up the £4,000 a year, you would have to charge 11d. in the £? Yes.
2122. If this scheme were handed over to the Board, that would be the lowest amount you could charge in order to make the people pay the capital and the interest? I presume so, but I have not gone into that question at all.
2123. At any rate if it is necessary to have £4,000 a year, a rate of 11d. in the £ will be required? Yes.
2124. *Chairman.*] Do you know what is the population in the Government buildings to which you have referred? Yes.
2125. Can you give us the numbers separately? Yes; in the gaol the average is 360; in the Industrial School, 100; in the Asylum, 1,070; in the asylum in George-street, 900; in the asylum in Harris-street, 160; in the cottage homes, between 50 and 60. The latter are old married couples who occupy 21 houses, and the matron occupies the other one.
2126. How about the asylum in Macquarie-street? The average there is from 340 to 350.
2127. What about the schools—can you give the average number of those who attend them? No; I have not the average number of scholars.
2128. Only of the continuous residents? Yes; they would not come to more than 12.
2129. Seeing that the sewage will have to be dealt with either by means of a farm or by some method other than discharging into the sea—which means of course expense—ought you not to take into consideration the volume of sewage coming from the schools;—presuming there were 100 children on the roll of a school, what would be the average which you would put down, bearing in mind that the children are only attending the school one-third of the day? I can only give you what is the charge made by the Council for emptying the night-pans, which would be a guide as to what would be the amount of faecal matter coming away from the school. The school in Parramatta is charged £33 15s. per annum. The public school north is charged £19. That might be some guide as to what faecal matter is taken away from the schools.
2130. What is the total population of these Government institutions? About 2,980.

J. W. Withers, Esq., Mayor of Parramatta, sworn, and further examined:—

2131. *Chairman.*] Is it true that since you were last examined by the Committee a meeting of the Parramatta Council has been held to again consider the question of the sewerage of the Borough? Yes.
2132. Is this the resolution which was carried by the Council:—
- That whilst this meeting is desirous of the sewerage works being carried out, it is necessary that this Council should know its exact position with reference to the amount the Government intend to pay for connecting the Government institutions with the sewerage; also the probable cost that this work is not likely to exceed; and in order to obtain this information, it is hereby resolved that this meeting now stands adjourned for one month?
- Yes, that is the resolution.
2133. Then what the Council is asking for is, first of all, information as to what the Government would pay towards the scheme, and secondly, what the total capital cost would be? Yes.
2134. But has not the capital cost been put before the Council over and over again? We have always run away with the idea that it will cost about £50,000 or £60,000.
2135. Has the Council had the last report of the Committee upon this matter before them? No; we have not had any report about it.
2136. Are you now aware that the estimated cost of the proposed scheme is £76,000—that is the probable cost? I now understand it is from £90,000 to £125,000.
2137. When this matter was considered by the Council, during your predecessor's term of office, were not all the facts as to the area to be drained, size of sewers, and, generally speaking, the cost of the whole scheme put before the Council? I was not aware of it. I believe a map was shown, but I do not think anybody took much notice of it.
2138. But, as a matter of fact, on two or three occasions the Council has approved of, and urged the carrying out of the work? Yes; but we always understood it would not cost more than £50,000 or £60,000.
2139. How did they get that impression? I always understood from our Member, Mr. Hugh Taylor, that it would not cost more than that.
2140. But had you no information from the Department as to what it would cost? No, we knew nothing about it.
2141. Do you think that the Council, if they knew that £76,000 was to be the capital cost, would approve of the undertaking? There were only three who voted for it, and five against it. We had not a full Council then. Mr. Byrnes was not in the Council, and one Alderman's seat was disputed, and he has come back to the Council since; and one was away.
2142. You have heard the evidence of the assessor for the Metropolitan Water and Sewerage Board who estimates, upon their ordinary principle of valuation, that the Government would contribute about £820 per annum towards this scheme under a rate of 11d. in the £? Yes; and it would cost £4,000.
2143. Do you think your Council is prepared to take the responsibility? I am quite sure we are not. If we cannot get more than £820 from the Government, we cannot find the remaining £3,000.
2144. *Mr. Hoskins.*] Besides working expenses? Mr. Taylor told me last night that the least the Government would pay would be about £2,000. We had an ordinary meeting last night, and I asked him about the matter, and he said, "The Government will pay from £1,800 to £2,000."
2145. *Chairman.*] If the Government are only going to contribute £820, you think the Borough Council would not be prepared to go on with the scheme? I am quite sure of it. You would frighten all the people out of the place. People of property laugh at the very idea of it. I am quite sure the Parramatta people would not be inclined to pay £3,000 odd for sewerage.

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2146. *Mr. O'Sullivan.*] Your predecessor was Mr. C. J. Byrnes? Yes.
2147. I find that when he was examined, Mr. Humphery asked the following question:—
675. Assuming that this scheme is carried out at a cost of £75,000, and the annual charge for interest is about £3,000, would you expect the Government to contribute in the proportion in which they are now contributing—that is, about £2,200? I should not expect them to pay a bigger proportion than they would be legally entitled to pay.
- There he was made aware of the fact that it would cost £75,000;—did he never convey that information to the Borough Council? I have never heard of it.
2148. Was no one else connected with the Council aware that it would cost more than from £50,000 to £60,000? We have always thought it would cost from £45,000 to £50,000. I might call your attention to the report in a Parramatta newspaper of the last meeting at which some aldermen mentioned the matter.
2149. It is evident from the question and answer I have read to you that Mr. Byrnes knew better? He might have known better; but if we have to pay £3,000 for sewerage I am quite sure the people will "buck" at it.
2150. *Mr. Davies.*] You are rated at the present time with a general rate and a lighting rate? Yes; 2s. in the £, and we have the earth-closet system as well, which is extra.
2151. Do you think the ratepayers and the property-holders could afford to pay another 11d. in the £? I am sure they could not. It is ridiculous to think of such a thing. We have to pay 3d. for lighting, 9d. for water, and 1s. for the ordinary rate.
2152. In addition to that you have the night-pan system which costs about 9d. a week? Yes; it costs me 9d.
2153. Do you think it would be possible to relieve the borough of Parramatta of the drainage and sewage matter coming from these institutions if it were treated at the several institutions themselves;—would that relieve the borough of the necessity of any great expenditure on a sewerage system such as is proposed? As I said on a previous occasion, if the sewage of the institutions were taken out of the river at Parramatta, it would do away with the largest amount of nuisance we have.
2154. That is to say, if the sewage matter were treated at the institutions, under the control of some Government or municipal officer, it would relieve your municipality of the necessity of such an expenditure as is proposed—by the uniform adoption, for instance, of the pan system? I do not think any solid matter goes into the river, but imagine there being some 3,000 or 4,000 old men and women at the lunatic and other asylums—all the washings and urine go into the river. That is what causes the nuisance.
2155. Would it be possible to abate that nuisance if the sewage matter and drainage were intercepted and dealt with at the institution? Yes.
2156. Is there an abundance of labour available for the purpose of dealing with a matter of that kind? Yes.
2157. So that the cost would not be anything very great? No; it would cost nothing to the Government, I should think. They have hundreds of men there able to work.
2158. Then the whole of the sewerage matter might be intercepted and treated at the institutions? It ought to be.
2159. Do you think it could be treated so as not to be offensive to the town of Parramatta? Yes. There are the gaol and lunatic asylum that you might say are out of Parramatta. They are on the borders. There is a poor house in Macquarie-street, and one in George-street. In the one in George-street there are generally from 1,100 to 1,200 men, and in the one in Macquarie-street I have seen as many as 500.
2160. Where do you empty your pans? In the orchards.
2161. There is no special place allotted by the municipality? No; several people who keep orchards are very glad to get it. They apply to the Council for it.
2162. And you have no difficulty in finding a place to deposit the contents of the pans? No.
2163. Have you had any complaints from any people living in the localities in which the pans have been emptied as to the existence of a nuisance? No; it is thinly populated where they are emptied.
2164. And you have had no complaints? No.
2165. If that system were uniformly adopted throughout the municipality, you think there would be no occasion for any large expenditure on a sewerage scheme such as that which is proposed—that is, if the institutions provided for intercepting the sewage and treated the matter on the land adjacent to the public buildings? I do not see why they cannot do it, and I am quite sure if it were done it would do away with the greater part of the nuisance at Parramatta.
2166. And there would be no expense so far as labour is concerned? No; they have hundreds of men there able to do something. We are getting all the paupers from all over the country.
2167. *Mr. McCourt.*] Were you present when the Council passed a resolution approving of this work on the 6th July, 1892? Yes.
2168. Was that resolution carried unanimously? I could not tell you.
2169. Did you vote for it? That I could not tell you. Very likely, if the amount were £50,000 I would vote for it.
2170. The resolution is:—
- That the Parramatta Sewerage Works, as proposed by the Government to be carried out in Parramatta, now submitted, be adopted by this Council.
- So that you must have had the plans and everything before you. That resolution was adopted I presume? Yes; I know a plan was submitted.
2171. *Mr. Wall.*] Do you know whether that resolution was carried unanimously or not? I could not say. I know it was carried.
2172. You have not rescinded the resolution yet? No.
2173. Do you intend to rescind it? If the scheme is to cost Parramatta so much as is stated, I am quite sure it will be rescinded.
2174. That is, if it is to cost £75,000? That is, if it is to cost £3,000 odd a year.
2175. Do you know whether it is the intention of the Council to take any action with regard to rescinding the resolution, or to make any representations to the Committee on the subject? There is not the slightest doubt that the Council will take action in the matter, if we are supposed to find all this money.
2176. Now that you know you will have to find £3,000 a year, do you think the Council will take action to rescind the resolution? I am sure they will.
- 2177.

2177. *Mr. Humphery.*] What is your total rate at 1s. in the £? About £3,500.

2178. I think you said 10 per cent. of the ratable property would not be served by the sewerage scheme? A good deal of ratable property would not be served.

2179. I think you said about 10 per cent.? Yes; about 10 per cent.

2180. So that 1s. in the pound for sewerage purposes would produce a little over £3,000;—is that it? That would be about it.

2181. *Chairman.*] Will this matter come before the Council again in due course? Yes.

2182. Are you taking any steps to better inform the Council as to the cost and the amount the Government will contribute? We only go by what the assessor states.

2183. He says that under the method of assessment adopted in Sydney, the Government will contribute about £820? We shall have to have our own assessors I suppose. We would have no power to assess the Government property.

2184. Not unless special power were given to you under the Act? I know, from the opinions expressed in the Council last night, that they expect the Government will pay at least £2,000. We could not carry more than about £2,000 for sewerage?

2185. That is the most you could afford to give for sewerage? Yes; I asked every alderman about it last night.

2186. I want to know what steps you and the Council are taking for the purpose of answering the two points contained in the resolution moved by Mr. Moxham, namely, as to the definite amount the Government would contribute and the total of cost? I shall tell them what the assessor states—that the amount will be £802 11s. 9d.

2187. Are you, as Mayor, instructing the Council Clerk to apply to the Works Department for the information the Council requires? I shall take as a basis what Mr. Beaumont states.

J. W.
Withers, Esq.
18 Mar., 1894.

PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS.

Sewerage Works for Parramatta.

APPENDIX.

A.

[To Evidence of J. Barling, Esq.]

PARRAMATTA SEWERAGE SCHEME.

Reply to Report of Parliamentary Standing Committee on Public Works.

THE grounds on which the Parliamentary Standing Committee on Public Works resolved that it is not expedient that the proposed sewerage works at Parramatta should be constructed are as follows:—"That in the opinion of the Committee the sewage farm included in the proposed works is too small for the purpose, and the sewage should be dealt with at the proposed pumping station at Clay Cliff Creek by a system of precipitation and filtration, or other effective modern process." The Committee in their report state that the carrying out of an effectual system of sewage is necessary, but apparently guided entirely by the report and evidence tendered by Mr. G. H. Stayton (the other professional evidence being all in favour of the Sewage Farm) they express the opinion that precipitating works should form part of the present scheme.

Before entering upon a consideration of the main question, I may be permitted to draw attention to the *inuen*do contained in the report of the Committee in clause 11, where it is said that "the report from the Commissioner and his later examination, indicate that the Department had at that time a much fuller conception of the portion of the scheme relating to the sewage farm than appeared when the proposed works were first put before the Committee." I desire to say that before submitting the scheme to the Committee the Department had carefully studied the applicability of all the known arrangements for sewage disposal and utilisation, and had worked out the details of the farm as fully as was necessary to arrive at a just conclusion. In presenting a report to a non-professional committee, it was deemed unnecessary to enter upon such details, and these were omitted not only in the description of the sewage farm but of the main works. It would now, however, seem advisable to go somewhat into details in order that the misunderstanding into which the Committee have been led may be removed, and that the Minister for Works may have all the facts before him when determining on future action.

With reference to the question of the relative advantages of chemical precipitation and land filtration, I can without hesitation say that at the present time no sanitary engineer of eminence in Europe or America will be found who will give unqualified preference to the former. It is true that precipitation has been adopted in and around London, and in several provincial towns in Britain, and also on the Continent, but in such cases it has always been on account of local circumstances precluding the use of farms, except at large cost, owing to the unsuitability of the soil, or the impossibility of procuring land near enough to the area to be drained, precipitation is then accepted as the only known substitute for land filtration. One of the sanitarians who has been quoted as a strong advocate for the precipitation of sewage, Dr. Dupré, recently said in speaking of the precipitation works near London: "I am afraid that the London scheme is not well understood by many persons. It was based upon some very elaborate experiments by Mr. Dibdin and myself, which had led us to the conclusion, since verified by others, that no chemical scheme that could be adopted would do more than clarify the sewage, and remove a small proportion of the soluble matters. . . . It had often been said that the effluent produced by precipitation was not to be compared with that obtained from a sewage farm—that is true. I know no one familiar with the subject who denies that the most effective treatment of sewage is by passing it through land, provided the land is suitable." His contention for precipitation, was that the value of land near London, required for land filtration, was so great as to be prohibitive, that the volume of water in the Thames was sufficient to neutralize the impurities left in the clarified precipitant, and that the effluent was good enough to pass the health authorities.

Mr. Baldwin Latham, who is stated in the evidence to favour the adoption of the International process for a large district in Staffordshire, publicly expressed his views in April of this year as follows: "I will not say that sewage farming is the only mode of dealing with sewage, but there can be no doubt that it is the best mode when land can be got at anything like a reasonable rate, and within a reasonable distance of a town."

On the same occasion (a discussion on the Berlin sewage farms, which took place at the April meeting of the Institution of Civil Engineers), Dr. Drysdale, speaking of the Paris farms, said: "Those farms had convinced them all of the enormous superiority of the effluent, to any chemical purification attempted in England."

Mr. Dibbin, who has been associated with Dr. Dupré in his experiments on London sewage, said:—"Where sandy soil could be found for sewage irrigation, that method was no doubt the best. Ordinary precipitation processes would not remove more than a certain amount of the organic matter in solution." . . . "The results there obtained (by the Massachusetts State Board of Health) had entirely confirmed the view he had taken, that only a certain portion of the matters in solution could be removed by chemical precipitation, and for that purpose the best substances to be employed were found to be the very foolish and ridiculous substances, known as lime and sulphate of iron."

Lieutenant-Colonel A. S. Jones said, "It had long been known that land and vegetation, assisted by nitrifying organisms, could purify sewage, and that properly-managed sewage farms were, as Mr. Baldwin Latham, and Sir Douglas Galton, had stated, the healthiest localities for animal life."

Sir Robert Rawlinson said: "They could irrigate sea-sand, and they could irrigate the heaviest clay, and every class of land betwixt the two, but it should be remembered that the effect they got from the sewage, would be from the surface. He had special experiments made with regard to the celebrated Craigentiny meadows near Edinburgh. Some of those meadows which were common sea-sand, had received sewage more than a century, and at 6 inches in depth below the surface, they showed no stain or taint. . . . There was no evidence that one acre of that land at Edinburgh had either been sickened, or in any respect made dangerous to health by the gross manner in which the most corrupt sewage had been floated over it." "The chemical process, the precipitating process, the filtering process, and the combination of chemicals with filtering, had all been tried. The result of his experience . . . was that the crude sewage, in its simple form, without tampering with it by chemicals was the best form for the land, and would produce the best results, if applied judiciously in proper dilution, in proper quantities, and at proper times. . . . Many towns were so situated that they were not in a position to be able to carry out broad irrigation. Then they had to resort to chemical treatment to clarify, as far as they could, the effluent water before it passed into the river. But in no case was the clarified sewage pure; it had seven-eighths of the salts of sewage in it . . . and if passed into a shallow brook or a small river, it would in summer ferment and become putrid and offensive."

Mr. Paterson said: "The complete experiments of the Board of Health of the State of Massachusetts proved that pure sand or gravel, or both combined without aid of soil or vegetation, have an unequalled power of destroying the organic matters and the bacteria of sewage, without leaving a trace behind it, the sand and gravel being left perfectly clean."

Mr. Santo Crimp, in his recent work on Sewage disposal, gives extracts from the reports of the Rivers Pollution Commissioners and others, and stamps them with his approval. They are valuable in showing that from the earliest to the latest, they are all in favour of the adoption of sewage farms, unless in the face of insurmountable difficulties. The following are a few extracts:—

The Royal Sewage Commissioners' Report, 1865, says:—"The right way to dispose of town sewage is to apply it continuously to land, and it is only by such application that the pollution of rivers can be avoided."

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The Local Government Board Committee, 1875, report that—"Town sewage can best and most cheaply be disposed of and purified by the process of land irrigation for agricultural purposes, where local conditions are favourable to its application." . . . "That land irrigation is not practicable in all cases, and *therefore*, other modes of dealing with sewage must be allowed."

Conclusions of Commissioners appointed to propose measures for remedying the pollution of the Seine, 1874:—"The experiments made in the plain of Gennevilliers are entirely conclusive in showing, not only the luxuriant vegetation which may be produced by irrigation, but their harmlessness, in respect of health, as well as the perfect purification of the waters which return to the river." . . . "As to purification by chemical processes . . . the Commissioners are of opinion that it will not constitute a complete and practical solution of the question."

The Committee appointed by the Corporation of Glasgow in 1830 to inquire into various methods of sewage disposal report that:—"Whatever be the process of chemical purification, the effluent is still impure and will putrify and give off noxious gases if kept for some time, and we know of no way but oxidation in which the purification can be completed. Filtration through cultivated land, *i.e.*, irrigation, is probably the best means."

The Lower Thames Valley Main Sewerage Board proposed a joint scheme of sewage precipitation. It was rejected by the Committee of the House of Commons, who in their report said:—"Your Committee believe that in these cases the process of filtering the chemically purified effluent through earth ought, if possible, to be adopted, which was not provided for in the scheme under their consideration."

The Commissioners appointed by the Municipal authorities of the city of Turin report "*that the chemical or precipitation methods for the treatment of sewage do not succeed in separating the manurial ingredients, are costly, clarify, but do not purify the water, which moreover remains liable to undergo putrefaction afresh if the process is not followed by some method of oxidation. The only method recognised up to the present time as really efficacious for the purification of sewage is irrigation, carried out in a proper way upon suitable soil.*"

The Royal Commissioners on Metropolitan Sewage discharge, appointed in 1884, after detailing the condition of the River Thames and urging the necessity of taking immediate steps to improve it at the two great outlets at Barking Creek and Crossness say:—"The liquid portion of the sewage remaining after the precipitation of the solids may as a *preliminary and temporary measure* be suffered to escape into the river. . . . But we believe that the liquid so separated would not be sufficiently free from noxious matters to allow of its being discharged at the present cutfalls as a *permanent measure*. It would require further purification, and this, according to the present state of knowledge, can only be done effectually by its application to land. In the case of the Metropolis the best method of applying the liquid to land with a view to its purification would be by *intermittent filtration.*"

Mr. Santo Crimp, writing in 1890, says:—"In summarising the foregoing conclusions and recommendations of the various Commissioners and Committees who have investigated the subject of sewage disposal on different occasions in this and in other countries during the past thirty years, it will be observed that *perfect unanimity obtains in regard to the purification of sewage by means of land. Notwithstanding the fact that during that period the chemical treatment of sewage has received the concentrated attention of the most eminent chemists, it is still recognised that in order to produce a sewage effluent of any substantial degree of purity land must be employed in some form or other.*"

The Massachusetts Board of Health have for several years been making experiments on sewage precipitation and filtration, which are acknowledged to be the most complete and exhaustive hitherto undertaken. The general results will be referred to further on, but it may be said here that after testing all the precipitants now in use Mr. H. F. Mills, their engineer, states that he found it "*totally impossible to obtain as good a result by their use as by simple intermittent filtration through sand.*"

Were further evidence required of the preference of sanitarians for land filtration over chemical precipitation, and the absolute superiority of the former process to the latter, it might be found in the fact that Sanitary Commission, appointed by the Paris authorities, for the investigation of the question *after having visited England and Germany, and having examined every known process of sewage purification, have determined on the adoption for the whole of Paris of the farm system, previously in use for part of it, at Gennevilliers and more recently at Achères.*

The pollution of the Thames water into which so-called purified effluent is being discharged is notorious. So much so, that many schemes have been proposed by the most eminent English sanitarians for the diversion of the sewage and its utilisation on farms. They, as well as the Royal Commission previously quoted, urge the necessity of action in this direction.

Of chemical precipitation processes, the International, which seems to be favoured by the Committee, is, I believe, the best, the Ferezone and Polarite acting to a certain extent as oxidizing agents. It is undoubtedly "modern," having been first introduced towards the end of 1887, only five years ago. Whether this is an advantage is doubtful, when it is considered that during the present century over 400 patents have been taken out for various precipitating mediums, while the "survivals" could be counted on the fingers. *Almost the only literature obtainable on its advantages is to be found in the pamphlets published by the Company interested in its sale. It does not seem to be in all cases successful, as at Wolverhampton, where it has been tried, it is stated by Mr. Berrington not to have offered any particular advantage, nor exercised any marked influence on the effluent. Mr. Cooper recently stated in reference to the process that "though the International Company's filters were certainly very practical, he did not for his own part believe in the great superiority of Polarite."*

The objections raised to all chemical precipitants yet known are based on very substantial scientific grounds. Their action is at the best partial, they act as clarifiers rather than purifiers of the sewage. Although the effluent may be discharged perfectly clear it still retains nearly the whole of the salts originally found in the sewage, and therefore putrefaction must rapidly follow unless the body of water into which it is discharged is sufficiently large to complete the process of oxidation.

In the purification of sewage by land filtration, perhaps the most important process is that of nitrification, that is, the conversion of the original organic nitrogenous compounds into harmless nitrates. *This is the work of an organism present in all soils, which breaks up and destroys the organic matters and renders the effluent entirely innocuous. This microbial action exists in clay soils to a depth of 15 in. to 18 in., and in more porous soils, sand, &c., to a depth of about 4 ft.; indeed as far as the friability of the soil will allow the air necessary to its propagation to penetrate.*

This property of land was investigated first by M. M. Schlessing and Muntz in 1877. It was proved that it was the result of organisms, active only in the presence of atmospheric air, that antiseptics were fatal to it, that nitrification was almost absent at freezing point, that it was most active at 100° Fahr., that though it entirely ceases at 131° Fahr., it has been shown that in sterilised sewage, nitrification can be again started by the addition of a few particles of fresh surface soil. Dr. Declaux, in his treatise on Fermentation, 1884, states that as a result of M. Pasteur's investigations, it has been ascertained that in six hours one globule can increase to 16 millions, and that "whenever and wherever there is a decomposition of organic matter, whether it be in the case of a herb or an oak, of a worm or a whale, the work is exclusively done by infinitely small organisms. They are the important, almost the only agents of universal hygiene: they clear away more quickly than the dogs of Constantinople, or the wild beast of the desert, the remains of all that has had life." Sewerage is favourable to the development of this organism, which in its presence increases to a wonderful extent, and hence it is that a sewage farm properly laid out and efficiently managed will improve rather than deteriorate the longer it is used.

Very exhaustive experiments have been made on this matter by the Massachusetts Board of Health, the result of which may be seen in their reports. In reviewing the results, *Engineering* (February 19th, 1892) states: "*The experiments prove conclusively that sand or gravel filtration is not a mere straining, but the organic matter of the sewage is actually burnt up and destroyed by the action of an organism which the experimenters have succeeded in isolating for the first time in America, though such an organism had previously been observed in Europe. . . . This organism requires a supply of oxygen to operate on the sewage, and hence the necessity of intermittent filtration, which will allow the upper part of the filter to become dry, and admit air.*" . . . "The fact that the purification depends on an organism also explains why some time is necessary for the filter to adapt itself to its work. In certain cases nitrification did not commence till some weeks after the sewage had been applied to the tank, but when in full working order it will go on for an indefinite period, provided that the amount of sewage applied is not too large. . . . This rate (36,000 gallons per acre per day) was maintained for six months, and was then increased to 100,000 gallons per day (equal to a population of 900 and 2,500 per acre respectively), with but little change in the result. At the end of the experiment the stones of the filter were found perfectly clean."

These facts are further proved by the experience gained on the Botany farm, where the effluent is now purer while nitrifying 56,600 gallons (equal to a population of 1,415 per acre) per day than when sewage was first placed on it.

Mr.

Mr. Baldwin Latham, in the discussion previously referred to, said in April last: "In England they almost seemed to have stood still with regard to the question of the purification of sewage. The French came to England to learn what had been done here. He had had numerous interviews with Mr. Durand Clay and other French engineers on the subject, and he had gone with them to the different sewage farms established in this country. They had then returned to Paris and had shown that the best method for the purification of sewage was its application to the land. They discovered on the Paris sewage farm the nitrifying organism, or, as it had been called, the friendly microbe, a microbe which had the power of converting nitrogenous matter into nitric acid, and, given the proper condition for its cultivation, it would go on purifying sewage to any extent and destroying all the noxious matter which was so baneful to life and health."

It need hardly be pointed out that nitrification is entirely absent when sewage is chemically treated. The precipitants arrest and carry down the organic matters found in the sewage, but do not destroy them. It may further be stated that it is found that in cases where the sludge and effluent are further treated on land nitrification is seriously retarded by the presence of chemicals.

Having indicated the general grounds on which it was determined to adopt a sewage farm for Parramatta in preference to chemical precipitation it now only remains to show that the site selected is suitable, and that the area resumed is sufficient for requirements.

On the first point it will be only necessary to recapitulate the reasons for the selection given by me in evidence before the Committee. They were shortly as follows:—

1. That though distant from populated areas the site is convenient to Parramatta.
2. That it is central to, and might hereafter be utilised for, the drainage of Granville and other Municipalities.
3. That it is adjoined by a considerable area of low-lying land which, though useless for residential purposes, could be made available by reclamation for an extension of the farm in the event of other areas being hereafter drained to it.
4. That the material intended to be used in the formation of this farm is proved by experience in America and Europe, as well as at the Botany farm, to be of the best possible description, excelling every other known filtering medium, whether natural or artificial.
5. That no one has so far been able to point out a site near Parramatta having the same advantages.

In considering the size of a sewage farm two points must be considered—first the nature of the sewage to be treated, and second the method of treatment. Sewage farms may be treated in three ways, viz. . . . By broad irrigation, by downward intermittent filtration, or by a combination of the two. It is on the last method that the Parramatta farm is proposed to be cultivated, and for which it is best suited. This fact seems to have, to some extent, escaped the attention of the Committee when considering their report, as in it they deal not with the scheme as laid before them, but as if broad irrigation alone was to be employed.

It is quite correct, as stated in their report, that on farms established in England for broad irrigation a basis of from 100 to 200 persons per acre is accepted. It is also true, however, that where downward intermittent filtration is employed even in part, the sewage from 500 to 800 persons per acre is treated. One of the most eminent writers on the subject, Mr. Bailey Denton, fixes the limit at 1,100. The Rivers Pollution Commissioners, in 1870, as a result of their investigation, fixed the limit at 2,000 persons per acre, but this has since been reduced by them to 1,000 per acre.

It is further important to observe that in England and Germany, where sewage-farming has been carried out to the greatest extent, long and severe frosts have to be contended with during winter, when vegetation is almost entirely checked, nitrification is greatly retarded; and, were it not that the temperature of the sewage is higher than that of the ground, its distribution and absorption by the soil would practically be at a standstill. Although the somewhat reduced sewage discharge during winter, to some extent, compensates for this, it is evident that provision has to be made for winter farming by the increase of area in proportion to population. In this Colony, where the average temperature is higher, where frost is absent, vegetation grows more rapidly and continuously, and evaporation is greater; the ratio of discharge to area can, I believe, with perfect safety, be increased by at least one-fourth, bringing the limit up to about 1,400 persons per acre.

On this basis, if downward intermittent filtration alone were adopted, the area required for Parramatta would be as follows:—

	Population drained.	Area required at 1,400 persons.	Discharge per day per acre.
		per acre.	gallons.
For present population	12,000	8.6	56,000
For prospective population in 20 to 25 years	32,500	23.2	56,000
For ultimate population	48,500	34.6	56,000

By a table given by Mr. Bailey Denton, which, though published some years ago, has been recognised as fairly correct by recent authorities, the filtration area required at Parramatta Farm for the present, prospective, and ultimate populations would be 9.9 acres, 26.8 acres, and 40.2 acres respectively, with the sub-drains at an average of 5 ft. below the surface, and a discharge of 48,400 gallons per acre per day. The table is based on the supposition that each cubic yard of sand will nitrify 7½ gallons of sewage. Mr. Santo Crimp states that experiments with the Beddington and Dowsley soils show that they will effectually purify 7.6 gallons and 9.9 gallons per cubic yard respectively, the latter being equivalent to nearly 100,000 gallons of sewage per acre per day. Under the more favourable climatic conditions prevailing here, these areas would be somewhat reduced, and would correspond very nearly with those given above.

These calculations are based on the assumption that each area is allowed two periods of rest for one of work, or, in other words, that on the average only one-third of the area is receiving the sewage at one time, while the other two-thirds are being recuperated.

It may, of course, be said that the conditions—the nature of the soil, &c.—of the various places I have referred to are not fully known, and consequently cannot be taken as examples of what might be expected at Parramatta. Let us, therefore, see what is actually being done at the Botany Farm. The daily dry weather sewage discharge at Botany Farm is 1,600,000 gallons. The total area prepared for the reception of sewerage is 38½ acres. Of this area 12½ acres are under crop, 13½ acres are used as filter-beds, and the balance as a storm-water overflow.

The filter-beds are frequently called upon to take the whole discharge equal to 109,100 gallons per acre, for lengthened periods, and do so successfully. Taking, however, the irrigation and filter-beds together, the discharge per acre is still large, viz., 56,600 gallons per day, equal at 40 gallons per head, to a population of 1,415 per acre. This is done without under-draining. Applying this as before to Parramatta, the area required for the present, prospective, and ultimate population would be as follows:—

	Population of area drained.	Discharge per day.	Area required of farm.	Discharge per acre, per day.
		gallons.	acres	gallons.
Present population	12,000	480,000	8.5	56,600
Prospective population in 20 to 25 years	32,500	1,300,000	23.0	56,600
Ultimate population	48,500	1,940,000	34.3	56,600

Mr. Bailey Denton's calculation, given above, allows a discharge per acre, per day, of 48,400 gallons. If one-fourth is added to this for colonial practice, owing to climatic advantages, it would be equal to 60,500 gallons, a quantity somewhat above that discharged on to the Botany farm, which is, as stated, 56,600 gallons.

That the purification of the sewage by land filtration is almost perfect is shown by the experiments being carried out by the Massachusetts Board of Health previously referred to, where various filtering materials have been under continuous scientific observation for some years. These experiments prove conclusively that enormous quantities of sewage can be passed through

through sand and gravel without reducing the filtering properties of the material; and that the process is not merely a mechanical one, by which the impurities are retained in the filter, but that these impurities are, by the process of nitrification completely oxidised and burned out, leaving the filter after long continued use, as pure and clean as when it was first prepared.

Where coarse sand 5 feet deep was used as a filter, 50,000 gallons of sewage per acre per day were supplied, and it was found that 99 per cent. of the organic matter was destroyed. With 70,000 gallons per acre per day, the percentage of organic matter destroyed was 98.2 per cent.; with 102,000 gallons it was 98.7 per cent. At the end of the third year, the quantity of sewage being treated was more than double of that passed through at the end of the second year, and notwithstanding this the effluent was purer. During the whole time, from 98.6 per cent. to 99.98 per cent. of the bacteria in the sewage was being destroyed. With similar material in another filter 100,000 gallons per acre per day, have been treated, and gave an effluent in which 99 per cent. of the organic matter was destroyed. This filter has now been tested with a supply of 180,000 gallons per acre per day, and gave a precipitant in which 97 per cent. of the impurities were destroyed. Where very fine sand was tested the results have been equally satisfactory, so far as they have gone. One filter had at date of last report been under observation for twelve months; during eight months, sewage at the rate of 42,000 gallons per acre per day was being passed, and the quantity was then increased to 60,000 gallons. The last analysis shows that 99.7 per cent. of the organic matter was destroyed, and that practically none of the bacteria remained. A 100,000-gallon supply has since been tested, but the results are not yet to hand.

A mixture of coarse and fine sand and fine gravel in a bed only 4 feet deep, after eighteen months' continuous use, with a supply of 42,000 gallons for fifteen months, afterwards increased to 60,000 gallons, gave an effluent in which 99.3% of the organic matter was destroyed together with practically all the bacteria.

I may here be allowed to remark that the activity of the nitrifying organism as shown in the experiments given above, is an ample answer to the question recently raised in Parliament and elsewhere, as to the effect of sewage farms in propagating epidemic diseases. As shown by the analysis of effluent waters taken at the Massachusetts Experimental Station and on continental farms, all bacterial life, on application to land, is at once destroyed by nitrification.

It may be further stated that in the immediate prospect of the recent cholera epidemic making its appearance in France, the Municipal authorities of Paris took action to ascertain the best means of improving the sanitary condition of that city, and averting the calamity. A commission was appointed with M. Poubelle, the Prefect of the Seine, as its President. It obtained the assistance and advice of the most eminent scientists of the day, and has had access to most carefully prepared records collected by sanitary authorities of the course of zymotic disease in severed towns, and of all known precipitating systems in use. The determination arrived at was, that the sewage farm system is the best, and work at Achères is being urgently carried out in consequence.

There is an average population residing on the Berlin farms of about 1,600 persons. Since 1885 the death-rate from zymotic diseases has fallen from 4.32 to 1.13 per 1,000, and generally speaking, when these diseases have been prevalent in Berlin the farm servants have escaped them.

The conclusions to be drawn from the foregoing facts are: First—That the filtration limit in artificial sand filters has not yet been ascertained, but that the most recent records show that 180,000 gallons per acre per day, equal with a 40-gallon supply per head to a population of 4,500 per acre can be absorbed, and still give an effluent almost perfectly pure. (*Engineering*, 19th February, 1892). Second—That the limit accepted by the Rivers Pollution Commissioners, for English practice, is a discharge of 40,000 gallons per acre per day, equal to a population of 1,000 per acre. Third—That with the more favourable climatic conditions prevailing in this Colony, that limit can here be safely raised, as proved by the fact that at Botany 56,600 gallons per acre per day, equal at 40 gallons per head to a population of 1,415 per acre, are being treated, and that, without subdrainage.

The sewage farm at Parramatta is 64½ acres extent; 42 acres will consist of sand filling and 22½ acres of friable clay, which though not capable of taking so much sewage as the sand is considered by some authorities to be even a better filtering medium.

The present population of Parramatta is 12,000, with an estimated sewage discharge of 480,000 gallons.

The prospective population in twenty to twenty-five years will be 32,500, with a sewage discharge of 1,300,000 gallons; and the ultimate population 48,500, with a sewage discharge of 1,940,000 gallons.

Reduced to population and discharge per acre of farm these figures are as follows:—

	Population of Area drained.	Population served per Acre of Farm.	Sewerage Discharge per Acre of Farm.
Present population.....	12,000	186	7,442
Prospective population in 20 to 25 years	32,500	504	20,155
Ultimate population.....	48,500	752	30,077

It will thus be seen that even with the ultimate population (which will certainly not be reached within the next half-century) the Parramatta farm will have to do little more than half the work that the Botany farm is now doing successfully with similar filtering materials. To take the sewage of the present population it is proposed to prepare about 40 acres (though a smaller area would probably suffice) to be used partly as a filter and partly for irrigation, so that the land will not be overstrained till its nitrifying properties are fully developed by cultivation and working. As the population increases this area will be more fully utilised, and extended as found necessary. It will be at least twenty years before the minimum limit allowed in cold countries for intermittent downward filtration, viz., 500 persons per acre is reached, and it is, therefore, in my opinion, quite unnecessary to introduce any artificial means of precipitation, even if combined with land filtration. If at the end of, say, twenty years it is deemed desirable on commercial grounds not to further increase the quantity of sewage per acre, two courses will then be open, viz., either to purchase more land or to dispose of a portion of the sewage by precipitation. By that time the now "modern" processes will have been thoroughly tested and probably others discovered, and the authorities will have the advantage of selecting the best system then known, without being hampered with antiquated and perhaps useless plant.

The study of Bacteriology, though having advanced rapidly during the last few years, is still in its infancy. Chemists and scientists are now concentrating their attention upon it, and new light is being thrown on the subject almost daily. When it is more fully understood there will be a prospect, as instanced by the experiments of Messrs. Adency and Parry, of Dublin, recently explained by them to the British Institute of Public Health, of discovering some artificial process of nitrification and oxidation approaching in efficiency to the natural one through land. Until the science is further advanced the inadvisability of accepting, unless under the most urgent necessity, any artificial process now known will be apparent.

On page 9 of their report, the Public Works Committee seem to contemplate a combination of land filtration with the precipitating process. Quoting from Mr. Stayton's evidence, they say: "The Polarite filters would not necessarily always be in use. Irrigation from the tanks can be conducted in two ways: the supernatant water may be drawn off direct from the large tanks after precipitation, or the effluent may be used after passage through the filters. During the growing season, when the rye-grass will greedily devour nearly any quantity of sewage, the water may be taken direct from the precipitation tanks; but when the land and crops have but little purifying power, the filtering tanks would be constantly employed, the effluent being afterwards run over the surface of the land for aeration." Passing over the fact that this evidence bears out the contention that even if precipitation is used the sewage farm cannot be dispensed with, I would point out: First—that at Clay Cliff Creek, where the Committee propose to locate the precipitating works, only a few acres of land are available; second—that they would have to be resumed at a very large cost, owing to their suitability for building sites and their contiguity to the town; third—that even if a sufficient area could be obtained it is not so suitable as that on the farm already purchased, as it consists wholly of clay, and having an irregular surface would require more preparation; and fourth—that its adoption would entail the abandonment of the area already resumed at a cost of about £6,000.

The Committee make no reference to the relative cost of the two schemes, or of the working expenses. In my previous report I showed that under both these heads the departmental scheme has a decided advantage. I now submit that I have succeeded in showing: First—that it is only under exceptional circumstances, such as the impossibility of procuring suitable land for filtration, that precipitation should be allowed; second—that no such difficulty exists in the case of Parramatta; third—that the site selected and purchased at Duck River is suitable for a farm, while that at Clay Cliff Creek is not, and that the material of which it is proposed to construct the farm is proved to have qualities superior to any other

other for destroying all noxious matter hurtful to life and health; fourth—that land irrigation and filtration is the only known means of procuring a pure effluent; fifth—that all sanitarians agree and statistics show that sewage farms, properly managed, are not injurious to health, nor do they create a nuisance; sixth—that the area resumed will be amply sufficient for requirements not only of the present but for the prospective population in twenty-five years, and with modification of arrangements, for the ultimate population of 48,500 also.

I regret that under these circumstances I cannot concur in the recommendation of the Parliamentary Standing Committee on Public Works that "the sewage should be dealt with at the pumping station at Clay Cliff Creek by a system of precipitation and filtration." I would further strongly urge that no action should be taken in carrying out their recommendation till a competent and unprejudiced engineering opinion has been obtained on the matter.

ROBE. HICKSON, M. Inst. C.E.,

12th November, 1892.

Commissioner and Engineer-in-Chief, Roads, Bridges, and Sewerage.

A1.

Messrs. W. W. Wardell, C. N. Bell, and G. Chanier to The Under Secretary for Public Works.
Parramatta Sewerage.

Sir,

Sydney, 28 July, 1893.

Referring to your letter of the 15th July instant, conveying to the undersigned their appointments by the Hon. the Minister for Public Works as a Board to inquire into proposals made for sewage works for the Town of Parramatta, and to your instructions that we should review the evidence given in the Report of the Parliamentary Standing Committee on Public Works relative thereto, inspect the site of the proposed works, calling further evidence if necessary, and advise on the question raised as to whether the scheme proposed by the Department for treating the sewage entirely by sewage-farming, as at Botany, should be carried out, or whether it is more desirable to treat it by a process of precipitation and filtration, we have the honour to report as follows:—

In compliance with these instructions we have carefully considered all the evidence adduced, the separate professional reports on the subject, and the finding of the Parliamentary Committee. We also visited the town of Parramatta, and examined the localities where it was proposed to lay the main sewers, also the condition of drainage of the township, the adjacent river, and the site for the proposed pumping-station. We visited the reclamation works at Neutral Bay and Long Cove to ascertain the nature of the material which is to be obtained, and its suitability for sewage-farming uses, and we examined with every care the site chosen for the proposed farm at Parramatta, where a block of land has already been secured by the Government for the purpose.

We made, also, a careful inspection of the Sewage Farm at Botany, and found it in excellent working order, giving satisfactory results, and without any nuisance whatever.

The evidence already before us is so abundant that we did not consider it necessary to invite any further, and we proceeded to weigh it in respect to the two schemes on which our opinion is desired.

There can be no doubt that the evidence given in favour of precipitation and filtration shows how useful it would be in cases of necessity, or where sewage-farming would be impracticable; but as all the conditions necessary to make sewage-farming successful are present in the case of Parramatta, we found no difficulty in arriving at a unanimous decision in its favour, as we consider it the simplest, cheapest, and best method of meeting the requirements.

In this opinion we are supported, not only by the preponderance of the evidence before us, but by the overwhelming concurrence of the leading authorities of the present day on sanitary engineering, many of whom have been quoted in the Commissioner's reply, dated 12th November, 1892, to the Report of the Parliamentary Committee. Those engineers, also, who have recently advised the Australian Governments on the drainage of their principal cities have been of one accord in recommending sewage irrigation, and where their designs have been carried out a perfect success has been realised. The examples at Adelaide, S.A., Christchurch, N.Z., and Botany, are instances in point, and similar works are now in course of construction for the sewage of Melbourne. At Christchurch, N.Z., the area prepared and used is 42 acres, the population draining to it is 30,000, and the sewage discharge 1,200,000 gallons per day. It has been in use ten years without complaint of any kind, although surrounded by houses and farms.

We think, indeed, there can be no reasonable doubt, in view of the varied experience of the past twenty years, that where suitable land is available the practice of distributing the sewage on its surface is the best means for its disposal.

The very important question raised by the Committee as to the area of the ground available being sufficient for the purpose intended, has been so completely answered by the Commissioner's reply, 12/11/92, that we need only refer to it, and we think that the sandy material with which it is proposed to reclaim the low lying portion of the farm is well adapted for sewage irrigation, and the area, 40 acres, so reclaimed will be amply large enough to meet the requirement of the sewage of Parramatta for many years to come. The more elevated portion of the ground, comprising 22 acres, can by means of subsoil drainage be rendered equally serviceable when required, and the whole area of 62 acres then available would, in our opinion, be sufficient for three times the present population of the town. On this account we consider that the initial outlay provided for the preparation of this portion may be postponed for many years, or very largely reduced.

We would also advise the diversion of the rainfall. In the case of Parramatta there is no reason why any rain at all should be admitted to the sewers. The town of Parramatta is situated on sloping ground, where all rain-water will flow with ease to the nearest storm-water channels or drains. If the rainfall is diverted the quantity of sewage would be reduced by more than one-half, and, therefore, the capacity of the land to deal with is at least doubled, while the sewage itself, being so much less diluted, would be better suited for farming requirements. It would also require less pumping and smaller conduits, and would probably reduce the cost of construction by 25 per cent.

We also find that, under the proposal to exclude the rain-water in both cases in comparing the two systems of sewage-farming and the "International," both the initial and annual cost of the former would be about 25 per cent. less than the latter.

Subject, therefore, to what we have suggested, our own judgment and experiences confirm the recommendation of the Department, and, supported as we are by the opinion of those who are accepted as the best authorities in Europe on this branch of science, we have no hesitation in advising that—with the modifications mentioned—they should be adopted.

We have, &c.,

W. W. WARDELL, M. Inst. C.E., Chairman.

C. NAPIER BELL, M. Inst. C.E.

GEORGE CHANIER, M. Inst. C.E.

A2.

The Commissioner and Engineer-in-Chief to The Under Secretary for Public Works.

Department of Public Works, Roads and Bridges and Sewerage Branch,

Sydney, 12 August, 1893.

Parramatta Sewerage Scheme.

It cannot but be a matter of considerable satisfaction to the Minister to be assured that the scheme for the sewerage of Parramatta, to which he, on the advice of his responsible officers, was committed, has been shown, after a very searching inquiry by three professional and independent engineering experts, to be the "simplest, cheapest, and best method of meeting the requirements," and so far from the farm being too small, they are of opinion "that 40 acres (out of the total of 62) will be amply large enough to meet the requirements for many years to come."

While on this point I might be permitted to remark that engineers have a great deal to learn yet as to the actual capabilities of a sewage-farm composed of sand and in a climate such as ours.

The Botany Sewage Farm has certainly surprised me, and makes one feel how very little one really knew on the subject. It was originally designed to serve a population of 800 persons per acre, which, at the time, was considered a large number. As a matter of fact, however, it is now (after being at work some five years) dealing, without creating any nuisance whatsoever, with the sewage from a population of over 1,400 per acre; and I am of opinion, if no more land could be obtained and the population increased, the same area could be made to serve for a larger number of people, which leads one to think the Rivers Pollution Commissioners were not so far wrong when, in 1870, they fixed the limit at 2,000 persons per acre.

It

It should also be remembered that the size of sewage farms is generally decided more from a commercial point of view than from that of a sanitary one. The larger the farm, of course within reason, the better it will pay, the revenue increasing in direct proportion to the size of the farm, while the expenses of management will not increase at anything like the same rate; and this, no doubt, to some extent accounts for the large farms, in proportion to the population, which are generally in use.

The exclusion of the storm-water from the sewers suggested by Messrs. Wardell, Bell, and Chamier, will receive careful consideration when the details of the scheme come to be worked out. I would, however, point out that this is a matter on which the leading sanitary engineers of the present day hold very different views.

Leaving out all artificial schemes, there are three means of dealing with the sewage of towns, as follows:—

1st. "Combined System," by which all storm-water is carried off with the sewage.

2nd. "Separate System," by which sewage only is dealt with, storm-water being carried by other means.

3rd. "Partially Separate System," by which a certain portion of the storm-water is allowed into the sewers.

Each of these systems has its own advocates, and I am inclined to think the "Partially Separate System" is, as a rule, the best. It is this system which has been adopted in the sewerage of Sydney and suburbs, the quantity of water allowed into the Sydney sewers ranging from 4 cubic feet per minute per acre to 1.19 cubic feet per minute per acre, while for Parramatta that quantity was reduced to .92 cubic feet per minute per acre. But, as I said before, it may be quite possible to exclude all storm-water from the Parramatta sewers, in which case a saving in the cost of the scheme might be effected.

The question now to decide is, what is the next step to be taken? and though this is a matter which rests entirely with the Minister, I might be permitted to say, it would appear of little use to resubmit a purely sanitary engineering question such as this, which has been fully dealt with by a Scientific Board, to a committee of laymen.

ROBT. HICKSON.

A3.

MR. G. GORDON, M.I.C.E., ON THE DISPOSAL OF SEWAGE.

Dear Sir,

Sydney, 13 February, 1894.

In compliance with your request at our interview yesterday, I have much pleasure in placing at your disposal the following notes on the disposal of sewage. I have given the subject much careful study for a good many years. About 1880, I sent in a report on the sewerage of Melbourne, which gained the premium offered by the then Mayor. A few years ago, at the request of the Royal Sanitary Commission, I submitted a new scheme for the sewerage of Melbourne, which embraced a much larger area than my report of 1880 had been intended to deal with. I also advised the City Council of Dunedin on the disposal of the sewage there. During my recent visit to England, I visited a good many sewerage works there, both of precipitation and filtration, that being one object of my visit. I found in England that the prevailing opinion among sanitary engineers of eminence is that the best means of disposal of the sewage of inland towns, or wherever a discharge into a strong tidal current is impracticable, and wherever land can be obtained, is by means of irrigation, both as regards efficiency and economy. The examples of Berlin, Adelaide, and many other cities where this system has been adopted with great success from a sanitary point of view, are no doubt one reason why purification by filtration is, so far as my inquiries inform me, looked on with less and less favour. In my opinion, in wet climates a portion of the farm should be set apart for "intermittent downward filtration," as a means of rapid purification at times when the sewage and rainfall are in excess of what can be profitably applied to the farm proper. The same consideration seems to point to the desirability of as much as possible of the rainfall being disposed of separately from the sewage. I have not had any opportunity of carrying out any sewerage works, as distinguished from flood-drainage of cities, but many of noting the advantages and defects of different systems; and although I have not personally examined the special case in question, from what I have read of it, I have no doubt whatever that a sewage-farm is the only proper plan to be adopted, and that the available area is amply sufficient.

Yours faithfully,

G. GORDON, M.I.C.E.

J. Barling, Esq.

In recommending the separate system, I do not recommend the exclusion of the drainage from back yards, &c., but only the clean water from roofs, storm-water running off large clean areas—parks, gardens, &c.—which can be disposed of by open channels without nuisance; but it is chiefly a question of expense.—G.G.

Forward for information of the Public Works Committee.—W.J.L., 14/2/94. The Secretary to the Committee.—J.B., 14/2/94.

A4.

OBSERVATIONS ON THE TREATMENT OF SEWAGE IN THE UNITED KINGDOM.

The Under Secretary for Public Works,—

Sir,

Harbours and Rivers Department, Sydney, 20/2/94.

During my visit to England last August, instructions were forwarded to me from the Minister, directing me to make some inquiries on behalf of the Commissioner and Engineer-in-Chief for Roads and Bridges, into the efficacy of some of the systems adopted for the treatment of sewage in the United Kingdom, and especially to obtain particulars of a process lately introduced by Messrs. Adeney and Parry, of Dublin.

As I was aware that a very complete and detailed report had been submitted on "Sewage Purification as practised in Great Britain" so recently as 1891, by Mr. Staynton, M. Inst. C.E.; from information gathered by him during a prolonged visit to Europe, I did not consider it necessary to enter into a detailed examination of different sewage systems—for which indeed I had neither time nor funds available—but rather endeavoured to obtain what information I could, as to practical results from interviews with well known sanitary authorities in England and Ireland, and by the personal examination of a few typical works. I avoided obtaining information from the proprietors of any patented process—except in one case, where it was unavoidable, and then I carefully verified the information—as I generally find such information is apt to be highly coloured.

As the result of my observations, I am inclined to believe that after all the best system is the old-fashioned one of Ocean discharge, simply discharging the crude sewage into the deep water of the ocean. Unfortunately, there are few instances remaining where this can be done in the old country without injuring the adjoining foreshores. It is about to be adopted for the city of Dublin, the outfall being at the extremity of the south wall at the entrance to the river, where it is expected, with the system of reservoirs, to retain the sewage till the commencement of ebb, that the strong sweep of the tide, concentrated by the port training walls, will be effectual in carrying the sewage out into the deep waters of the Irish Channel. A similar system was tried unsuccessfully in London, owing to the outfall being too far from the ocean. In the case of Dublin, it will probably be successful, though I would prefer seeing the outfall at the point of Howth Head.

Next in order of merit, I would place a suitably-selected and well managed sewage farm, of which there are many examples in England. This system has stood the test of centuries, and with unprejudiced engineers, would always be adopted in preference to any chemical process. Sewage farms.

The Croydon farm, near London, I took, as a good example of sewage disposal by broad irrigation on unprepared Croydon farm. and undrained land. Though some of the land is well suited for the purpose, being light and friable, with a gravelly sub-soil, much of it is of clayey nature and not by any means what one would desire—nevertheless, the farm is worked most successfully, and creates no nuisance to the adjoining suburban towns. Though I frequently crossed the farm both in summer and winter, I only once detected an unpleasant smell, and that was in a cold frosty day in November, when apparently, some grass meadows were receiving more irrigation than they could absorb. It is obvious that in cold countries sewage farms work under a great disadvantage in winter time, when the ground becomes frozen, and the growth of plants practically ceases. It is at such times that a sand filtration area proves a valuable aid. Broad Irrigation.

To dispose of the sewage of a large city on the broad irrigation principle, would require such an enormous area of land, that in most instances its future adoption is debarred in the old country. For instance, to treat the present North London outfall would require an area of about 8,000 acres.

Precipitation
and irrigation.

In order to reduce the area of land necessary previous precipitation is often resorted to with success. There are many precipitating agents and processes, all of which may be styled successful when the effluent is afterwards filtered through land or specially prepared filters. It is, however, generally allowed that where possible it is better to apply the crude sewage to the land, as the disposal of the sludge is always a difficulty, and never repays the cost of the chemicals used in its precipitation, or the expense of pressing it: besides the precipitating agents employed are generally antagonistic to the "friendly microbe," whose aid must be relied on to finally purify the effluent.

Intermittent
filtration and
irrigation.

From what I learn in the course of my investigations I am convinced that intermittent filtration on specially prepared areas will be largely resorted to in the future. I find that the highest authorities on the subject are constantly experimenting in this direction with specially prepared filters and with most satisfactory results. It is only at the present time that the action of a sewage filter is beginning to be understood. It is no longer looked upon simply as a strainer, which in time would become choked by foal sediment, but rather as a nursery in which to rear "friendly microbes." The publication of the results of the valuable experiments carried out by the State Board of Massachusetts, has done more to remove the old erroneous opinion than any works previously published on the subject. It appears now that the most perfect sewage system is that which to the greatest degree, and in the simplest manner, assists nature in her constant work of purifying the world.

On a well constructed and managed sewage farm, the greater part of the solids contained in sewage is utilised by nature for the growth of plants, while what escapes in solution to the lower strata is there devoured by the "friendly microbe," and split up into useful components.

In order to cultivate this "friendly microbe," it is only necessary to have a porous bed, and to give it short periods of rest sufficient to allow it to become aerated. It seems to thrive better in sand than in clay, in coarse sand than in fine, and in gravel than in sand.

I am convinced that a mistake is being made in many sewage farms by keeping portions of them as grass meadows. The grass sward—naturally impervious to air—is rendered more so by the tramping of cattle, I have noticed in several instances that the only objectionable portions of a sewage farm were these water meadows, as they are termed.

Precipitation
and filtration.
International
system.

Of precipitating processes combined with filtration perhaps the most largely advertised, and therefore best known, is the International. In this system the sewage is first precipitated by aid of a natural substance which is termed "Ferozone," containing the well known agents, oxide of iron, alumina, and magnesia. The effluent is there passed through a well designed filter, consisting of layers of sand, and a spongy form of magnetic oxide of iron, called polarite, for which special virtues are claimed. There is no doubt that the process is a good one, and does its work well, except in cases where it is attempted to work with too small an area of filter bed; it, however, appears to come rather expensive—ferozone costing in London about £2 per ton, and polarite £4. I am informed that it requires about 10 cwt. of ferozone to precipitate 1,000,000 gallons of sewage, or £1 worth per million, so that if this agent were employed at North London to deal with a sewage flow of 120 millions, the cost would amount to some £11,000 per annum, or fully three times what the present chemicals cost. With regard to the polarite used in the filters; it seems hardly worth while paying £4 per ton for a substance, which after all only forms a small portion of the filter, the remainder being the old fashioned material sand—when practically as good results can be obtained by the use of the small waste coke from a gas works.

Experimental
coke filter.

While in London I saw an experimental filter of less than 1 acre, consisting of 3 feet 6 inches of waste small coke, covered by 6 inches of sharp gravel, through which daily 1,000,000 gallons of the North London sewage were being passed after precipitation. This filter had only been in use sixteen days, and was being worked with varying periods of rest. The effluent appeared bright and sparkling, and I was informed, proved on analysis to be as pure as those given by more expensive processes.

It is quite apparent therefore, so long as the filtering material is porous and open, and is given the opportunity to aerate at proper intervals, that the "friendly microbe," or "nature's scavenger," may be relied upon to do its work effectually.

Failures will generally be found to have arisen from the use of too close a material in the filters—or sewage farm, as the case may be, or from the areas being too small and consequently overworked.

Precipitation
without
filtration.

Precipitation without subsequent filtration is resorted to under various systems. The effluent being discharged into a river, or if that is impossible, utilised for irrigation. In the latter case it really amounts to filtration, while in the former reliance is placed on the volume and purity of the river to oxidize what at the best, is always a putrifying effluent. The peculiarity of the system introduced by Messrs. Adeney and Parry—to be afterwards described—is that they charge the effluent with oxygen in order to encourage the growth of the friendly microbe, and insure it doing its work effectually before the effluent has time to putrify.

London sewage
system.

The North London sewage outfall works being of very modern construction, and probably by far the largest in the world, were carefully examined by me in November, previous to which I had a long interview with Mr. Alexander Binnie, M. Inst. C.E., Engineer to the London County Council, who kindly supplied me with plans of the works and much valuable information, and gave instructions that I should be shown everything I wished to see. The following description of the process may be found useful:—

The sewage arrives at the works in three sewers each 9 feet in diameter, the summer flow being about 110,000,000 gallons per day. It passes through coarse grids, removing about 13 tons of floating refuse per day, which is burnt in a furnace along side. It then receives a charge of quick-lime slacked in the surface water from the sludge settling tanks—30 tons being the daily consumption of lime, which is added in varying quantities, according to the hour of the day. After flowing about a quarter of a mile, in a closed sewer, it receives a charge of solution of proto-sulphate of iron, and then after a further flow of 700 feet it reaches a long valve chamber from which it is allowed to flow into a series of precipitating channels, thirteen in number, each being about 1,000 feet long, 30 feet wide, and 20 feet deep, with arched top and bottom. The total capacity being about 20,000,000 gallons, or one-sixth the daily average flow—and allowing for one channel always being empty for cleaning, it would appear that the sewage gets about four hours for precipitation.

After flowing slowly through the precipitating channel, the sewage escapes over a weir at the far end, and passing through the sewage storage reservoir—used in former years to hold back the crude sewage till time of ebb—it escapes into the Thames at the mouth of Barking Creek, nearly opposite Woolwich Arsenal. It is not found necessary to hold back the effluent, but it can be done if desired. During very hot weather, when there is little fresh water in the Thames, a small quantity of manganate of soda and sulphuric acid is added to the effluent as a deodorizer. This is, however, not often necessary. The maximum quantity used in any week during last summer—which was the hottest and driest ever known in England—amounted to manganate of soda, 6 tons. sulphuric acid, 4 tons.

The precipitating channels are emptied in rotation every fifty hours. After closing the inlet valve the water is drawn off from the surface through a series of beautifully-constructed hydraulic valves, which follow down the water as the surface sinks. The liquid sludge which remains at the bottom—varying in thickness from 4 feet at the inlet, to 1 foot at the outlet end—is then drawn and swept off to a pump-well, through a drain along the bottom. The chamber is then scraped and roughly washed out by a gang of men employed constantly at the work. I was all through one of these channels immediately after being cleared, and did not find it unpleasant in any way, except that it was rather warm. I learned that the workmen do not find it unhealthy; one of them informed me he had been sixteen years at this or similar work, and was hardly ever ill.

The sludge, before reaching the pump-well, is submitted to a further screening, to remove stones, &c., which might destroy the pumps. It is impossible, however, to remove the sand, and, in consequence, the pumps, plungers, and centrifugal pump-shells, are very soon destroyed.

From the well it is pumped into sludge settling-tanks, where it remains till the steam-hoppers arrive to carry it to sea. The surface-water which rises off the sludge, being too foul to discharge into the river, is pumped back to the liming station and used for slacking the lime. From the sludge-tanks the sludge is pumped to the extremity of a pier, and into hopper-steamers, which convey it to the "Deeps" at the mouth of the Thames, some 12 miles below the Nore.

This mode of getting rid of the sludge is the only way in which such a vast quantity could be dealt with. The cost of pressing it, I was informed, would have amounted to 4s. 6d. per ton.

The following particulars, which I extracted from the books at the works, may prove instructive:—

Week ending 28 October, 1893.

Sewage treated, 833,000,000 gallons.
Lime used, 273 tons; sulphate of iron, 57 tons. 16 cwt.
Refuse strained out and burnt, 90 tons.
Sludge sent to sea, 31,000 tons.

The

The effluent I found to be very fair, though a little tinged with yellow, and smelling slightly of paraffine. It was in appearance clearer than the Thames at the best of times when passing London Bridge.

One million gallons of the effluent were being passed daily through an experimental filter of less than one acre in area, with very good results. This filter has already been described.

The North London system must, I think, be looked upon as a success, and if the Thames were not already so foul there would be no further trouble with the effluent or need for deodorizers. It would, however, be a vast improvement if there was added to the scheme about 100 acres of coke filter-beds, similar to the one already in use. Appended is a lithographic plan showing the whole works.

It remains for me to now describe the "Oxygen Sewage Purification System," as introduced by Messrs. Adeney and Parry, of Dublin.

Mr. Adeney, I may mention, is a scientific chemist and Curator of the Royal University of Ireland, while Mr. Parry is a well-known sanitary engineer who has carried out many small sewage works, and is looked upon as one of the best authorities in Ireland on domestic sanitation.

These two gentlemen, who have been experimenting for some years, have conjointly brought out this apparently simple and efficient method of treating sewage which is now in use at several places in Ireland. I had several interviews with Mr. Parry, and accompanied him over the works at the Criminal Lunatic Asylum in Dundrum, near Dublin. The compactness of the works, the freedom from all smell, and the slight attention required, at once struck me as points in favour of the adoption of this system for isolated cases, such as public institutions, small villages, private houses, and where land is not available for sewage farms or filters.

The works at Dundrum Asylum, treating the sewage of a population of 250, are contained in a shed measuring 25 feet by 20. In it there are three similar tanks, very much deeper than the ordinary sewage tank, being 7 feet square and 16 feet deep, with conical bottoms and pump-wells.

The sewage as it arrives falls on a small overshot water-wheel, which actuates a number of tappet valves, and regulates the supply of chemicals according to the quantity of sewage.

The sewage passes without any addition of chemicals down a pipe to the bottom of the first tank, and is there delivered evenly over the bottom, and as it rises through the 16 feet depth is naturally strained by having its fine particles caught in the gelatinous matter and thus partially purified.

It is important that the sewage should rise evenly through the whole tank without forming currents, in future, therefore, the tanks will be constructed of a circular form.

The effluent from the surface of the first tank, after passing through a mixing race where it receives a dose of from 3 to 4 grains to the gallon of manganate of soda, and then a small dose of sulphate of alumina, passes to the bottom of the second tank, and after rising through its depth flows in a comparatively clear stream to the bottom of the third tank, at the surface of which it receives a final charge of 2 or 3 grains to the gallon of nitrate of soda, and is discharged over a white weir into a small brook, which flows on its course to the river through a gentleman's private domain. This brook though originally of a smaller volume than the sewage effluent it receives is apparently unpolluted.

The minimum sewage flow is about 6,000 gallons per day, but during wet weather it probably rises to 20,000, owing to the drainage from about 1½ acres of roofs and concrete yards passing into the sewers.

It will be seen from the foregoing, that the sewage is subjected to the following processes, viz. :—(1) Mechanical subsidence; (2) chemical precipitation; (3) oxidation. The oxidation brought about by the admixture of nitrate of soda with the already clarified effluent is relied upon to promote the growth of the friendly microbe, and thus prevent the small brook becoming foul, and it certainly appears to answer the purpose intended.

The sludge is drawn from the bottom of the tanks by means of an exhaustor, consisting of a reservoir and air-pump—by far the largest deposit is found in the first tank—while very little is found in the third. It is not necessary to stop working or to run off the tanks when this is being done. The sludge is then strained through canvas bags, and either buried as manure in the Asylum gardens, or dried and kept for use as required.

The drying process is very simple, and by an ingenious method goes on without creating any objectionable smell. The pressed sludge is spread on the floor and mixed with a little of the oxyhydrate of manganese which is deposited in and recovered from the second tank, and by simply turning the whole occasionally to expose fresh surfaces to the air the mass dries to a powder without creating any nuisance—in this form, it is very valuable as a manure.

I was unable to arrive at the cost of the chemicals consumed, as experiments were still being carried on so as to determine the most economical mode of working. I was informed that all the manganese can be recovered from the second tank and reconverted at about half its original cost, and that the nitrate of soda is the most expensive item.

I was also informed that the total cost of the works was about £500, and that the working expenses, including attendance, amounted to 3s. 6d. per day. The operations are almost automatic throughout, requiring only about half the time of an unskilled labourer, who is otherwise employed about the asylum, all motive power—except for working the exhaust pump—is supplied by the slight fall of the sewage itself, and the arrangements for admitting the proper quantities of chemicals and for exhausting the sludge are most simple and efficient.

Trusting that the above information which was collected with some difficulty, may prove of value to the Department.

I have, &c.,

EDWD. B. PRICE,
M. Inst. C.E.

B.

[To Evidence of O. N. Bell, Esq.]

NOTES RESPECTING SEPARATION OF RAIN FROM SEWERS, AND THE EFFECTS OF DOING SO.

THE scheme being taken as a mean between the extremes of present requirements and supposed future extension, viz., 20,000 people at 40 gallons per 24 hours one-half flowing in 8 hours gives 833 gallons per minute. The rain admitted, as proposed, is 1 inch on 200 square feet of roof for each person, giving 1,503 gallons per minute.

The 833 gallons of sewage is equal to 1.33 inches of rain in 24 hours over the entire area of the farm, and the 1 inch of rain is equal to 2.33 inches over the same area. Together they equal 3.66 inches of rainfall, which is in addition to the natural rainfall on the farm itself; so that if there happens a 2½-inch fall of rain, which is not unusual, the farm has to sustain 6¼ inches of rainfall in place of 3¾ inches if the rain were kept out of the sewers; and this 3¾ inches is quite enough for the farm to deal with in wet weather.

In a rain-storm of 2½ inches every gallon of sewage will be drenched with nearly 5 gallons of rain, and this is just what makes farmers object to receiving sewage on their land, as they get it drenched at a time when it has all it can do to absorb the sewage only.

The allowance of 200 square feet of roof-area to each person equals in a family of five to 1,000 square feet, which is about the roof-space of a house 33 feet by 30 feet. This allowance is, in fact, intended to include the whole roof-area of the town, which is more than half the total area of closely-built towns, counting in streets, yards, and open spaces. It follows that were Parramatta closely built over more than half the area of the town will have the total rainfall admitted to the sewers, for there are no means of excluding it, and if 1 inch is admitted all will get in.

The sewers are built to carry 1 inch only of this rain, but 2½, and even 4 inches of rain, are not unusual; the sewers will in such a case be gorged with rain, and must be relieved by storm overflows. At the pumps also the surplus will be made to overflow, so that only the intended 1 inch on roof-area will come to the pumps. But the sewage will be drenched with useless water, and to that extent injured for purposes of the farm.

By admitting this amount of rain, the sewers have to be made big enough to carry 2,336 gallons per minute; whereas, if the rain were excluded, 833 gallons per minute would suffice.

It is often urged that the rain is necessary to flush the sewers and keep them sweet. This argument is of no value, as the sewers, if ever foul, will be so in dry weather, and means must then be taken to flush them with the water supply. If these means are effectual in dry weather, they will be so at all times, therefore the rain is unnecessary, as it does not act when most wanted.

In many cases where a separate system is adopted it is necessary to build storm-water sewers also; this is not required at Parramatta, as it is excellently situated for draining off rain-water by the side-channels of the streets to the river, and a storm-water channel is already provided for the low parts.

There

There would be some better reason for admitting the rain-water off the streets, as this is very filthy; but the sand, mud, and road-grit is very injurious and troublesome if admitted to the sewers, and difficult to exclude if the street-water is admitted. There is no good reason for admitting rain-water off the roofs, which is quite clean.

The general practice in England of admitting some portion of rain to the sewers is due to the unwillingness of engineers to disturb and upset old-established house arrangements of rain-water down-pipes and other connections of dwellings which of old have been used to carry rain and sewage together. There has been a very natural reluctance to making the people incur the expense of entirely changing the system of their house-pipes, so as to separate the sewage from the rain, the cost of which to the inhabitants came to enormous sums in large towns. The engineers therefore let these fixtures alone, with the consequence that the sewers had to receive a certain proportion of rain along with the sewage.

A separate system aims at conveying away only such water as is fouled by use—that is, all slops, bath-water, water from yards and stables.

By reducing the size of the sewers to suit them for the smaller quantity they have to carry by excluding the rain, it sometimes happens that the gradients have to be steepened, thus incurring greater expense in deeper trenches. I have looked over the gradients for the sewers for Parramatta, and I see no reason to steepen the gradients of any of the sewers which have their sizes reduced, as these gradients have been in use in Christchurch and elsewhere for many years with no bad results.

The Hon. W. F. Taylor, M.D., M.L.C., at a meeting of the Royal Society, 1892, mentioned the system of sewerage introduced at Memphis on the Mississippi, U.S.A., as the best illustration of the separate system, and differing from ordinary usage on the following particulars: Storm and surface water rigorously excluded from the sewers; pipes to be so small as to be never less than half-full of sewage; automatic flushing tanks of 120 to 150 gallons at top end of each line of pipes. Has been in operation for four years with perfect satisfaction. Memphis is a town of 50,000 people; the drainage is for foul water and sewage only; drains are 6 feet deep; average house-pipes are 4 inches diameter, and sewers are 8, 10, 12, and 15 inches diameter. By adopting the separate system, and excluding the rain, a saving has been effected of £280,000 in the drainage of Memphis.

At Christchurch, N.Z., no rain is admitted, but a good deal of subsoil water is purposely admitted with the object of drying the ground, also the waste from many artesian wells driving hydraulic rams is admitted on payment of a small early sum as a contribution to the cost of pumping.

13 February, 1894.

C. NAPIER BELL,
M. Inst. C.E.

C.

THE BOROUGH OF GRANVILLE AND THE PROPOSED SEWAGE-FARM.

Sir, Public Works Department, Sydney, 12 February, 1894.
I am directed by Mr. Secretary Lyne to forward, for the information of the Committee, copies of correspondence which has taken place between the Borough Council of Granville and this Department, on the subject of the proposed sewage-farm in connection with the scheme of sewerage for Parramatta.

The Secretary, Parliamentary Standing Committee on Public Works.

I have, &c.,
J. BARLING,
Under Secretary.

Re Sewage-farm for Parramatta.

Sir, Borough of Granville Council Chambers, 9 February, 1894.
His Worship the Mayor of Granville has noticed that the question of establishing the above has again been referred to the Public Works Committee for consideration. I am directed to inform you that the Borough of Granville has always objected to the establishment of this farm, and that evidence to such effect was furnished by the Mayor during the time of the first consideration. The prospective rights of the Borough of Granville were not, however, made clear on that occasion, and it is hoped that should a majority of that Committee decide in favour of the scheme, that the right of this Borough to the use of the farm, whenever such use may be required, may be fully and firmly stated and established.

The Under Secretary, Public Works Department.

Yours, &c.,
JOHN SCARBOROUGH,
Council Clerk.

Sir, Department of Public Works, Sydney, 12 February, 1894.
I am directed to acknowledge the receipt of your letter of the 9th instant, in which you ask that, should the Public Works Committee decide in favour of the proposed sewerage scheme for Parramatta, the right of the Borough of Granville to the use of the sewage-farm, whenever such use may be required, may be established, and, in reply, am to inform you that, in the event of the scheme being passed by the Committee, and approved by Parliament, provision will be sought in the Construction Bill to enable your Council to take advantage of the sewage-farm if existing legislation is found insufficient for the purpose; but I am to point out that sub-section 1 of section 136 of the Metropolitan Water and Sewerage Act of 1880 would seem to provide for cases such as this, and Granville being in the county of Cumberland, comes under the provisions of this Act—see section 124. The farm will be quite capable of serving the requirements of both boroughs, and will thus lessen the cost to each.

The Council Clerk, Granville.

I have, &c.,
J. BARLING,
Under Secretary.

D.

[To Evidence of G. Chamier, Esq.]

AUTHORITIES IN FAVOUR OF SEWAGE IRRIGATION.

Sir, 60 Elizabeth-street, Sydney, 22 February, 1894.
In my evidence before the Parliamentary Standing Committee on Public Works, with reference to the proposed sewage works for Parramatta, I was unable, from memory, to answer certain questions involving names and figures. I beg, therefore, to furnish herewith, some of these particulars, which I have since obtained from reliable sources.

1. I was asked for the names of leading engineers who favoured the system of broad irrigation for the disposal of sewage. The principal writers on sanitary engineering, such as Baldwin Latham, Bailey Denton, Santo Crimp, and others, all strongly support sewage irrigation in preference to any other system. The late Sir Joseph Bazalgette and the late Mr. W. Clark preferred sewage irrigation wherever it could conveniently be adopted. Among the well-known sanitary engineers of the present day there are Dr. Dupré, Sir Robert Rawlinson, Messrs. W. J. Dibdin, C. H. Cooper, James Mansergh, Malcolm Paterson, and many others who have strongly declared in favour of sewage irrigation wherever suitable land was available for the purpose. The leading French, German, and American sanitary engineers are of the same opinion.

2. The Adelaide sewage farm.—I find that the quantity of land secured by the Government of South Australia for this purpose is 480 acres, of which only a portion has yet been utilised. The total area which admits of broad irrigation is 404 acres. The extent of the present filter-bed is 14 acres.

3. Cost of Adelaide sewage scheme.—The total outlay incurred to 30th June, 1891, was £446,966 14s. 6d., involving a yearly charge for working expenses of £16,418, for a population estimated at 60,000.

The Secretary to the Parliamentary Standing Committee on Public Works.

I have, &c.,
GEORGE CHAMIER,
M. Inst. C.E.

E.

[To Evidence of J. M. Smail, Esq.]

Metropolitan Board of Water Supply and Sewerage, Sydney, 24 February, 1894.
MEMORANDA of cost of wages, &c., at screening chambers, Cook's River, and on sewage farm, Sydney main drainage:—

	Cost per annum.		
	£	s.	d.
1. Inlet house, screening chambers	679	1	7
2. Working expenses of sewage farm	968	8	2
3. Revenue from farm.....	333	9	11
4. Net cost of working farm	634	18	3

J. M. SMAIL,
Engineer.

The Chairman, Public Works Committee.

F.

[To Evidence of J. W. Grimshaw, Esq.]

Department of Public Works, Harbours and Rivers Branch, Sydney, 27 February, 1894.

MINUTE PAPER.—Subject—Parramatta Sewage Farm.

Expenditure on fascine and earth banks.

THE following is the information asked for by the Parliamentary Standing Committee on Public Works:—

	£	s.	d.
<i>Work completed—</i>			
Fascine bank round eastern end of proposed farm; length, 1,101 lineal feet; cost	643	7	2
Earth banks on northern and southern sides; length, 4,521 lineal feet; cost	295	8	10
Clearing scrub, 25 acres	130	15	6
Sluice-box	19	8	6
Total expenditure to date.....	1,089	0	0
<i>Estimate of work still to be done—</i>			
Fascine bank to close gap; length, 30 feet; cost	80	0	0
Backing up fascine bank; length, 1,181 lineal feet; cost	66	0	0
Putting sluice-box in place, &c.....	4	0	0
Total	£150	0	0

J. W. GRIMSHAW,
M. Inst. C. E.

The Secretary, Parliamentary Standing Committee on Public Works.

G.

[To Evidence of G. H. Stayton, Esq.]

PARRAMATTA SEWAGE.

118, Pitt-street, Sydney, 28 February, 1894.

STATEMENT showing the comparative cost of the schemes under consideration.

<i>Proposed scheme—</i>	
Departmental estimate of present scheme for existing population	£75,926
Add estimated cost of filling up filtration area of 42 acres (properly forming part of the works), and preparing land	12,100
	£88,026
<i>International system—</i>	
Departmental estimate of cost of works for present population above pumping station (<i>vide</i> Question 72, 1892, Proceedings)	£53,416
Add estimated cost of pumping station and purification works complete, as recommended by me, capable of treating the sewage of a population of 22,000 persons	20,000
	£73,416

Showing a saving of £14,610 upon the first section of the entire scheme.

Ultimate Cost of Scheme.

<i>Departmental scheme—</i>	
Departmental estimate for entire scheme for 48,000 persons (<i>vide</i> Questions 68 and 75).....	£131,054
Add estimated cost of filling up filtration area of 42 acres, and providing precipitation tanks and works complete upon the farm to ensure efficiency	24,000
	£155,054
<i>International system—</i>	
Departmental estimate of cost of works above pumping station (<i>vide</i> Questions 72 and 75)	£88,269
Add estimated cost of pumping station and purification works complete, for a population of 48,000 persons	40,000
	£128,269

Showing a saving of £26,785 upon the complete scheme.

Annual Cost.

It is obvious that the annual charge of 4 per cent. upon the capital outlay saved by adopting the International system would effect a reduction in the yearly cost to the ratepayers. There would also be a slight saving in the cost of pumping. I estimate the working expenses of the International system for the present requirements of Parramatta at between £500 and £600 per annum.

The comparative annual cost of the first section of the scheme may be stated thus:—

<i>Departmental scheme, with additions pointed out—</i>	
4 per cent. interest on £88,026	£3,521
Working expenses (<i>vide</i> Question 350)	1,292
	£4,813
<i>International scheme—</i>	
4 per cent. interest on £73,416	£2,936
Working expenses for pumping, purifications, sewer flushers, and contingencies	1,308
	£4,244
Annual saving	£569

GEO. H. STAYTON,
M. Inst. C. E.

G1.

AGENCY OF THE INTERNATIONAL PURIFICATION COMPANY.

Sir,

Sydney, 6 March, 1894.

I was not a little astonished to learn from the *Daily Telegraph* of Friday last, that at the meeting of the Public Works Committee on the previous afternoon, a statement was made to the effect that I was the accredited representative of the International Purification Company in New South Wales.

It is not true that I am acting as the Company's agent. If the Company have written, as asserted, there must be some misapprehension on their part. I am not aware that they have done so, and cannot be held responsible for what may have been received.

It is perfectly true that about a year ago the Company asked me whether I could take up their agency, or whether I could recommend anyone. I replied that I could not see my way to become their agent; but that as I so strongly believed in the efficacy of their process I should be happy to allow them to refer anyone to me, or I could supply anyone with their papers on application.

I have only had one inquiry, have done nothing in the matter, and have not received one farthing from the Company. I am venturing to uphold the system for Parramatta, because it is specially suitable, efficient, and cheap. I should be content to stake my professional reputation upon its success if properly applied. I take this stand merely upon its merits, and because I should regret to see a waste of public money upon a scheme which *must* eventually entail a further outlay.

I am, &c.,

GEO. H. STAYTON,

M. Inst. C.E.

The Chairman, Parliamentary Standing Committee on Public Works.

H.

[To Evidence of R. R. P. Hickson, Esq.]

TREATING SEWAGE BY NATURE'S SCAVENGER.

Minute Paper.

Department of Public Works, Roads and Bridges and Sewerage Branch, Sydney, 17 February, 1894.

THE result of a very careful study of the various means adopted and suggested for dealing with the disposal of sewage, has convinced me that the only effective mode of treating sewage (other than sending it out to sea) is by the aid of a bacillus, commonly known as the "friendly microbe," or "Nature's scavenger."

It has been proved beyond all question that this microbe is produced and cultivated by the judicious application of sewage on to a properly formed filter-bed, and that with the natural elements, air and heat, they can be produced to an unlimited extent.

These microbes are brought into existence for the express purpose of destroying all matter hurtful to life and health.

Declaux says:—"Whenever and wherever there is a deposit of organic matter, whether it be the case of a herb or an oak, of a worm or a whale, the work is exclusively done by small organisms. They are the important and almost the only agents of universal hygiene: they clear away more quickly than the dogs of Constantinople, or the wild beasts of the desert, the remains of all that has had life. They protect the living against the dead; they do more—if there are still living beings—if, since the hundred of centuries the world has been inhabited, life continues, it is to them we owe it. But for these minute creatures mankind would long ago have perished from the face of the earth. Unquestionably there are microbes which possess the power of propagating a direful class of diseases. But these creatures are comparatively rare, and the microbes which are beneficial serve to destroy them. The non-pathogenic or harmless bacteria are not only antagonistic to those that are hurtful, but are specially valuable as 'Nature's scavengers.'"

Dr. Koch says:—"Another point of the greatest interest attaches to the system of bacteriological purification, inasmuch as it is now proved beyond doubt that the intervention of a colony of non-pathogenic liquifying organisms is a perfect guarantee against the passage of the bacillus of cholera, and almost certainly of the bacillus of typhoid fever as well."

Mr. A. C. Houston, M.B. D.Sc., says:—"These organisms have been separately identified and counted, and there is no longer any reason to doubt that they are in reality 'Nature's scavengers.' They are already well known to bacteriologists, being classed as non-pathogenic or harmless bacteria, but it was little suspected that they could carry on the vast and beneficent work of which they are capable when cultivated under proper conditions. *What chemistry and elaborate mechanism have failed to do, these organisms accomplish.* By their action they peptonise the complex organic substances existing, and directly and indirectly affect its purification."

The following pithy article on bacteriological purification is worthy of notation:—"It seems that there are living organisms which could not exist without filth: man has only to call them into vigour at the right time, in order to make them do his bidding, and add to the enjoyment of life. Here we are, worrying and fretting our souls about costly problems for the disposal of filth, while there are at hand natural scavengers in countless millions, awaiting our bidding, and prepared to solve our problems at comparatively trifling cost."

With regard to chemicals, there can be no reasonable doubt that up to the present they have not been successful.

A writer in the paper *Industries and Iron* says:—"The efforts of chemists to force the hand of nature, as it were, and to discover some solution for an apparently insoluble problem, have hitherto been in evidence only as a praiseworthy exertion of the intelligence without any corresponding results."

A writer in the *Engineer* says:—"The various chemical processes are now practically admitted to be failures, as even if by their means a good effluent is produced, there is still the resultant sludge to be dealt with, and here the difficulties invariably begin."

As I have in a previous report pointed out, the objections to a chemical process are based on scientific grounds. The action of chemicals is only partial. They act as clarifiers rather than purifiers of the sewage, leaving a doubtful effluent and an unmarketable sludge to be finally dealt with.

As a further proof of the action of this "friendly microbe," it is only necessary to refer to what is actually taking place on the Botany sewage farm, and to the analysis of the effluent and the soil therefrom.

Exhibit "A" is taken from a well in the centre of one of the cultivation paddocks. The water in this well remains at a depth of about 3 feet below the surface, and is described by Mr. Hamlet, Government Analyst, as follows:—"This water may be allowed to flow into creeks and rivers without creating a nuisance, its composition being equal to some waters used for drinking purposes."

Exhibits "B" and "C" are from Botany, "B" being a sample of virgin soil, and "C" the soil on which sewage has been constantly run for the last five years.

Mr. Hamlet reports the organic matter in the first to be 4.85 per cent., and in the latter 4.97, practically the same. The question, therefore, naturally arises: If the effluent and soil are uncontaminated, what has become of that portion of the sewage matter which, most unquestionably, does contain germs of diseases and other particles injurious to health? My reply is that the "friendly microbe," "Nature's scavenger," has been at work, and completely eaten up and destroyed all hurtful matter, and left the ground and effluent clean and pure.

In connection with this wonderful natural process, Dr. Koch says:—"This is what nature has been doing since the dawn of life on the planet—that is to say, if some such process were not going on, the earth would have been uninhabitable."

It is only necessary to add that, owing to the absence of frost, the climate of this country is exceptionally favourable to the growth of these natural scavengers.

ROBERT HICKSON.

The Chairman, Parliamentary Public Works Committee.

H1.

PARRAMATTA SEWERAGE SCHEME.—COST AND ESTIMATE OF MAINTENANCE.

Department of Public Works, Roads and Bridges and Sewerage Branch, Sydney, 2 March, 1894.

Original cost of works was as follows :—	£	s.	d.
Works above pumping-station	£54,756	0	0
Pumps, boiler, land, delivery-mains, &c.	22,170	0	0
	£75,926	0	0
Estimate of maintenance :—			
Interest and payment in sixty years at 4 per cent.	3,040	0	0
Coals, stores, and engine-house expenses	728	0	0
Expenses of working farm	500	0	0
	£4,268	0	0

The first cost of works and annual expenses may, I think, owing to the altered condition of affairs—1st, as regards the low rate at which contracts are now being let; and 2nd, as regards our experience of the Botany farm, when the farm will not only be taken off our hands, but a rent paid for the use thereof—be greatly reduced.

Our contracts now are being let from 15 to 30 per cent. below estimate. Applying the lesser rate to the estimate of works yet to be carried out above the pumping-station, the total cost would be reduced to about £69,000.

In the same way, by deducting the cost of working the sewage farm, as well as the reduced rate of interest on the reduced cost of work, the annual cost of the whole scheme would be reduced to about £3,488.

Assuming these figures to be correct, the rate to cover this annual cost would be reduced from 10·97 to 8·97 in the pound.

Taking credit for what the Council now pay for their pan system, the annual extra rate the Council would have to pay for this sewerage scheme would be 5½d. in the pound.

ROBT. HICKSON.

The Chairman, Public Works Committee.

I.

COST OF DREDGING AND LANDING SILT FOR SEWAGE FARM.

Public Works Department, Sydney, 27 February, 1894.

Sir,

With reference to the inquiry now being held by the Committee in regard to the proposed scheme of sewerage for Parramatta, I am directed by Mr. Secretary Lyne to ask you to be so good as to bring under the attention of the Committee the following matter in regard to the scheme.

It has been suggested that perhaps the Committee in taking into consideration the cost of the proposal would add that of dredging and landing silt for the purposes of the sewage farm. I am, therefore, to say that it is not the intention of the Minister to debit the cost of the sewerage scheme with any expenditure on this account. When the river is being dredged, the farm will be a most convenient site for landing the silt, and as the material has to be got rid of, it will, the Minister points out, be actually cheaper to dispose of it in this way than to send it to sea. The flats in the river above the railway bridge are nearly all good sand, very suitable for the purposes of the farm.

I am, therefore, to request that, in dealing with the question of cost, the Committee will leave out the expense of dredging and landing silt, as none of it will be debited to the cost of the scheme.

The cost of forming the fascine banks stands in a different category, and properly so, and will be charged to the scheme. I have, &c.,

J. BURLING,

Under Secretary.

The Secretary to the Parliamentary Standing Committee on Public Works.

J.

[To Evidence of A. B. Portus, Esq.]

LONG COVE RECLAMATION.

Department of Public Works, Harbours and Rivers Branch, Sydney, 1 March 1894.

<i>Eastern side.</i>		a.	r.	p.
Area of reclaimed land to high-water mark		33	3	13
Area between high-water mark and 3-foot contour line		9	2	30
Area of land resumed above 3-foot contour		1	3	0
		45	1	3
<i>Eastern side.</i>		a.	r.	p.
Area of all roads as shown on plan up to 3 foot contour		11	2	27
Available area		33	2	16
<i>Western side.</i>				
Area of reclaimed land to high-water mark		24	0	0
Area of 100-foot reservation		11	0	9
Area of land resumed		5	0	1
		40	0	10
Area reclaimed eastern side		33	3	13
Area reclaimed western side		24	0	0
Total area reclaimed		57	3	13
Area resumed eastern side		7	1	15
Area resumed western side		5	0	1
		12	1	16
Total available area		73	2	26

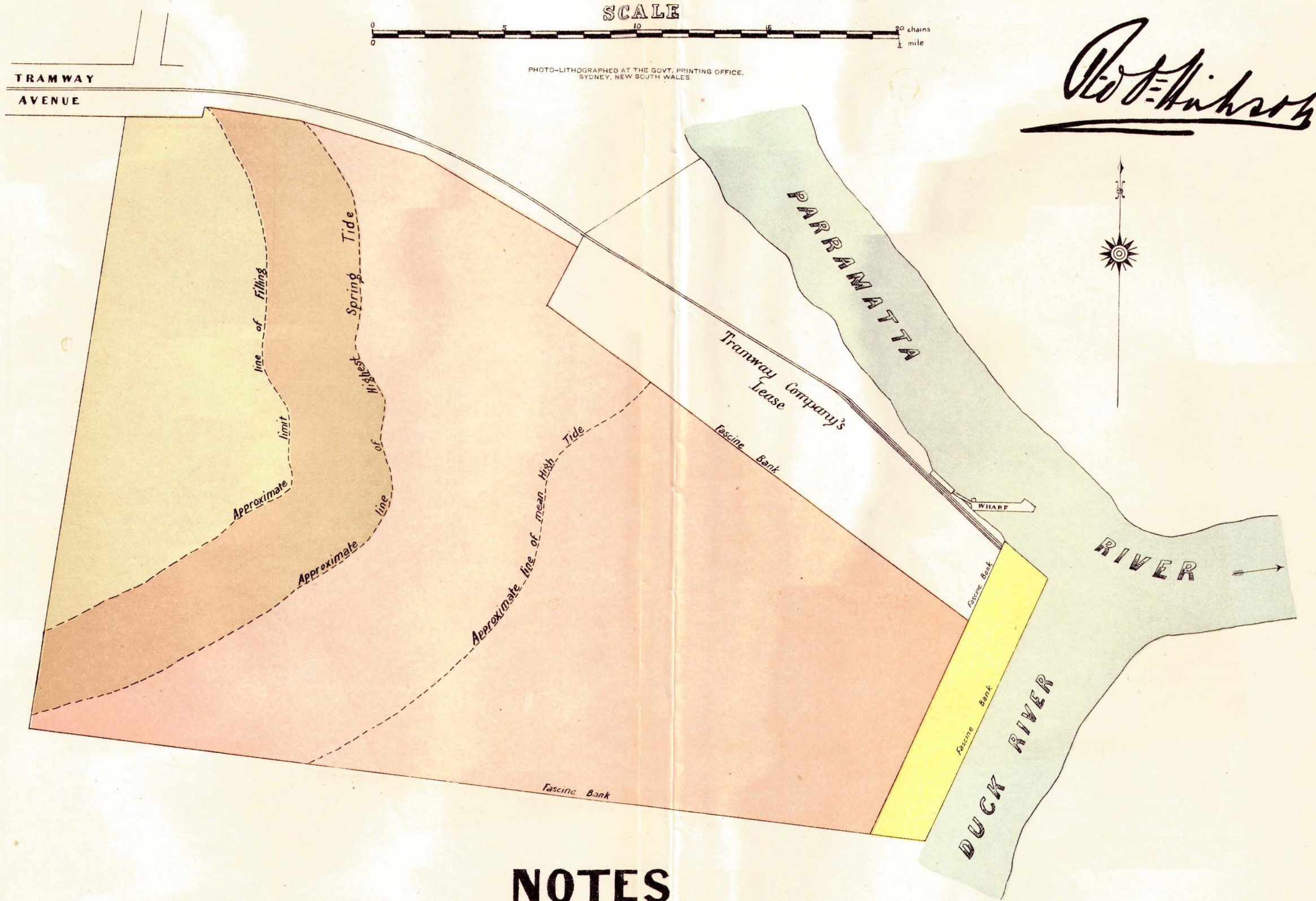
H.C., 1/3/94.

Sand pump dredge started working at Long Cove Reclamation on 12th December, 1890, but work has not been continuous.

During that time 669,020 tons sand and mud have been dumped alongside the dredge, the cost for pumping ashore being 2½d. per ton. A. B. PORTUS, 1/3/94.

[One plan.]

PARRAMATTA SEWAGE FARM



NOTES

Approximate Area of land included in Farm from banks of Duck River colored Yellow	— 2a 1r 0p
Area of land resumed	— 62.1.13½
— do — Area of Sewage Farm	— 64.2.13½
— do — Area of land under mean H.W.M included from banks of Duck River colored Yellow	— 2.1.0
— do — do — do — do — do — do — resumed	— 22.1.13½
— do — do — do — do — do — do — above mean H.W.M	— 40.0.0
(Sig 104.)	
Total	64.2.13½

Approximate Area of Land above Highest Spring Tide	— 21a.0r.0p
— do — do — under — do — do	— 43.2.13½
Total	64.2.13½
Approximate Area of Land to be filled 5 Feet deep with sand - colored Red and Yellow	43a. 2r. 13½p
— do — do — do — 2½ — do — on average - colored Brown	9.1.0
— do — do — which will not require Filling - colored Green	11.3.0
Total	64.2.13½

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

METROPOLITAN WATER AND SEWERAGE ACTS.

(REPORT OF COMPLETION OF DARLING POINT BRANCH INTERCEPTING SEWER.)

Ordered by the Legislative Assembly to be printed, 13 March, 1894.

Report by The Secretary for Public Works.

REPORT OF THE COMPLETION OF DARLING POINT BRANCH INTERCEPTING SEWER.

To the Honorable the Speaker of the Legislative Assembly of New South Wales.

Sir,

Pursuant to the provisions of the Metropolitan Water and Sewerage Acts of 1880-1889, I, the Minister for Public Works, do hereby report to the Legislative Assembly of New South Wales the completion of the Works for Darling Point Intercepting Sewer, in accordance with the said Acts.

WILLIAM JOHN LYNE,

Minister for Public Works.

Department of Public Works,
Sydney, 14th February, 1894.

1894.

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

JOHNSTONE'S BAY STORM-WATER SEWERS BILL.

(MESSAGE No. 36.)

Ordered by the Legislative Assembly to be printed, 25 April, 1894.

R. W. DUFF,
Governor.

Message No. 36.

In accordance with the provisions contained in the 54th section of the Constitution Act, the Governor recommends for the consideration of the Legislative Assembly the expediency of making provision to meet the requisite expenses in connection with a Bill to sanction the construction of certain storm-water sewers, discharging into Johnstone's Bay, Port Jackson.

*Government House,
Sydney, 24th April, 1894.*

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

PUBLIC WORKS ACT OF 1888.

(RESUMPTION OF LAND IN CONNECTION WITH THE DRAINAGE WORKS AT TUCKOMBIL CREEK.)

Ordered by the Legislative Assembly to be printed, 16 May, 1894.

NOTIFICATION OF RESUMPTION OF LAND UNDER THE "PUBLIC WORKS ACT OF 1888," 51 VICTORIA No. 37.

NEW SOUTH WALES, } Proclamation by His Excellency The
to wit. } Right Honourable Sir ROBERT WILLIAM
(L.S.) } DUFF, a Member of Her Majesty's Most
R. W. DUFF, } Honourable Privy Council, a Knight
Governor. } Grand Cross of the Most Distinguished
Governor and Commander-in-Chief of
the Colony of New South Wales and its
Dependencies.

WHEREAS I, Sir ROBERT WILLIAM DUFF, the Governor aforesaid, with the advice of the Executive Council, have directed that a certain public work, that is to say, Drainage Works at Tuckombil Creek, in the said Colony, the estimated cost of which does not exceed twenty thousand pounds, shall be carried out under the provisions of the "Public Works Act of 1888," as an authorised work by the Minister for Public Works as Constructing Authority; and that the lands described in the Schedule hereto which are in my opinion required for carrying out the said work, shall be acquired by taking the same under the "Lands for Public Purposes Acquisition Act," as adopted by the "Public Works Act of 1888": Now, therefore, I, the said Governor, with the advice aforesaid, in pursuance of the "Public Works Act of 1888," do declare by this notification, to be published in the Government Gazette, and in one or more newspapers published or circulated in the Police District wherein the said lands are situated, that the Crown Land comprised within the descriptions set forth in the Schedule hereto has been appropriated, and the private property within such descriptions has been resumed, for the public purpose aforesaid, to the intent that upon the publication of this notification in the Gazette, the said lands described in the said Schedule hereto shall forthwith be vested in the said Constructing Authority as a corporation sole on behalf of Her Majesty, for the purposes of the said "Public Works Act of 1888," for an estate in fee simple in possession, freed and discharged from all trusts, obligations, estates, interests, contracts, charges, rates, rights-of-way, or other encumbrances whatsoever; and to the further intent that the legal estate therein, together with all powers incident thereto or conferred by the said last-mentioned Act, shall be vested in such Constructing Authority as a Trustee; and I declare that the following is the Schedule of the lands hereinbefore referred to:—

SCHEDULE.

1. All that piece or parcel of land being part of portion 29 of 240 acres, situate in the parish of Riley, county of Richmond, and Colony of New South Wales, being conditionally purchased by William Trustum, containing by admeasurement 38 acres 3

roods and 10 perches: Commencing at the intersection of the common boundary line of portions 29 and 30, as fenced, with the north-eastern side of a road 1 chain wide, as fenced; and bounded thence on the north by part of that common boundary line, as fenced, bearing south 89 degrees 45 minutes east 19 chains 64½ links; thence on the north-east by a line bearing south 48 degrees 9 minutes east 51 chains 97 links to a point in the southern fenced boundary line of portion 29, distant 3 chains 77½ links westerly from its south-eastern corner peg; thence on the south by part of that southern fenced boundary line bearing south 89 degrees 32 minutes west 9 chains; thence on the south-west by a line bearing north 48 degrees 9 minutes west 35 chains 77 links; thence by a convex curve of 1,500 feet radius 18 chains 41⅞ links in length whose chord bears north 71 degrees 21 minutes west 17 chains 91¼ links; thence again on the south by a line bearing south 85 degrees 26 minutes west 3 chains 84⅞ links to a road; and thence again on the south-west by the fenced boundary lines of that road bearing north 3 degrees 59 minutes west 1 chain 68⅞ links and north 21 degrees 50 minutes west 4 chains 25⅞ links, to the point of commencement.

2. All that piece or parcel of land being part of portion 30 of 105 acres 2 roods and 18 perches, situate in the parish of Riley, county of Richmond, and Colony of New South Wales, being conditionally purchased by James Watson, containing by admeasurement 2 acres 2 roods and 26 perches: Commencing at the intersection of the common boundary line of portions 29 and 30, as fenced, with the north-eastern side of a road 1 chain wide, as fenced; and bounded thence on the south by part of that common boundary line, as fenced, bearing south 89 degrees 45 minutes east 19 chains 64½ links; thence on the north-east by a line bearing north 48 degrees 9 minutes west 2 chains 50⅞ links; thence on the north by a line bearing south 85 degrees 26 minutes west 16 chains 12½ links; thence on the east by a line bearing north 3 degrees 59 minutes west 75⅞ links; thence on the north-east by a line bearing north 68 degrees 12 minutes west 6 chains 82 links to the road; and on the south-west by that road being lines bearing south 55 degrees 50 minutes east 5 chains 54½ links and south 24 degrees 50 minutes east 74⅞ links, to the point of commencement.

3. All that piece or parcel of land being part of portion 163 of 80 acres, situate in the parish of Riley, county of Richmond, and Colony of New South Wales, being conditionally purchased by Frank Hertram, containing by admeasurement 1 acre 2 roods and 13 perches: Commencing at a point on the left bank of Evans' River, being high-water mark, and distant 8 links south from the south-eastern corner peg of portion 163; and bounded thence on the east by part of the eastern boundary line of that portion bearing north 1 chain 49⅞ links; thence on the north by a line bearing north

88 degrees 52 minutes west 8 chains $74\frac{4}{10}$ links; thence on the west by a line bearing south 1 degree 8 minutes west 48 links to high-water mark; and thence by the high-water mark of Evans' River downwards, to the point of commencement.

4. All that piece or parcel of land being part of portion 161 of 83 acres, situate in the parish of Riley, county of Richmond, and Colony of New South Wales, being conditionally purchased by J. Moss, containing by admeasurement 1 acre 3 roods and 2 perches: Commencing at a point on the right bank of the Evans' River, being high-water mark, and distant 35 links north from the north-eastern corner peg of portion 161; and bounded thence on the east by part of the eastern boundary line of that portion bearing south 2 chains $44\frac{4}{10}$ links; thence on the south by a line bearing north 88 degrees 52 minutes west 8 chains 42 links to high-water mark; and thence by high-water mark of Evans' River downwards, to the point of commencement.

5. All that piece or parcel of land being part of water reserve 4, notified 24th December, 1861, situate in the parish of Riley, county of Richmond, and Colony of New South Wales, containing by admeasurement 1 rood 80 perches: Commencing at a point on the left bank of the Evans' River, being high water mark, and distant 8 links south from the south-eastern corner peg of portion 163; and bounded thence on the west by part of the eastern boundary line of that portion bearing north 1 chain $49\frac{7}{10}$ links; thence on the north by a line bearing south 88 degrees 52 minutes east 3 chains $37\frac{1}{2}$ links; thence on the east by a line bearing south 1 degree 8 minutes west 90 links to high-water mark; and thence by the high-water mark of Evans' River upwards, to the point of commencement.

6. All that piece or parcel of land being part of portion 162 of 91 acres, situate in the parish of Riley, county of Richmond, and Colony of New South Wales, being unalienated, containing by admeasurement 2 roods 23 perches: Commencing at a point on the right bank of the Evans' River, being high-water mark,

and distant 56 links north from the north-western corner peg of portion 162; and bounded thence on the west by part of the west boundary line of that portion bearing south 2 chains $72\frac{2}{10}$ links; thence on the south by a line bearing south 88 degrees 52 minutes east 2 chains 21 links; thence on the east by a line bearing north 1 degree 8 minutes east 2 chains 78 links to high-water mark; and thence by high-water mark of Evans' River upwards, to the point of commencement.

7. All that piece or parcel of land being part of a boundary road 1 chain wide between portions 161 and 162, situate in the parish of Riley, county of Richmond, and Colony of New South Wales, containing by admeasurement 1 rood: Commencing at a point on the right bank of the Evans' River, being high-water mark, and distant 35 links north from the north-eastern corner peg of portion 161; and bounded thence on the west by part of the eastern boundary line of that portion bearing south 2 chains $44\frac{4}{10}$ links; thence on the south by a line bearing south 88 degrees 52 minutes east 1 chain; thence on the east by part of the western boundary line of portion 162 bearing north 2 chains $72\frac{2}{10}$ links to a point on high-water mark, distant 56 links north from the north-western corner peg of portion 162; and thence by the high-water mark of Evans' River upwards, to the point of commencement.

In witness whereof I have hereunto set my Hand, and caused the Great Seal of the Colony to be hereto affixed, at Government House, Sydney, this ninth day of May, in the year of our Lord one thousand eight hundred and ninety-four, and in the fifty-seventh year of Her Majesty's Reign.

By His Excellency's Command,

HENRY COPELAND.

GOD SAVE THE QUEEN!

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

TUCKUMBIL DRAIN.

(AGREEMENT ENTERED INTO BY LANDOWNERS AND OTHERS IN CONNECTION WITH A FLOOD
WATERS RELIEF DRAIN FROM TUCKUMBIL CREEK TO EVANS RIVER.)

Ordered by the Legislative Assembly to be printed, 31 May, 1894.

[Laid upon the Table in fulfilment of a promise made in the Legislative Assembly, 23 May, 1894.]

IN consideration of the benefits and advantages to be derived by me my heirs executors administrators and assigns by the construction of a Flood Waters Relief Drain from Tuckumbil Creek to Evans River in the Colony of New South Wales I hereby agree to pay half-yearly for the period of sixty years the sum of _____ into the hands of the Colonial Treasurer of the said Colony towards the cost of the construction of the said Flood Relief Drain the interest thereon and the resumption of all necessary lands therefor and the payment if established of all claims for compensation damage cost and expenses arising out of or incident to the construction of the said work the first of such payments to be made on the completion of the said works by the Honorable the Minister for Public Works of the said Colony hereinafter referred to as the said Minister should the said work be carried out And do hereby charge my interest in the lands described in the Schedule hereto of which I am* _____ with the payment of the said sums hereinbefore set out And do hereby remise release and quit claim all claims demands actions suits cause and causes of action or suit sum or sums of money compensation interest damage costs and expenses which I or those claiming under me now have or at any time hereafter may have or but for these presents might have had against Her Majesty the Queen her heirs and successors or the said Minister and his successors for or on account of the construction repair and maintenance of such drain the resumption of the necessary lands therefor and the works in connection therewith or for or on account of the subsidence reflux or overflow thereof or of any alleged stenches or foul water smells caused by the construction and user of such drain or for or on account of any other damage matter or thing caused by or arising out of the construction and user of such drain And I further agree to contribute towards the cost of the maintenance of the said drain in the proportion that my contributions hereinbefore set out bear to the cost of the construction of the said drain And I agree to submit my title to the Crown Solicitor and to execute and sign all deeds transfers and charges to be prepared by him for more effectually binding my said lands with the payments aforesaid and to lodge all necessary deeds Crown grants and certificates of title with the Registrar-General when called upon to do so for the purpose of having all proper registrations and notifications made thereon.

SCHEDULE OF LAND REFERRED TO.

ALL that piece or parcel of land situate at _____ in the Parish of _____ and County
of _____ in the Colony of New South Wales containing by admeasurement _____ acres
roods and _____ perches.

(Signature and Address.)

Witness—

* Fill in here owner in fee simple, registered proprietor, tenant, occupier, mortgagee, as the case may be.

1894.

• LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

PROPOSED RECLAMATION OF DARLING HARBOUR.

(RETURN RESPECTING.)

Ordered by the Legislative Assembly to be printed, 8 June, 1894.

RETURN (*in part*) to an *Order* made by the Honorable the Legislative Assembly of New South Wales, dated 12th October, 1893, That there be laid upon the Table of this House,—

“Copies of all papers, reports, minutes, and correspondence in connection with the proposed building of a sea-wall and filling in of Darling Harbour.”

(*Mr. Darnley.*)

SCHEDULE.

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[800 copies— Approximate Cost of Printing (labour and material), £28 18s. 10d.]

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No. 1.

The Manager for Public Wharfs to The Under Secretary for Finance and Trade.

Sir, Public Wharfs Office, 3 April, 1891.

I beg to bring under the notice of the Honorable the Colonial Treasurer, owing to more water-frontage likely to be required in Darling Harbour for ferry purposes, that there is a water-frontage belonging to the Government on the south side of Erskine-street, adjoining some Government frontage on the same side of said street. The frontage was, to the best of my knowledge, leased by the Lands Department to the City Council some ten or twelve years ago for market purposes, but was never used for that purpose. The property is now leased by the City Council to Mr. N. Joubert, proprietor of the Lane Cove ferry, and to Mr. M. Byrnes, proprietor of the Pymont ferry. Mr. Joubert, I believe, would give up his lease on favourable terms to the Government. I would suggest for the consideration of the Honorable the Treasurer that the City Council be communicated with, with a view to cancelling the lease of the property held by them, or to resume it if found necessary. The whole of the land from Erskine-street has about 300 feet frontage, and would be sufficient for all ferry requirements for many years to come.

I have, &c.,
JOHN JACKSON,
Manager.

The Mayor of Sydney to be communicated with.—W.M., 22/4/91. Done.

No. 2.

The Assistant Town Clerk to The Under Secretary for Finance and Trade.

Sir, Town Clerk's Office, Sydney, 24 April, 1891.

I have the honor to acknowledge the receipt of your letter of the 23rd instant, upon the matter hereunder mentioned, and to inform you that it will receive consideration as soon as possible.

I have, &c.,
JOHN R. PALMER,
Assistant Town Clerk.

Subject:—Re lease of water-frontage on south side of Erskine-street.

No. 3.

The Acting Under Secretary for Finance and Trade to The Acting Crown Solicitor.

Sir, The Treasury, New South Wales, Sydney, 22 May, 1891.

I have the honor, by direction of the Colonial Treasurer, to request that you will be good enough to advise—at the earliest possible moment—what water-frontages in Sydney Harbour (more especially in Darling Harbour) have been vested in the City Council by grant from the Crown.

I have, &c.,
F. KIRKPATRICK,
Acting Under Secretary for Finance and Trade.

No. 4.

The Acting Crown Solicitor to The Under Secretary for Finance and Trade.

Sir, Crown Solicitor's Office, Sydney, 15 June, 1891.

I have the honor to return your letter of 22nd ultimo, requesting to be advised as to what water-frontages in Sydney Harbour, more especially in Darling Harbour, have been vested in the City Council by grant from the Crown, and, in reply, to state that I had no materials in this office enabling me to furnish the information, but, having placed myself in communication with the Department of Lands, I have obtained particulars of all the property occupied by the Corporation, extending from Dawes Point up to the Railway Wharf in Darling Harbour. I enclose a list showing these properties. I also take advantage

advantage of the present occasion to enclose a list, compiled from the materials supplied by the Lands Department, of the whole of the wharfage properties, including that held by the Corporation extending between the same limits.

The former list is enclosed herein and marked "A;" the latter list is marked "B."

As the result of my search I have ascertained—

1. That the land No. 5, in list "A," is a large block of property with a considerable frontage to Kent-street, and a large frontage to the water. This property seems never to have been granted by the Crown, but was dedicated as a landing-place and approach for ferry passengers, apparently from Balmain, but it had never been so utilised, and in lieu thereof is now used, as I am informed, as a storage ground for wooden pavement blocks.
2. The next piece of property is that No. 8 on the list "A," and therein called sewerage reserve. I have not been able to ascertain whether this property is occupied by the Corporation or by the Water and Sewerage Board. It seems to me that it ought to be handed over to the Water and Sewerage Board. It does not appear to have been the subject of a grant, or to have been lawfully appropriated to any particular purpose.
3. We then come to a grant of land in Lime-street, which at present has been let by the Corporation to Messrs. Garrett and Byrnes, and is occupied as a site for ferry-boats trading to Pymont and Lane Cove. This land appears to have been the subject of an out-and-out grant, but I have not yet obtained a copy of such grant.
4. Adjoining this property is a lease of occupancy, granted to the Corporation, of a large block of land, also in Lime-street, which is at present, I understand, let by the Corporation to the Adelaide Steamship Company, and the Newcastle Steamship Company in violation, as far as I can understand, of the terms on which the land was appropriated to the City Council, which terms are said to set out in the letter from the Colonial Secretary, not yet supplied, No. 54, written May, 1854. Particulars of this letter I have not been able to obtain, and understand they are not forthcoming, but it was written from the Colonial Secretary's Office to the City Commissioners, and apparently gave them the use of this portion of land for the purpose of storage and receipt of produce, or some analogous purpose, and not the one to which it is put.
5. The property known as Market Wharf on the north side of Market-street, and the land known as the Corporation Wharf on the south side of Market-street. Of these properties, the former, in violation, as I understand, of the terms of the grant, has been let by the Corporation to Mr. Kethel, and the latter south of Market-street is also used by the Corporation for a purpose at variance with the terms of the grant.

As already stated, I have not obtained sufficient particulars to enable me to bespeak copies of the grants, but they will be obtained and forwarded in due course.

I have, &c.,

R. S.

(For JOHN WILLIAMS,
Crown Solicitor).

Captain Jackson.—F.K., 29/6/91.

I find from the Crown Solicitor's letter herewith that very large water frontages in Darling Harbour, valued at many thousands of pounds, are illegally held by the City Council, these frontages and others, blocks of land, not having been used for the purposes dedicated. I beg most respectfully to suggest that steps be taken by the Government to obtain possession of all frontages so held by the City Council.—J J., Circular Quay, 2/7/91. The Under Secretary, Finance and Trade.

No. 5.

List "A."

Giving particulars of water frontages in Darling Harbour, extending from Dawes Point to the Government Railway Wharf in Darling Harbour, occupied by the City Corporation.

1. Dawes Point Baths (northerly) and north end of George-street Wharf.
2. Foot of Pottinger-street.
3. Kent-street North.
4. Foot of Clyde-street southerly.
5. Corporation land in Kent-street dedicated as a landing place and steps.
6. Permission to reclaim water frontage of No. 5, given to Municipal Council.
7. Foot of Margaret-street.
8. Sewerage reserve.
9. Foot of Erskine-street.
10. Land granted to the Corporation in Lime-street, occupied by Garrett and Byrnes as a site for ferries for Pymont and Lane Cove respectively.
11. Land appropriated to the City Commissioners in 1854 by letter from the Colonial Secretary No. 54, and now sublet by the Corporation (a) to the Adelaide Steamship Company (Limited), and (b) the Newcastle Steamship Company (Limited).
12. Foot of King-street, leased as a wharf to the Parramatta Steamship Company.
13. Market Wharf, same as No. 14 *post*.
14. North of Market-street, block of land granted to the Corporation, and now let by the Corporation in violation, as it is believed, of the terms of the grant to Mr. Kethel, and sublet partly to John Sec & Co.
15. Pymont Bridge Road.
16. Corporation Wharf, south of Market-street, said to be granted to the Corporation for market purposes, but now occupied as storage ground for the Corporation.
17. Foot of Druiitt-street. This appears to be illegally closed by Chapman's trustees and a foundry built across the street, and can hardly, therefore, be said to be in the occupation of the Corporation.
18. Foot of Bathurst-street, two jetties said to be leased by the Corporation.

A.S.

No. 6.

No. 6.
List "B."

Complete List of all Water Frontages and Wharfs extending from Dawes Point to the Government Wharfs in Darling Harbour.

1. Dawes Point Baths (Corporation).
2. Donald Larnach's Wharf (Walker's).
3. Parbury's Wharf (Lamb's).
4. Saywell's Wharf (Alger's).
5. Dalton's Wharf (Farrelly's).
6. Pottinger-street (Corporation).
7. Lamb's Central Wharf.
8. Parbury's (Summerbell) Wharf.
9. Kent-street.
10. Towns' Wharf.
11. Moore's Wharf.
12. Some ungranted land.
13. M'Donald's Trustees' (formerly Long and Wright).
14. Flood's Washington Wharf (now Mason Bros.).
15. Charles Smith's Wharf.
16. Dibbs' Wharf (now Gibbs Bright's).
17. Clyde-street (Corporation land), not occupied.
18. Dibbs' Wharf (further portion, also in occupation of Gibbs Bright).
19. Captain M'Lean's land (formerly Osborne).
20. Corporation land. See No. 5, list "A."
21. Spain's land (now Monk's).
22. Buckley's boat-shed.
23. Cureton's Wharf (now Jacob Reeh).
24. Gas Company's (formerly Hely and Harper).
25. Gas Company (two pieces).
26. Grafton Wharf (John Fraser & Co.)
27. Clarence and Richmond River Co., with frontage to Sussex-street.
28. Queensland Shipping Co.
29. Union Steamship Co.
30. Foot of Margaret-street.
31. Russell's Wharf (leased to Huddart, Parker, & Co.)
32. Day's Estate (claimed to be Crown land).
33. Sewerage Reserve. See list "A," No. 8.
34. Clarke and See (Henderson's Estate).
35. Webb's Estate.
36. Preddy's Wharf (Miss Brown, owner).
37. Illawarra Steam Co. (Phoenix Wharf).
38. James Cox (Henry Clark, lessee, Victoria Wharf).
39. Government resumption, north of Erskine-street.
40. Erskine-street (Corporation).
41. Sydney Bethel site (now Matthew Smith, Speer, lessee).
42. Nil.
43. Corporation grant of land in Lime-street. See list "A," No. 10.
44. Corporation leased land in Lime-street. See list "A," No. 11.
45. Crown land, leased to Fotheringham, thirty years to run (Seamer and Langley, under tenants).
46. Cox's (Howard Smith, lessees).
47. Edrop's Caledonian wharf (Jeannerett, lessee).
48. Foot of King-street, Parramatta steamers, wharf (Jeannerett, lessee).
49. Struth's Wharf (Howard Smith).
50. Bray family (Newcastle and Hunter River Steamship Co.).
51. Market Wharf (lessees, Kethel and John See & Co.).
52. Pyrmont Bridge Road.
53. Corporation Wharf, south of Market-street. See list "A," No. 16.
54. Thomas Buckland or Buckland & Williams (Baltic Wharf).
55. James Cooper, John See & Co., tenants (Albion Wharf).
56. M'Ilwraith's (late Pegan's) Wharf } These properties, I believe, now belong to, or are represented
57. Street's Wharf } by, R. Reid & Co.
58. Crown lands in occupation of the foregoing.
59. Wentworth's Wharf (Allen & Walker, lessees).
60. Druitt-street closed, supposed to be in adverse possession of Chapman's Trustees, and partly encroached on by a foundry.
61. T. B. Dearin, Pacific Wharf.
62. Seamer's timber yard, believed to be an encroachment of C. E. Jeannerett's.
63. Foot of Bathurst-street, No. 18, List "A."
64. New South Wales Co.
65. Thomas Barker's Estate, Gillespie's flour-mills.
67. P. N. Russell's Wharf.
68. Miller & Harrison's Wharf.
69. The Misses Murphy.
70. Foot of Liverpool-street.
71. Chadwick's Wharf.
72. Fresh Food and Ice Co.
73. Darling Harbour Government Wharf.

No. 7.

The City Solicitor to The Acting Under Secretary for Finance and Trade.

Sir, City Solicitor's Office, 28, Castlereagh-street, Sydney, 19 May, 1891.

In reference to your letter to the Town Clerk of the 23rd ultimo, desiring to know "whether the Municipal Council would be prepared to agree to a cancellation of the 'lease' granted to the Council of the water-frontages at present occupied by Messrs. Byrne and Joubert on the south side of Erskine-street." I am directed by His Worship the Mayor to inquire whether the portion occupied by Messrs. Byrnes and Joubert is the only one required by the Minister for Government purposes.

I might here state that the site in question, together with other water-frontages adjoining, are vested in the Council by grant from the Crown.

I have, &c.,
GEORGE MERRIMAN,
 City Solicitor.

Captain Jackson, 20/5/91. The land now occupied by Messrs. Joubert and Byrnes is the only water-frontage that I think will be required by the Government for ferry purposes for years to come. It is stated that the land in question, together with other water-frontages, have been vested in the City Council by grants from the Crown; as there may be some mistake in this matter, I would most respectfully suggest that the Crown Solicitor be requested to ascertain without doubt what water-frontages in the harbour of Sydney have been vested in the City Council by grant from the Crown.—J.J., 21/5/91.

No. 8.

Treasury Minute.

Right of ownership of certain Harbour Frontages at present in the possession of the Municipal Council of Sydney.

The Treasury, New South Wales, Sydney, 9 July, 1891.

THE Colonial Treasurer desires to submit, for the consideration of his Honorable Colleagues, the following particulars respecting the present ownership of several Darling Harbour water-frontages. As a result of recent consideration as to what foreshores at Darling Harbour were likely to be required in the near future for ferry purposes, a letter was addressed by the Treasury, on the 23rd April last, to the Town Clerk, inquiring if the Council would object to a cancellation of a lease understood to have been issued by the Government some years ago in respect of certain land on the south side of Erskine-street. The Council's reply was to the effect that the site referred to was part of a grant by the Crown. This raised a question as to the Council's right of occupancy in regard to various other portions of the foreshore, reference being made to the Crown Solicitor, on the 22nd ultimo, for advice as to what water-frontages in Sydney Harbour (more especially in Darling Harbour) have been vested in the City Council, by grant from the Crown. A report (or rather, a progress report) was furnished by Mr. Smith, on the 15th instant, enclosing two statements marked respectively "A" and "B." Statement "B" is a complete list of all water-frontages and wharves, extending from Dawes Point to the Government Wharves in Darling Harbour. Statement "A" gives particulars of water-frontages in Darling Harbour, extending from Dawes Point to the Government Railway Wharf in Darling Harbour, occupied by the City Council. In regard to item 5, in this latter statement, the Crown Solicitor remarks, that the land is a large block of property with a considerable frontage to Kent-street, and a large frontage to the water; this property seems never to have been granted by the Crown, but was dedicated as a landing place and approach for ferry passengers, apparently from Balmain, but has never been so utilised, and is now used as a storage ground for wooden pavement blocks. Item 6 is called a sewerage reserve; it has not yet been ascertained whether this block is occupied by the Corporation or the Sewerage Board; Mr. Smith adds that it seems to him that the land should be handed over to the Sewerage Board; it does not, however, appear to have been the subject of a grant or to have been lawfully appropriated to any particular purpose. Item 10 refers to a grant in Lime-street, at present let by the Corporation to Messrs. Garrett and Byrnes, and is occupied as a site for ferry-boats trading to Pyrmont and Lane Cove; the land appears to have been the subject of an out-and-out grant, but a copy of such grant has not yet been obtained. Adjoining this property is a lease or occupancy granted to the Corporation, of a large block of land, also in Lime-street, at present understood to be let by the Council to the Adelaide Steamship Company and the Newcastle Steamship Company, in violation, as far as at present understood, of the terms on which the land was appropriated to the Council, which terms are said to be set out in a letter from the Colonial Secretary to the City Commissioners, in May, 1854; particulars of this letter the Crown Solicitor has not yet been able to obtain, but it was written by the Colonial Secretary to the City Commissioners, apparently giving the latter the use of the land in question for the purpose of storage and receipt of produce, or some analogous purpose, and not the one to which it is applied.

Item 13 refers to property known as Market Wharf, on the north side of Market-street, and the land known as the Corporation Wharf, on the south side; the former of these properties has been let to Mr. Keibel, apparently in violation of the terms of the grant, while the latter is used by the Corporation for a purpose at variance with the conditions of grant.

The Crown Solicitor concludes his report, now under notice, by intimating that he has not obtained sufficient particulars to enable him to bespeak copies of the grants, but adds, that the same will be obtained and forwarded in due course.

Perhaps the Crown Solicitor might be asked if he has any further information respecting this matter, and what action he would recommend on the part of this Department.

F.K., 17/9/91. Approved.—B.S., 18/9/91. The Crown Solicitor.—F.K., 18/9/91.

No. 9.

The Crown Solicitor to The Under Secretary for Finance and Trade.

Sir,

Sydney, 19 July, 1891.

I have the honor, in further reply to your letter No. P.O. 1,135, 4,831, Mis., and in continuation of my letter of the 15th June, 1891, No. 91,851, to enclose papers from the Department of Lands, noted as in margin, with their respective enclosures. These papers show the terms on which the three principal properties are held by the Corporation, viz. :—1. Land in Kent-street. 2. Land in Lime-street. 3. Market Wharf.

I have also the honor to enclose three further bundles of papers borrowed from the Department of Lands, which must be returned again as soon as possible, relating to various leases to the City Corporation.

I would suggest if these lease papers are not wanted they be returned at once, as they are wanted for reference at the Lands Department.

I have, &c.,

For JOHN WILLIAMS,

Crown Solicitor,

R.S.

No. 10.

Report of Deputation, &c.

REPORT of deputation representing Balmain, Drummoyne, and Ryde, that waited on Minister for Works, 29th July, 1892, to urge consideration of the matter of constructing a new bridge from Pymont to Glebe Island.

Department of Public Works, Sydney, 29 July, 1892.

Proposed new Bridge from Pymont to Glebe Island.

A DEPUTATION, representing the Municipalities of Balmain, Drummoyne, and Ryde, introduced by Messrs. Johnston, Darnley, G. D. Clark, Black, Kelly, and Murphy, M's.P., waited upon the Minister this morning to urge him to consider the matter of constructing a new bridge from Pymont to Glebe Island as soon as possible.

It was pointed out that the present bridge was built over thirty years ago, and was not suitable for present requirements, the traffic over the bridge having increased extensively; and that the structure was considered to be unsafe. The deputation represented that the traffic in the quarter of the metropolis in question warrants the construction of a bridge of the most improved type, and that Mr. Bruce Smith had promised a former deputation that a new bridge, connecting Pymont with Glebe Island, would shortly be constructed, with a tramway to Balmain over it.

The Minister said he found that in 1890 a special report was prepared on three questions: namely, the construction of a new Pymont Bridge, the construction of a new bridge for Glebe Island, and the construction of a tramway to Balmain; but he could not find any record of a promise by Mr. Bruce Smith to invite competitive designs for the Glebe Island Bridge. Mr. Bruce Smith had, however, invited competitive designs for the Pymont Bridge. The designs for the latter bridge were now in and the prizes in connection with the competition had been awarded.

The report stated, in regard to the Glebe Island Bridge, that the proposed new bridge ought to be built at a point adjacent to its present site, by which the heavy grades now existing could be abolished; and the construction of a bridge with cast-iron cylinders, wrought-iron or steel superstructure, roadway 36 feet wide, two 7 feet footpaths, and clear headway of 12 feet, with a draw-span for the centre of the bridge, was recommended. The estimated cost of the bridge was about £140,000. That was a pretty large sum of money, and the Pymont Bridge was estimated to cost £220,000. It was rather a difficult matter for him to say absolutely that the matter would be taken in hand. However, the Engineer-in-Chief was still favourable to the construction of a new bridge, and thought that it would be desirable to submit a sum for a new Glebe Island Bridge on the Estimates.

Some reference had been made to the "patching up" of the bridge. Mr. Johnston had called at the office several times about the old bridge, and it was in consequence of what he had said that the "patching" had been going on in order to make the bridge safe.

Before anything could be done in the direction of constructing a new bridge he would have to submit a sum of money for the consideration of Parliament, and then the matter would have to be referred to the Public Works Committee. It would be some months before anything could be done; but it was evident that something must be done, and, without making any definite promise, he felt disposed to submit for the consideration of the Cabinet a sum of money to be placed on the Estimates for next year. He felt very much disposed to do so, and in all probability it would be done.

In referring again to the Pymont Bridge, at the conclusion of the interview, the Minister said that it was a question which presented itself to his mind as to whether it would not be better to fill up the whole of the water beyond Pymont Bridge to the head of Darling Harbour than to expend a quarter of a million of money in constructing a new bridge. He considered it would be cheaper to fill up that piece of water and convert it into land than it would be to build a new bridge. The Department was engaged in filling up and reclaiming lands all over the harbour, and it was but a question as far as expense went whether it should be done at Darling Harbour or any other spot. If they filled up the portion of Darling Harbour in question, they would have an asset which would cover the cost of reclamation, and a railway could be run across it to Circular Quay. It was a question well worth consideration, and he intended to go into the matter thoroughly to see how the project would work out.

W.J.L.

No. 11.

J. E. F. Coyle, Esq., to The Secretary for Public Works.

Dear Mr. Lyne,

Norwich-chambers, Hunter-street, Sydney, 30 July, 1892.

I observed lately in the Press that, in reply to a deputation, you made some remarks as to the filling in of Darling Harbour above the existing Pymont Bridge. About sixteen months ago I concluded a somewhat exhaustive inquiry into this and other matters relating to Darling Harbour land resumption, railway connection with Circular Quay, and Woolloomooloo Bay reclamation, &c. The plans and other papers were handed in to the then Minister for Railways on the 20th March, 1891.

The

The reclamation of the head of Darling Harbour up to Bathurst-street, Druitt-street, and Pymont Bridge were severally considered, and the chief objections to filling up to the bridge were that 4,750 lineal feet of water-frontage would be extinguished as against 990 feet gained along the front of the reclamation. The accommodation for a certain amount of coastal trade would require to be found elsewhere, considerable disturbance of existing market arrangements would take place, and a bridge was in existence.

The advantages were very obvious, 38½ acres could be reclaimed at a cost of £152,955. Ample space for railway accommodation would be obtained, and sufficient ground would be left to complete the rearrangement of the land and streets along the western side, which will in any case require to be resumed.

The question of a new bridge to Pymont, costing £300,000, did not arise at the time of the inquiry, and as my instructions did not admit of my taking evidence as to the importance of the trade above the bridge, I made no official recommendation as to the filling in, but my notes show that if Government put a siding 50 chains long from the railway at Eveleigh, by way of Philip or Gerard Streets, into the sandhills to the eastward, that the material for reclamation could be put in place for 1s. 6d. per cubic yard.

The value of this reclamation could not be put at less than a million sterling. The estimate of cost is as follows:—

Area, 38½ acres.			
Sand, 1,490,720 cubic yards, at 1s. 9d. per cubic yard	...	...	£130,438
Clay covering, 6 inches in depth, 31,057 at 2s. 6d. per cubic yard	...	...	3,882
Rubble embankment, 45,408 at 5s. per cubic yard	...	...	11,352
Supervision, 5 per cent.	...	...	7,283
Total	...	...	£152,955

Yours, &c.,
J. E. F. COYLE.

No. 12.

W. Neilley, Esq., to The Under Secretary for Public Works.

Sir,

33 Imperial Arcade, Sydney, 2 August, 1892.

Observing that the attention of the Minister has been turned towards the reclamation of the water space of Upper Darling Harbour, I have the honor to point out that a project of the nature referred to was placed before the Royal Commission on City and Suburban Railways by Mr. Oscar Schulze, and will be found lettered Va. in the Report of the Commission. At the time this was considered the competitive designs for a bridge to replace that connecting Sydney with Pymont had only been called for; but an impression gained ground that at least a quarter of a million would be required to complete the proposed bridge, and that a further outlay of a large sum would be necessary to make the railway wharfage frontages available for large ships.

Again, in considering the future connection with the western suburbs, the crossing, or heading, of Darling Harbour was looked upon as one of the principal obstacles to a complete system of circular railways, and the opinion expressed by Mr. Schulze in his evidence that Sydney needed land reclamation, as in the case of Blackwattle Bay, seemed to find favour with the Commission; but the project was set aside, mainly as not meeting present requirements, but quite as much in the idea that it was a proposal that the next generation would require to see carried into effect, and it was, in a measure, relegated to posterity.

The Commission practically settled the question east or west of George-street for the city extension by adopting the Railway Commissioners amended proposal. In this view I had the honor to suggest, twelve months ago, a cheaper and, I venture to think, a more effective scheme, which would in some respects fall in with the project, lettered "J" in the report, which was all but approved by the Legislature in 1886. I have, since seeing the bridge designs a few weeks back, revived my knowledge of the subject, gained by close attention to it during the last four years, and I am satisfied that I can show how the east and the west of the city can be served with an actual profit on the city extension, and that properly arranged starting points can be secured for the needed suburban extensions to the eastern and to the western suburbs. My city project would utilise Government property that the Darling Island proposal would render almost valueless, and serve for goods and wool, as well as for passengers.

I have, &c.,
WM. NEILLEY.

B.C.—Mr. Darley.—D.C.McL. (for U.S.), 4/8/92.

This proposal to fill up the head of Darling Harbour above Pymont Bridge is a very old one, the only thing that prevented it seriously being entertained before this was the probable cost. I am having a careful estimate made to ascertain as near as possible what the cost is likely to be, and will submit the whole scheme for the Minister's consideration.—C.W.D., 12/8/92.

B.C.—The Under Secretary for Public Works.

No. 13.

Memo. from The Under Secretary for Public Works to The Engineer-in-Chief for Harbours and Rivers.

Department of Public Works, Sydney, 11 August, 1892.

Proposed Reclamation of Darling Harbour, beyond Pymont Bridge.

ALDERMAN John Harris called at the office yesterday respecting a notice he had seen in a paper as to the proposal of filling up Darling Harbour beyond Pymont Bridge. He pointed out that, in the event of this being done, it will be necessary to resume a considerable quantity of land at the rear of Darling Harbour—low lying land, and which can only with great difficulty be drained at present.

J.B.

Seen. Mr. Tillett to note. A contour plan of the land around head of Darling Harbour must be prepared in connection with this estimate.—C.W.D., 15/8/92.

No. 14.

No. 14.

Memo. from The Under Secretary for Public Works to The Engineer-in-Chief for Harbours and Rivers.

Department of Public Works, Sydney, 13 August, 1892.

Proposed improvements at Darling Harbour.

ENCLOSED will be found a plan which has been handed to the Minister, showing proposed improvements at the head of Darling Harbour, and also the continuation of the railway from Darling Harbour to Sydney Cove.

The Minister would like to have this project, so far as the filling-up of the head of Darling Harbour is concerned, inquired into as quickly as possible. At present he wishes the inquiry limited to the probable cost of filling up the space indicated, including of course, the necessary retaining walls. It must be borne in mind that a very large sum of money will be required to reconstruct the Pyrmont Bridge which would, of course, be unnecessary were this space filled in. The Minister understands that the compensation for the loss of water-frontage would not be so large as would at first sight appear, as he is informed that many of the wharves are unauthorised as well as the reclamations which have been made. This, therefore, should be looked into.

Will Mr. Darley kindly in the first instance have an estimate prepared of the cost of filling-in with the best appliances which can be obtained—namely, the sand-pump dredge. Mr. Lyne thinks it might be done at a very small cost, judging from the reports which Mr. Darley has already supplied him with, as to the cost of reclamation by this means.

The Minister has had some conversation with Captain Jackson on the subject, and perhaps Mr. Darley will be so good as to see that gentleman before making his report.

J.B.

Approved,—W.J.L., 13/8/92. B.C. Mr. Darley, with plan, J.B., 13/8/92.

No. 15.

Minute from The Under Secretary for Public Works to The Engineer-in-Chief for Harbours and Rivers.

Sydney, 4 November, 1892.

Darling Harbour Reclamation Scheme.

THE Minister has had before him a proposition with regard to Darling Harbour, which is somewhat different from that which Mr. Darley is investigating. It consists in constructing a coffer dam, or wall, near the bridge, to be used as a road. It is then proposed to pump out the water behind this dam, and to use the land thus exposed, in its present state, for cellarage purposes and stores.

Will Mr. Darley kindly let the Minister know, roughly, what it would cost to construct such a water-tight road, and pump out the impounded water, and about what time it would take to do the latter portion of the work with the pumping machinery which can be readily made available.

J.B., 5/11/92.

Prepare an estimate for a coffer dam somewhat of the nature shown on rough sketch, close sheet piling 12 in. x 12 in. Oregon, front piles to be creosoted to protect them during progress of work from Teredo. Wall of concrete faced with sandstone to within 2 feet of low-water mark, and Trachyte on top. Cofferdam on harbour face to be removed, piles to be cut off at ground level. Compute capacity of harbour above the wall up to (say) mean tide level. I think the coffer dam should be constructed on harbour side of Pyrmont Bridge, so as to preserve the continuity of Market-street and Union-street, Pyrmont. Two of our sand-pump dredges could easily be laid alongside the wall to pump out the upper 15 or 18 feet of water. Some centrifugals on shore would do the remainder.—C.W.D., 8/11/92. Mr. Tillett.

No. 16.

Mr. G. A. Brown, Wharfinger, to The Secretary for Public Works.

Sir,

Pyrmont Wharf Office, 22 November, 1892.

See Appendix A.

I do myself the honor of enclosing you sketches referring to Darling Harbour Reclamation, &c., and sincerely trust that you will excuse the liberty I have taken.

I have, &c.,

GEORGE A. BROWN,

Wharfinger.

P.S.—I should be very happy to communicate with you at any future time.

Mr. Darley to see.—J.B., 23/11/92. Seen.—C.W.D., 25/11/92.

No. 17.

Particulars of Scheme.

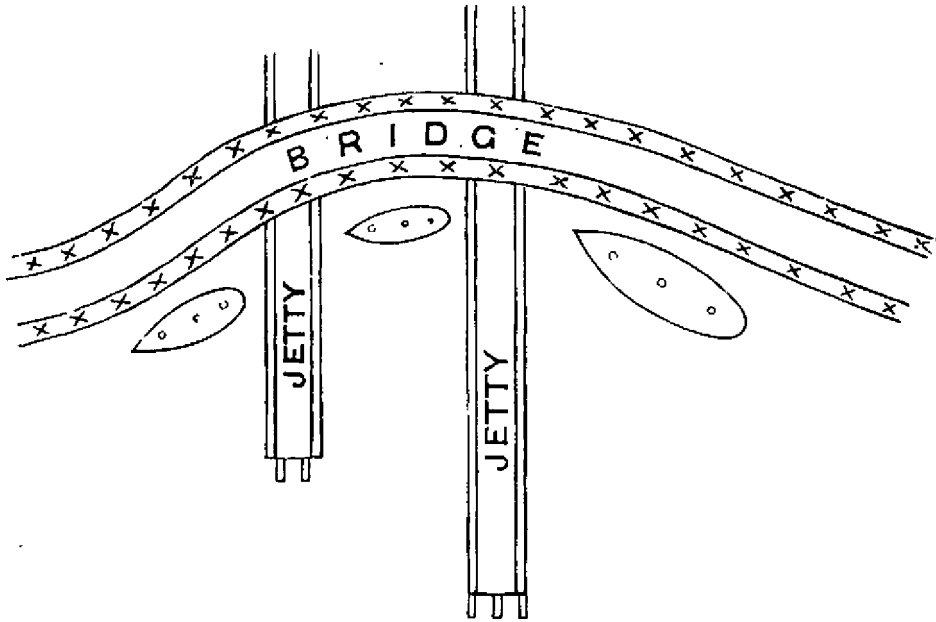
Enclosure (Mr. G. A. Brown's letter, 22/11/92.)

THE proposed plan is to reclaim Darling Harbour up to the present site of the Pyrmont Bridge, that is to say, not in a direct line across but to take the form of a Circular Quay—by doing this a great deal of deep water filling up will be dispensed with, and the portion alluded to will give sufficient depth to say at least six large sized ships which you will observe on reference to the enclosed plan.

It is also intended to place the railway lines along each jetty similar to those at the new Government Wharf at Pyrmont, thus bringing shipping in connection with the railway—thus the traffic as far as ships are concerned is complete. The next matter is the traffic from Pyrmont to Sydney and *vice versa*, or from Union-street to Market-street, which is at present carried over the present bridge.

This

This plan proposes to erect a bridge only high enough to allow a locomotive with its probable highest load to pass underneath—the bridge to take the course of the Circular Quay, and to be built right around the edge, which, when erected, would form a covering and be a protection for the goods landed at the circular portion of the reclaimed section, as marked here :—



This bridge will answer all the requirements of the passenger and vehicular traffic. Ships are not required to pass under the same; then cargoes may be landed on the wharf or the jetties for either road or rail, and the rail shunting and work may be done without any other traffic interfering with it, all traffic being independent and confined to their allotted portions. This plan also deals with the Darling Island eastern frontage, suggesting a line of wharf facing or forming the line of reclamation to the Point. Below would be the line of water-frontage from the bridge to the eastern point of Darling Island.

No. 18.

Minute from The Engineer-in-Chief for Harbours and Rivers to The Under Secretary for Public Works.

Sydney, 8 February, 1893.

Darling Harbour, above Pyrmont Bridge.

THE proposal to construct a new bridge across Darling Harbour to replace the existing timber bridge, at an estimated cost of about £290,000, has brought forward several proposals aiming at the reclamation of the upper portion of the harbour, and consequently the abolition of a bridge with an opening span.

Two suggestions have been submitted for me to report upon. Both are closely allied, the only difference being that scheme No. 2 proposes to save some of the filling by introducing cellarage on an extensive scale. Plans showing details which I have worked out for both schemes are attached.

No. 1 scheme, as worked out.

To maintain the continuity of the road connection between Market-street on the Sydney side and Union-street on the Pyrmont side, I have provided for constructing the quay wall to the north of Pyrmont Bridge, keeping it sufficiently clear to give free access for its construction without interfering with the present bridge or the traffic.

I propose to construct this wall in the dry between two coffer-dams, each framed of double rows of 12 inches by 12 inches Oregon piles driven close together, the space between them to be excavated down to the sound clay, and filled with puddle clay; the two coffer-dams being kept far enough asunder to lay the foundations for the wall which I propose to form of concrete faced with sandstone up to low water mark, and above low water to be faced with trachyte from Bowral.

If the space behind the wall is to be wholly filled up, and reclaimed as in No. 1 scheme, then it will only be necessary to stop this quay wall where it meets the wharf level on each side of the harbour.

I have assumed that the clay met with in the borings at about 8 feet below the present surface will be strong enough to found the wall upon. The borings indicate it to be of a strong tough nature, but should it prove upon further investigation not to be sufficiently strong, it will be necessary to take the foundation down to the rock; this, however, would have to be done on piles or cylinders at a greatly enhanced cost. I think it sufficient for the present to assume that a good foundation can be obtained at the depth shown. I estimate the cost of constructing this wall, including the coffer-dams, removing outer one upon completion, formation of roadway, including kerbing, guttering, wood-blocking, footpaths, &c., but not the filling, as this will be dealt with separately, at £156,000.

Constructing

Brief details of plans, &c., accompanying this Report :—

- Plan No. 1.—General plan of proposal.
- " 2 and 3.—Disposal of sewage.
- " 4.—Design for sea wall.
- " 5.—Design for cellarage.
- " 6.—Design for elevated roadway.

Constructing a permanent sea-wall in the first instance is a costly work, but it will undoubtedly make the best and most satisfactory finish, as the work will then be done for all time; but it is not absolutely essential, for the reclamation could be carried on behind a rubble wall formed of stone ballast tipped across the harbour. This form of wall is, however, not without objection, for it will be necessary to construct a timber wharf in front of it to bring vessels alongside, and the piles cannot be easily driven, repaired, or replaced at any time in the stone filling. The cost of this ballast dyke, including a timber wharf 35 feet wide and formation of roadway as before referred to, I estimate at £13,000—the cost of filling being omitted as before.

Before the filling can be commenced it will be necessary to provide for the drainage now finding its way into the upper part of the harbour. I attach, as an appendix, a report from Mr. Smail, the Engineer for Sewerage under the Water and Sewerage Board. He deals fully with the whole question, and the plans show the extent of drainage works involved. That this must be extensive, I have only to mention that the area draining into the harbour above the bridge is about 500 acres; the whole of the storm-water off this area has to be provided for as well as the sewerage from the Zone below the 40 feet contour level.

The cost of the storm-water drains must be wholly charged to this scheme, but the cost of the low-level system for intercepting the sewerage from the Zone below the 40 feet contour might fairly be charged to the Sewerage Loan Vote, as sooner or later this must be undertaken, being part of the low-level system of the Main Drainage Scheme.

The cost of all these drainage works is estimated at £128,000, of which £30,000 would be fairly chargeable to the Sewerage Loan Votes, leaving £98,000 chargeable to this reclamation scheme as wholly consequent thereon.

The plan shows the main duct carried down the centre of the harbour. This would have to be constructed on a platform carried on piles, and, as before mentioned, should be carried out before the filling in is commenced.

Upon completion of the sea-walls and drainage and sewerage works, the reclamation could be commenced. This can easily be done with sand-pump dredges which would be moored near the wall and kept constantly at work lifting and pumping into the enclosure all the sand, silt, and mud raised by the ladder dredges in various parts of the harbour. I estimate the quantity of filling required at 2,586,000 tons.

If all the material lifted by the four dredges now working in Sydney Harbour, namely the "Sydney," "Samson," "Hercules," and "Charon," can be made available and be taken to Darling Harbour it will take at least three years to fill in the reclamation, as the greatest aggregate output from these four dredges in one year only amounted to 879,000 tons.

The material mostly dredged up in Sydney Harbour consists of mud and clay. Should the whole of the reclamation be made of this material without the admixture of a good percentage of sand, the land so formed will take a long time to consolidate owing to the great depth of filling, namely, from 25 to 35 feet. It would probably be three or four years before a reclamation this depth, formed of mud and clay, could safely be walked on, much less built upon. The reclamations we have so far made with the sand-pump at Long Cove and Neutral Bay have been largely composed of sand, which has been obtained between Darling Point and Garden Island, opposite Rushcutters' Bay, where there was a large sand-bank in the way of navigation on the south side of the harbour. This bank has been almost entirely removed. Therefore, to obtain such a quantity as will be required to fill Darling Harbour would necessitate placing a dredge or dredges to work at some place such as in the eastern channel, or Middle Harbour, or Rose Bay, for the special purpose of obtaining sand to mix with the mud. The cost of this special dredging and towage should be charged to the reclamation work. I estimate the cost of filling up with the sand-pump dredge, including wear and tear of pipes, &c., at 3d. per ton.

Cost, therefore—2,586,000 tons, at 3d.	...	...	...	...	...	£32,325
But if half the material has to be specially procured, a further sum of 6d.						
per ton must be added on this quantity, viz., 1,293,000, at 6d.						32,325
						£64,650
Total cost	...	...	...	...	...	£64,650

On one of the sketch plans submitted to me with the papers for report, I observe that a number of jetties are sketched out projecting down the harbour in front of the reclamation. To make these jetties of practical use in connection with the Railway yard it would be necessary to lay rails thereon connecting them with the Railway, and thus form a number of level crossings over the main road from Sydney to Pyrmont. Besides, there would be other level crossings leading to the Pyrmont wharfs.

These numerous level crossings would be a great source of danger to the public using the road, as well as a serious hindrance and inconvenience to the road traffic. The approaches to the low-level road would also require steeper gradients than they have at present, although they are even now almost too steep for the heavy traffic. I am therefore of opinion that to obtain good gradients, and to permit of the new frontage being made full use of for shipping purposes, as well as to allow free access to the Pyrmont wharfs and jetties, that the road traffic should be carried across the reclamation on a bridge sufficiently high to admit of railway traffic passing underneath.

I attach a tracing showing such a structure, the road being carried on brick arches. I estimate the cost of this, including formation of roadway, footpaths, &c., at £102,900.

With regard to the suggested jetties, I should point out that if they are constructed it will be necessary to resume the wharfage now occupied by the Newcastle and Hunter River Steam Navigation Co., and the North Coast Steam Navigation Co., as the jetties projecting down the harbour would prevent the coasting steamers approaching these companies' wharfs end on as they do at present. I am, however, omitting the cost of any such resumption from my estimates, as well as the cost of constructing jetties.

Resumption of wharfage inside Pyrmont Bridge, between Pyrmont Bridge and the Government land now occupied by the Railway Department, at the head of Darling Harbour, there are twenty-three different sets of wharfs or properties having a total frontage to the harbour of 2,107 feet, and wharfage accommodation to the extent of 6,630 feet. The whole of this would necessarily have to be resumed, and in doing so the resumption would have to embrace all the land now occupied by stores, yards, &c., in connection with the wharfs.

I believe I am right in saying that nearly the whole of this is privately owned, having been wholly alienated from the Crown; but, up to the present, I have not been able to procure from the Department of Lands the detailed information, asked for some time ago, showing exactly how the matter stands as regards titles, leases of wharfs, &c.

It is not easy to say what would have to be paid for all this frontage, but I think that at the very least it would cost £150 (one hundred and fifty pounds) per lineal foot, at which rate the resumption would cost (say) £316,000.

To this must be added the loss of revenue now derived from leases of the wharfs, which amounts to a considerable sum—I understand about £1,400 per annum—and which may be largely increased as the present leases expire.

The Government wharfs inside the bridge have a frontage of 2,408 feet, and were constructed at a cost of about £69,000. This wharfage, much of it quite recently constructed, would be lost. Up to this, however, full use has not been made of these wharfs, but, with a good large opening in the bridge, I see no reason why they should not be turned to most profitable account, seeing that there are such extensive railway facilities alongside.

The whole cost of this scheme may be summarised as follows:—

	£
Sea wall and formation of roadway	166,000
Drainage and Sewerage works chargeable to this scheme	98,000
Filling in at back	61,000
High level roadway, excluding formation of road, &c., charged above (say)	92,000
Resumption of land (say)	316,000
Value of Government wharfs abandoned, put down at (say) half cost . . .	34,500
Total cost...	£770,500
If a Rubble Stone Dyke and Timber Wharf be constructed in place of concrete sea wall, deduct	123,000
	647,500
And if the high-level roadway be dispensed with, deduct a further sum of...	92,000
	£555,500
As a set off, the cost of the proposed new bridge will be saved, estimated at	£295,000
And 38½ acres of land will be reclaimed, which may be valued at, say,	
£2,000 per acre for railway purposes	77,500
Total	£372,500
This showing a loss by the Reclamation scheme of at least	£183,000

I think it would be a great mistake to deprive the city of the benefit derived, or that possibly can and should be derived, from the advantages of having this large and well-sheltered area of water surrounded by wharfage in such close proximity to the centre of the city.

In most ports at the present day every effort is being made by the construction of docks, canals, or the improvement of channels, to bring shipping close to the city. I therefore cannot help expressing the opinion that it would be a decidedly retrograde movement to close this valuable basin, and in exchange for an area of land for which it would be difficult to find immediate use. It would not be of a nature fit to erect large buildings or stores upon, as the cost of providing foundations through such a depth of reclamation would make building prohibitory.

No. 2 Scheme.

This is practically the same as No. 1, except that it is proposed to construct extensive cellarage behind the sea-wall.

In this case the construction of a watertight sea-wall to act as a coffer-dam is quite indispensable; and, moreover, the ends of the wall must be carried further into each side than would be necessary under the scheme last dealt with.

I estimate the cost of this wall, including roadway formation, pumping appliances, &c., at £181,000.

After the completion of the sea-wall and the drainage works as before described, the space behind could be pumped out, and the bottom excavated and prepared for cellarage; this I show on the plan to be a space 1,009 feet long by 550 feet wide (about 12½ acres), enclosed with brick-faced concrete retaining walls and a concrete floor 18 feet below low-water level. The whole area to be roofed over with brick arches carried on brick piers. The arches are shown with 20-foot spans, and high enough to give a headway of 24 feet, so that by adopting hydraulic truck elevators it would be possible to lower down goods trucks containing meat or other produce to the cold storage, and move them about to any part required by laying lines and sidings in the basement. The arches are shown very strong and with about 2 feet 6 inches of earth cover over them to enable railway lines and sidings being laid overhead, &c., and ballasted in the usual manner.

The remainder of the space surrounding that occupied by cellarage to be reclaimed by the sand-pump dredge as before specified:—

I estimate the cost of constructing the cellarage, including pumping out the space behind the retaining wall, and providing permanent steam pumping appliances	£500,000
And the reclamation of the surrounding space—1,774,000 tons, at 6d. (say)	45,000

With

With a combined engine and centrifugal pump of about the same power as that now on board the dredge "Neptune," the whole space behind the retaining wall, containing at low water about 265 million gallons, could be pumped out in from seven to eight days of continuous work. It would, however, be preferable to adopt a smaller pump as being more easily handled and requiring a smaller boiler, &c., the whole plant to be placed on a pontoon, which might be kept afloat inside the retaining wall; by adopting this arrangement the suction lift will be constant, while the discharge lift will increase as the enclosed water level is lowered. Under such circumstances the best results will be obtained with a centrifugal pump. The same pump could be availed of for keeping the whole of the foundations dry during the construction of the cellarage, &c., and upon completion of the work might be disposed of, and a more suitable pump purchased and permanently fixed for draining the cellarage,—a complete system of drainpipes being provided for under the floor for this purpose, all leading to one sump.

The whole cost of this scheme may be estimated as follows:—

Sea walls, including coffer dams and removal of same, formation of roadway at back, &c.	£181,000
Drainage and sewerage works as before	98,000
Cellarage covered in, including pumping and permanent pumping station, complete	500,000
Filling in at back	45,000
High level roadway, foundations in this case being put in dry will be cheaper, say	80,000
Resumption of land as before	316,000
Value of Government Wharfs abandoned, half cost	34,000
Total cost of Cellarage Scheme... ..	£1,254,000
Against this, to be allowed the estimated cost of constructing a new bridge as before, say	295,000
38½ acres of land reclaimed, &c., say	77,500
Value of cellarage, say, £3,000 per year capitalised	75,000
	£347,500
Total estimate	1,254,000
Less value of improvements as a set-off	347,500
Estimated loss on transaction	£906,500
To this must be added the capitalised value of the rent now derived from leases, say £1,400 at 4 per cent.	£35,000

This charge applies to both schemes and should really be placed at a higher sum, seeing that the rentals may be so largely increased as the leases, which are only short ones, fall in.

Since writing the foregoing I have received Mr. Perdriau's report (attached) with detailed Schedule and plans of all the properties between Pymont Bridge and the head of Darling Harbour.

The Schedule summarised shows that the Government derives annual rents amounting to £1,373 for the various wharf leases, and that the present occupants are paying rent to the various owners to the extent of £8,850 per annum. There are some twenty-three properties scheduled, and of these all but two seem to be wholly alienated—two small portions only having unauthorised reclamations in front of the freeholds.

The above figures go to show that my estimate of the value of the land to be resumed is under rather than over the true value.

At least one third of the properties are not leased or profitably held at present, so this proportion may fairly be added to the rentals, thus £8,850 + 1/3rd = £11,800, being the proportional rental value of the whole of the properties.

This sum capitalised @ 4 %	£295,000
10 % forced sale	29,500
Add for goodwill and disturbance of established businesses such as the Ice Company, Messrs. Allen and Walker, Saw Mills, Shipping Companies, &c., say at least	55,500
Probable value	£380,000

This amount being £64,000 in excess of the sum I allowed in my estimate. The sum I put down for disturbance of established business is low when compared with the sums paid to similar establishments when the land on the opposite side of the harbour was resumed, Messrs. Goodlet & Smith getting the sum of about £90,000 for being disturbed, their claim being £168,000.

After investigating and fully considering the whole case, I am strongly of the opinion that the benefits to be derived from the reclamation of the head of Darling Harbour would be purchased at too great a cost, and that it would most unquestionably be better in the interests of the Colony, the City, and all concerned, to construct a good bridge with a large opening span as proposed, and make full use of the wharfage round the head of Darling Harbour.

C. W. DARLEY,
Engineer-in-Chief for Harbours and Rivers.

No. 20.

Report by Mr. Perdriau.

[To accompany my letter to the Acting Chief Surveyor, No. 93-1, of 19th January.—S. E. PERDRIAU, Government Surveyor.]

PROPOSED RECLAMATION OF THE HEAD OF DARLING HARBOUR, SYDNEY.

SCHEDULE of water frontage properties on the east side of Darling Harbour, lying to the south of Pyrmont Bridge, giving particulars as to areas and dimensions of the lands, names of freeholders and lessees; also, as to terms of leases, and of the tenure of the lands beyond high-water mark for wharfs and jetties.

No. on Plan.	Name of Freehold and Lessee	Allotment No.	Description and Dimensions of Freehold or other tenure; also Dates and Terms of Leases.	Dates, Terms, and Conditions of Special Leases under the 89th section, for Wharfs and Jetties.
SECTION 30, CITY OF SYDNEY.				
1	.....	.....	Reclaimed Crown Land. Passage to steps now disused. The entrance to this land is closed by a close fence erected by the City Council.	
2	City Council, part of the Market Wharf Reserve.	.....	Freehold, 11½ perches. The reclaimed land, about 19 perches, has apparently not been alienated, and it does not appear that permission was given to reclaim it. Upon my stating these facts to the Town Clerk he promised to inquire into the matter, and if he discovered any authority from Government for the reclamation, to communicate with the Department to that effect.	Annual lease of 17 perches for wharf and jetty, at £25 per annum, from 1st January, 1891. NOTE.—The rent for 1891 not having been paid, although two reminders were sent, the Crown Solicitor was instructed, 23/12/92, to institute legal proceedings for recovery of same.
3	“Baltic Wharf”; Thomas Buckland and Executors of the late John Williams. Lessee	5	Unauthorized reclamation, 32½ perches. Application to purchase same refused. Ms. L. 92-2,451. Alexander Burns, timber merchant, has a lease of the jetty and the area shown upon plan for one year from 31st May, 1892, at £700 per annum, six months notice of determination of lease, before expiry of the one year, to be given by either party. Burns has no power to sublet without Buckland's consent in writing. Before the above-mentioned date, Burns had a seven (7) years lease, and he erected the brick offices now upon the land at his own expense, without right of removal, and will receive no compensation for same. J. Toohy and Buzacott & Co., of the hotel and shops respectively, have a right of way over the drayroad to their back premises.	The jetty, about 148 ft. x 52 ft., was erected many years ago, under permission granted by the Governor-General in 1850. It is not held under lease, and Mr. Buckland was called upon, 17/9/91, by the Department to tender a special lease application. NOTE.—Further action by the Department has apparently been delayed, pending decision as to a substitute for Pyrmont Bridge. If a new bridge be erected as proposed, it would be necessary to resume part, if not the whole, of this property.
	The tenants .....	.....	
4	Albion Wharf, James Cooper, of 58, Pentridge Villas, Bayswater, near London, England.	4	Reclamation 19 perches has not been purchased from the Crown, but the recent opinion of the Crown Solicitor is that it is included in the original grant to James Cooper.	There are two jetties on the frontage of allotment 4. The northern one is about 164 ft. x 26 ft. The southern one about 174 ft. x 24 ft. They were erected many years ago, under permission granted by the Governor-General in 1850.
.....	Lessees .....	.....	Block 410. Fo. 949. John See and W. H. Hinton have a lease for twenty-one years from 1st November, 1888, of the whole of allotment No. 4, and the two jetties, paying during the first fourteen years, £1,500 per annum, and during the last seven years, £2,000 per annum, payable in equal monthly instalments. Lessees to pay all rates and taxes, except the land tax, and landlord's income tax, if any. Provided that if the lessees be desirous of pulling down the stone store, situate near the water, they must first deposit £2,000 as guarantee, in some Bank to be approved by the lessor; then erect buildings to the value of £5,000 on the site, and then the £2,000 will be returned to them; or if the lessees expend £5,000 in buildings on the land elsewhere than on the site of said stone store, they may pull the store down and remove it. The building covenant has evidently been carried out. Book 436. Fo. 467. Walter Russell Hall advanced £8,000 on 8th April, 1890, on mortgage at 7½ per cent. per annum over See and Hinton's lease, to be repaid on the 5th April, 1895. Mortgagor to insure the buildings and keep same insured for £8,000 until that date.	These jetties are not held under lease, and Mr. Buckland, as agent for James Cooper, was called upon, 12th April, 1892, to tender a special lease application for same, this not having been done, the Crown Solicitor was instructed, 16th December, 1892, to take action to compel Cooper to legalise his occupation. NOTE.—Since my survey in January, 1891, two additional small areas have been covered by wharfs on piles, without authority from the Department. [See plan.]

No. on Plan.	Name of Freehold and Lessee.	Allotment No.	Description and Dimensions of Freehold or other Tenure; also Dates and Terms of Leases.	Dates, Terms, and Conditions of Special Leases, under the 59th section, for Wharfs and Jetties.
SECTION 30, CITY OF SYDNEY—continued.				
.....	Sub-lessees .....	.....	Book 498. Fo. 903. John Lysaght & Co. (Limited), galvanised iron merchants, have a sub-lease for seven years from See and Hinton of the area shown on plan from 1st March, 1892 at £900 per annum—£75 per month. The Company to pay all rates and taxes, except the land tax and landlord's property tax, if any. Lessees to keep property in good repair, less ordinary wear and tear and damage by fire. In the event of resumption by Government, Lysaght & Co., are to receive the compensation money, and See and Hinton are not to be responsible to them, nor liable in any way for such resumption. The lessors to be at liberty at the expiration of the lease to pay for at a valuation—to be fixed by arbitration, in case of difference—any buildings, erections, or improvements of any sort made by the Company.	As to the jetty fronting the Company's leasehold. The Company is to have exclusive use of same. to berth vessels north and south of it, but the lessors (See and Hinton) also have a right to the use, in common with the lessees, of the water between the said jetty and adjacent jetty of the lessors to the north.
4	Sub-lessees .....	.....	John Lysaght & Co. (Ltd.). The company have a right to three years' extension of this lease, making ten years in all, by giving notice any time within three years of the commencement of the seven years' term.	Upon inquiry of John See, I was informed that Nicoll has no lease. There is one drafted, but it is not signed; also, that Nicoll has not the exclusive right to the wharf, but only a right to berth vessels there, which right Mr. See also retains and exercises, principally for the discharging of timber, for which he receives the wharf dues. Mr. See also stated that Nicoll has no right to use the store, but is allowed to do so on sufferance only. Roche and Bloomfield, timber merchants, have a lease of the two sheds indicated on plan, area about 20 perches, for five years, from 1st December, 1891, at £5 per week. The tenants of the stores on the Sussex-street frontage have a right of way to the back of their premises.
.....	Nicholl's lease is not registered .....	.....	Geo. W. Nicoll has a three years' lease of the jetty (northern jetty of Albion Wharf), and storage accommodation, as shown upon plan, at £20 per month, from 1st October, 1891. The store was erected prior to the commencement of the lease, but Nicoll's office was erected at his own expense (it is on a recent addition to the wharf which is not covered by special lease from the Department).	Special lease for jetty, area, 300ft. x 30ft. for ten years from 1st January, 1888, at an annual rental of £150, granted to M'Iraith, M'Eacharn, & Co.
5	Union Finance, Guarantee, and Investment Company of Australia (Ltd.), now in private liquidation, late M'Iraith, M'Eacharn, & Co.	3	Reclamation 0a. 1r. 16 perches, purchased by trustees of the late Esther Hughes, the owners at that time of the freehold on 22nd May, 1876.	There are two special leases for jetty areas fronting this property, viz., a lease for a new jetty, 275ft. x 40ft. = 1 rood, for five years from 1st July, 1891, at £175 per annum, granted to the U. F. Co., and for two parts, 7 perches and 1 perch = 8 perches, of a former lease of 20 perches. The present rental is £20 per annum. An annual lease from 1st January, 1888, granted to Thomas Street, and now held by the U. F. Co.
.....	Union Finance, Guarantee, and Investment Company of Australia (Ltd.), formerly Thos. Street, and lately M'Iraith, M'Eacharn, & Co.	2	Reclamation, 28½ perches; purchased by Alexr. Campbell, 26th February, 1886. Reclamation, 1 rood 16 perches. Application to purchase refused. Ms., 90/4,991.	Special lease for two jetty areas fronting the 1 acre 1 rood 4½ perches, No. 1, 245 ft. x 30 ft., and No. 2, 250 ft. x 50 ft.; total area, 1 rood 31 perches. Lease for ten years from 1st January, 1889. Rental, £300 per annum for first five years, and £450 per annum for remaining five years. The U.S.S. Company (Limited) have acquired this lease from Allen and erected the jetties.
.....	.....	.....	The "Old Labour in Vain Hotel" is very much out of repair, it is untenanted, and the license is refused pending extensive repairs. Also, the remaining buildings on this land adjoining and to the south of the hotel are in a similar condition, untenanted, and must not be occupied pending repairs.	
6	W. C. Wentworth, now Fitzwilliam Wentworth.	1	Reclamation 2 acres 9 perches, purchased 15th September, 1862, by W. C. Wentworth; purchase money, £50. Lessees, Allen and Walker—now Thomas Allen—has a lease of 1 acre 1 rood 22½ perches in two pieces of 1 acre 1 rood 4½ perches and 17½ perches (see plan) from F. Wentworth for twenty-one years from 1st October, 1888, at £1,300 per annum clear for first ten years, and for the remainder of the term £1,700 per annum clear, payable quarterly, with a covenant that any buildings which may be erected shall be of brick or stone, and that pile jetties to cost £7,000 shall be built fronting the land according to plans and specifications exhibited within two years of commencement of lease; and also that the lessee will by dredging maintain a depth of water on the premises surrounding said jetties of not less than 18 feet at ebb tide. The covenant as to expenditure upon jetties has been fulfilled. (See below.)	

No on Plan.	Name of Freehold and Lessee.	Allotment No.	Description and Dimensions of Freehold or other Tenure; also Dates and Terms of Leases.	Dates, Terms, and Conditions of Special Leases, under the 89th section, for Wharfs and Jetties.
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SECTION 30, CITY OF SYDNEY—continued.

7	<p>Sub-lessees (Book 427, Fol. 146).....</p> <p>.....</p> <p>City Council, Druitt-street, reclamation</p>	<p>.....</p> <p>.....</p> <p>.....</p>	<p>Allen and Walker—now Thomas Allen—has sub-leased to the Union Steamship Company (Limited) of New Zealand, two parts of the areas leased by him from Wentworth, viz., 2 roods 39½ perches, leased for twenty years and eighty-nine days from 1st July, 1889, to 27th September, 1909; the rental to 1st October, 1898, to be £1,300 per annum, and for the remainder of the term £1,700 per annum; payments to be made quarterly on 1st days of October, January, April, and July in each year—£325 per quarter for first part of the term and £425 per quarter for the second part of the term. The covenant made by Allen with Wentworth relative to buildings and jetties has been accepted by the U.S.S. Company, and Allen holds an acknowledgment from Wentworth that the same has been fulfilled. The second part is a small area at the corner of Druitt-street and D'Arcy-street, for which the U.S.S. Company pay Allen £104 per annum, the lease being from 1st July, 1890, for nineteen years and eighty-nine days, expiring 27th September, 1909. The Company has the right to remove the weighbridge and any other fixed machinery during their lease. The Company are to pay all rates and taxes, except the land tax and landlord's income tax, if any. The Company also in both leases is bound to keep the buildings, jetties, &c, insured to their full insurable value during the term of their leases.</p> <p>Allen's leaseholds from Wentworth and his sub-leases to the U.S.S. Co. are clearly shown upon my plan. He has retained a water frontage of about 35 feet.</p> <p>Permission was given to the City Council, 1st November, 1883, to reclaim the area shown upon my plan. Such reclamation has not yet been effected, and no deed of grant has issued for the area.</p>	<p>On the water frontage of the 35 feet there is an old jetty. Allen and Walker applied for a special lease of this jetty on 27th June, 1890. Area, 7 perches. The Land Court, on reference by the Minister, fixed the annual rental at £40. The Land Board has recommended a term of 9 years, from 30th June, 1890. The rental for 1890, £20, and for 1891, £40, not having been paid the Executive Council approved that the lease be forfeited. The papers are now with the Crown Solicitor for the recovery of the rent. Note.—Since the Land Board dealt with the application the jetty has been enlarged.</p>
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SECTION 21.

8	<p>"Pacific Wharf," claimed by Thomas Henry Dearin; Chapman & Co. lessees. The lease is not registered.</p>	<p>Part of allotment No. 2; part of the unalienated reclaimed land fronting same.</p>	<p>The area—about 2 roods 32 perches—of reclaimed land embraces nearly the whole of site of the "Pacific Foundry," the freehold being only about 4½ perches. The said site—2 roods 36½ perches in all, is leased to Chapman & Co. (executors of the late Richard Manning) for five years from 1st June, 1889, at £420 per annum, payable monthly. The lessees pay the rates and taxes.</p>	<p>Special lease of about 18 perches = 200ft. x 25ft. granted to the late J. B. Dearin, father of T. H. Dearin, for 5 years, from 1st January, 1890, at £120 per annum.</p>
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No. on Plan.	Name of Freehold and Lessee.	Allotment No.	Description and Dimensions of Freehold or other Tenure; also Dates and Terms of Leases.	Dates, Terms, and Conditions of Special Leases under the 39th section for Wharfs and Jetties.
SECTION 21—continued.				
152—C	The reclaimed area, 2 roods 6½ perches was applied for to purchase by T. B. Dearin, and refused 22nd November, 1888. Ms. 88-14,406.	.....	When the lease was given there was an old jetty, situate as shown on my plan, it has since been demolished. At the commencement of the term of lease, the buildings on the site were mutually estimated by the lessor and the lessees at £1,000 and at the termination of the lease, the lessor T. H. Dearin, has the option of purchasing whatever buildings there may be on the site at a valuation. The price to be reduced by £1,000 the value on those on site when leased. Dearin erected the present jetty, which is comparatively new, at his own expense. He pays the rent for the jetty area to the Government, and receives nothing extra for same from the lessees. The lease is not registered, and I have not seen it. The above information, and that as to the limits of the lease, was obtained from Dearin. It will be observed that part of Drutt-street extended is embraced by same. The City Council aligned the extension of Drutt-street in 1880. In 1884 steps were taken towards asserting the City Council's right over the street, and causing the removal of the obstructions. It appears that action was stayed upon Dearin's writing to the Department of Mines, stating that immediate action would result in loss and probable litigation; and upon his promising to give up possession of the encroachment at the expiry of the lease, then about five years to run. Records, 89/259-3.	[See NOTE *.]
9	Claimant, John Henry Seamer	Fronting part of allotment 2.	Unauthorised reclamation:—About 26 perches, claimed and occupied by John Henry Seamer; application by him to purchase under the 9th clause of the Crown Lands Act of 1861, refused, 29th March, 1884. Ms. 86-5,821.	
10	James Thompson Wilshire, owner of freehold, and claimant of the reclaimed land.	Part of 2	The freehold is a small irregular area of about 11½ perches, fronting the freehold, and the unauthorised reclamation by Seamer is an unauthorised reclamation of about 1 rood 24 perches, which is claimed by J. T. Wilshire. These two areas, together with the wharf on piles on the western frontage thereof, are leased by J. T. Wilshire to John Hay Goodlet for fourteen years, from 11th October, 1882, at £500 per annum—£41 13s. 4d. per month, the last monthly payment to be in advance on 1st October, 1896. The lessee to pay all rates and taxes, and to keep the wharf and other erections on said premises in repair, reasonable wear and tear excepted. The £75 per annum charged by Government for said wharf area is paid by Wilshire. *NOTE.—Action has been taken by the Crown Solicitor towards establishing the Crown's right to the three unauthorised reclamations mentioned above, claimed by Dearin, Seamer, and Wilshire respectively. The Crown Solicitor is now—11th January, 1893—awaiting instructions from the Department of Lands as to whether writs of intrusion are to issue against these claimants and others in the immediate neighbourhood.	Special lease of the wharf area fronting this property for wharf as erected, was granted to J. T. Wilshire from 1st January, 1887, on an annual tenure at £75 per annum. Special lease of the jetty area for the jetty as erected on the northern frontage of Seamer's leasehold, about 12 perches, was granted to J. H. Seamer for five years from 1st January, 1888, at £35 per annum. Seamer has recently applied for a renewal of said lease, offering £30 per annum as rent.
11	Municipal Council of Sydney, Bathurst-street.	.....	Permission to reclaim 12 perches was granted to the Municipal Council of Sydney. Such reclamation has not yet been effected.	Special leases for two areas fronting Bathurst-street have been granted to the City Council for five years from 1st January, 1890, at a nominal rental of £1 per annum each, and jetties have been erected thereon. The northern area is about 66ft. x 18ft. (about 4 perches), and the southern one is about 120ft. x 18ft., = 8 perches.

No. on Plan.	Name of Freehold and Lessee.	Allotment No.	Description and Dimensions of Freehold or other Tenure; also Dates and Terms of Leases.	Dates, Terms, and Conditions of Special Leases under the 59th section for Wharfs and Jetties.
SECTION No. 10.				
12	William Kite and George Lee, trustees for Mrs. Cousins. Lessees, Gillespie Bros. & Co.	Part of purchased reclamation, fronting allotment 2, granted to Thos. Barker.	The freehold is irregular in shape, about 167 ft. x 80 ft., and with the stores and buildings then upon it was leased from 1st January, 1892, to Gillespie Bros. & Co. (John and John William Gillespie) for seven years, at £200 per annum, payable quarterly on 1st days of April, July, October, and January. The lessee to pay all rates and taxes of every description, and within the first year of the term to expend not less than £450 in permanent improvements upon the said land, and keep the wharf, buildings, and premises in good repair, damage by fire, storm, and tempest, and other inevitable accident, and reasonable wear and tear excepted. In the event of the Government setting up a right to any portion of the said premises, the lessees are not to be liable therefor to a greater extent than £10 per annum, in addition to the £200 per annum. If any part of the property be resumed by Government during the lease a fair proportion of the rent shall be abated, according to the nature and effect of the injury sustained by the lessees by reason of such resumption. Any dispute about same is to be settled by arbitration by two indifferent persons, one chosen by each side. Such dispute to be conducted according to the Act 31 Vic. No. 15 intitled "The Arbitration Facilitation Act."	Special lease for 8 perches, as occupied, granted to Kite and Lee for five years from 1st January, 1892, at £32 per annum.
13	Gillespie Bros. & Co., owners and occupiers.	Part of allotment No. 2 and part of the reclamation area fronting allotment 2. It also includes the 10 perches of reclaimed land granted to Jos. Wearne.	This area, 2 roods 1 perch—about 290 ft. x 78 ft., is under the Real Property Act (vol. 31, folio S3). Upon it the Anchor Roller Flour Mills are erected.	Special lease of 4 perches, about 80 ft. x 14 ft.; approved by Minister, 9/8/92, to be granted for a term of five years at £20 per annum. Date of commencement is not mentioned, but presumably it will be 1st January, 1892.
14	"Russell's Wharf." John Taylor, lately the Darling Harbour Wharf and Land Investment Co. (Ld.)	Part of purchased reclamation fronting allotment No. 2 granted to Thos. Barker—2 acres 1 rood 12½ perches.	This area, 1 acre 3 roods 4 perches, which includes that extending along the water frontage on piles, the latter varying in width from about 5 feet to about 20 feet (area, about 12½ perches), is under the Real Property Act. The 12½ perches have not been purchased from the Crown, and I presume it will be held that it was erroneously included in the Real Property certificate.	
	Lessees .....	.....	The Postal Department of N.S.W. had a lease of the southern portion of this land, about 27½ perches, which expired 31st December, 1898. The term was five years, at £400 per annum, the Department paying rates and taxes. They are still in occupation at the same rental, payable quarterly, without a lease. Taylor thinks the Department would be entitled to at least three months' notice, if he wished to determine their occupation.	
	Weekly tenants .....	.....	Upon the Barker-street frontage there are eleven shops—Nos. 1 to 11, as shown upon the plan—whereof the rentals are, for Nos. 1 and 2, £1 5s. per week; for No. 3, £1 10s. per week; for Nos. 4 to 11, £1 per week. At the date of my inspection they were all let at these rentals except Nos. 4, 5, and 7, which were vacant. The solid land of Taylor's wharf has all been reclaimed. It comprises the 1 rood 21 perches granted to P. N. Russell & Co., and part of the 2 acres 1 rood 12½ perches granted to Thos. Barker. The western portion of the southern part of Barker-street is enclosed in common with the remainder of Taylor's property, and occupied by him.	
15	Frederick Thomas Miller and George Robert Harrison, occupiers and owners	Very small part of allotment 2 and reclaimed land.	Area, 3 roods 18½ perches by deed. It is nearly all reclaimed land, composed of part of the 2 acres 1 rood 12½ perches granted to Thomas Barker, and the 19 perches and 15 perches granted to Miller and Harrison. The eastern portion of the southern part of Barker-street, a length of about 44 ft. 6 in., is enclosed in common with applicants' property, and occupied by them. Their conveyances do not embrace this land. The strip of wharf on piles on the water frontage is not held under lease from the Department.	

No. on Plan.	Name of Freehold and Lessees.	Allotment No.	Description and Dimensions of Freehold or other Tenure; also Dates and Terms of Leases.	Dates, Terms, and Conditions or Special Leases under the 89th section for Wharfs and Jetties.
SECTION No. 19—continued.				
16	.....	.....	About 2 perches, very irregular in shape, part of "site of the old jetty" included in the grant of 2 acres 1 rood 12½ perches to Thomas Barker. This area is covered by part of an old jetty on piles, erected and occupied by the Misses Murphy, whose lease to the F. F. and Ice Co. purports to include same.	
17	The Misses Elizabeth and Mary Ann Murphy, Lessees, the N.S.W. Fresh Food and Ice Company. The lease is not registered.	Small part of allotment 1 and part of the 1 acre 0 rood 10 perches reclaimed land granted to Richard Brooks.	Lease from 7th July, 1892, for 21 years, at £500 per annum, payable quarterly, on 7th October, January, April, and July. Lessees to pay the taxes and keep premises in same condition of repair as at commencement of lease, less wear and tear, and damage by fire, storm and tempest, or other inevitable accident, and to insure for £1,000 in the joint names of lessors and lessees. This lease includes that part of Special Lease No. 664, granted to the Misses Murphy, and expiring 30th June, 1899, which fronts the part of the Misses Murphy's land referred to. The rent of which special lease payable to Government is £100; whereof the part embraced in this lease is estimated at three-tenths and the rental thereof at £30; which amount the lessees are to pay to Government during the continuance of the special lease and are to renew said special lease during the continuance of their lease, from time to time. Provided that if Government at expiration of special lease require a higher rental for same the lessors shall be at liberty to abandon or refuse to renew said special lease, and after such abandonment or refusal this lease shall cease and determine as regards the special lease area, and the rent thereunder payable by the lessees shall be abated at the rate of £7 10s. per quarter; and if during the lease the special lease be resumed by Government or if the lessors be compelled by Government to remove the structures thereon; or if such special lease or any renewal thereof be otherwise determined by Government for any cause other than the breach or non-performance by the lessees of any of the covenants on their part herein contained, then, and in either of such cases, this lease shall cease and determine as regards the special lease area, and the rent payable thereunder shall be abated.	Special lease for 32½ perches, reclaimed land and old pile jetties, granted to the Misses Murphy from the 1st July, 1890, to 30th June, 1899, at £100 per annum. Said 32½ perches extend across the whole frontage of the Misses Murphy's property, whereof only a part is leased by the N.S.W. F. F. and Ice Co. the remainder being leased by Bernard Byrnes. NOTE. —Murphy's lease to the F. F. and Ice Co. purports to include the 2 perches described in this schedule and numbered 16.
18	The Misses Elizabeth and Mary Ann Murphy. Lessee, Bernard Byrnes. The lease is not registered.	Part of the 1 rood 10 perches reclaimed land granted to Richard Brooks.	The lease is for two pieces of land, from 7th July, 1892, for 21 years, at £650 per annum (being a clear rental of £600, and £50, the one half the rent payable under special lease hereinafter mentioned), part of which is held in fee-simple and part under special lease No. 664 for nine years, expiring 30th June, 1899, at the quarterly rental of £100; and the proportionate part of the area held under said special lease, embraced by this lease, is estimated at one-half the total rent therein—viz., £50. The rent is payable monthly—£54 3s. 4d. on 7th of each month. Lessee is to pay all rates and taxes, and to keep in repair; fair wear and tear, and damage by fire, storm, tempest, or other inevitable accident excepted; to insure buildings, &c., for £500, and use piece held under special lease for wharf and jetty only. Provided that if the half of such rent of special lease renewed at desire of lessee shall be more than £75 per annum, the lessors shall not be bound to pay more than £75 per annum of such rent, but the remaining portion of such rent shall be payable by the lessee, and shall be added to the clear yearly rental of £600. If said special lease be resumed by Government, or if lessors be obliged by Government to remove the structures thereon, or if the special lease or any renewal thereof be determined by Government for any cause other than the breach or non-performance by the lessee of any of the covenants on his part therein contained, then, and in either of such cases, this lease shall cease and determine.	Special lease for 32½ perches reclaimed land and old pile jetties, granted to the Misses Murphy from 1st July, 1890, to 30th June, 1899, at £100 per annum. Said 32½ perches extend across the whole frontage of the Misses Murphy's property, whereof only a part is leased by Bernard Byrnes, the remainder being leased by the New South Wales Fresh Food and Ice Company. (Limited).
19	The City Council .....	.....	Liverpool-street.	

No. on Plan.	Name of Freehold and Lessees.	Allotment No.	Description and Dimensions of Freehold or other Tenure; also Dates and Terms of Leases.	Dates, Terms, and Conditions of Special Leases under the 89th section for Wharfs and Jetties.
SECTION 1.				
20	Robert Chadwick Lessee, Bernard Byrnes. The lease is not registered.	Reclaimed land. Part of the 1 acre and 8 perches granted to Henry Mace, and part of the 21½ perches granted to J. H. Williams.	Chadwick's title, under the Real Property Act, embraces an unauthorised reclamation. I presume it will be held that the title to same still vests in the Crown. The lease is for 10 years, from 1st October, 1891, at £830 per annum, payable monthly—£69 6s. 8d.; after that term a monthly tenancy only; lessees to pay rates and taxes. There were no improvements upon the land at commencement of the lease. The lessee is to keep premises in order, less wear and tear. Any improvements made upon the land shall, at the end of the lease, be the property of the landlord. The area is 1 rood 32¼ perches.	Special lease of 1¼ perches, occupied by a jetty and coal-shoot, granted to Bernard Byrnes, from 1st January, 1891. Annual lease, terminable upon three months' notice being given, in writing, by the Government. Rent, £15 per annum. Special lease of 3¼ perches, occupied by a jetty, recommended by the Land Board, under an annual tenure, with six (6) months' notice on non-renewal, at £20 per annum. This case was dealt with by the Land Board on 10th January, 1893, and has not yet (14th January, 1893) reached the Minister.
21	Robert Chadwick. Lessees, The N.S.W. Fresh Food and Ice Co. (Ltd.), H. Paterson, Manager. The lease is not registered.	Reclaimed land, part of the 1 acre and 8 perches granted to Henry Mace, and part of the 21½ perches granted to J. H. Williams, also part of the 2 roods 14¾ perches granted to G. T. Pickering.	Chadwick's title, under the Real Property Act, embraces an unauthorised reclamation. I presume it will be held that the title to same still vests in the Crown. The lease is for 29 years from 1st January, 1893. The rental for the first 10 years is £800 per annum; for the second 10 years, £900 per annum; and £1,000 per annum for the remainder of the term. Quarterly payments. There is no building covenant. The Manager of the N. S. W. F. F. & I. Co. informed me that the buildings upon the area on 1st January, 1893, were worth about £500; he also supplied me with the above-mentioned particulars. The lease is not yet formally drawn up, but I had a sight of the approved diagram showing the area.	
22	Elizabeth Bell and Richard Holdsworth, trustees of Henry Bell, deceased. Lessees, The N.S.W. Fresh Food and Ice Co. (Ltd.)	Part of allotment 1 and of the reclaimed area fronting same, 1 acre 2 roods 5 perches, granted to James Ryan.	Lease for 33 years from 1st January, 1889, at £1,000 per annum; £250 per quarter, without any reduction or abatement whatsoever for rates or taxes, except the lessors' income or land tax. The lessees to expend £1,000 in buildings (to be approved by the lessors) upon the land within two years from commencement of lease, to keep them in good order, and insured to their full insurable value during the term.	NOTE.—The value of the buildings erected exceeds that above specified very considerably.
23	N.S.W. Government. Lessee, the late T. S. Mort. Lease assigned to the New South Wales Fresh Food and Ice Co. (Ltd.)	Reclaimed land and a small piece of Darling Harbour.	Leased by John Rac, as Commissioner for Railways, to T. S. Mort, for fifty (50) years from 1st July, 1874, at £1 per annum: Provided that the premises are to be used only for his (Mort's) business of a carcass butcher, &c., and freezing meat, &c., for export from the Colony, and that the revenue for freight and railway charges for carcasses, &c., from Lithgow Valley and other places on the line of railway to these premises shall yearly and every year during the said term of 50 years amount to not less than £500. The residue of the term of this lease was assigned on 7th November, 1889, to the New South Wales Fresh Food and Ice Co., Ltd., for 10s.	

21

No. 21.

The Under Secretary for Public Works to The Under Secretary for Lands.

Sir,

Sydney, 8 November, 1892.

With reference to your letter of the 7th ultimo, in regard to the proposed reclamation of Darling Harbour above Pymont Bridge, I am directed to inform you that to allow of a reliable estimate being formed of the value of the interests which would be affected by the suggested reclamation, it is considered that all the information asked for is absolutely necessary, and the Secretary for Public Works has therefore authorised the expenditure required for obtaining the desired information.

I have, &c.,
J. BURLING.

No. 22.

The Under Secretary for Lands to The Under Secretary for Public Works.

Sir,

Sydney, 15 April, 1893.

Reverting to your letter of the 3rd November last, relating to the proposed reclamation of Darling Harbour above Pymont Bridge, I have the honor to inform you that the service in connection therewith has now been carried out, and I am to request that, as an expenditure of about £71 has been involved, you will be good enough to cause steps to be taken to have the expense incurred recouped to this Department.

I have, &c.,
WM. HOUSTON.

Mr. Darley.—B.C., 17/4/93.

No. 23.

The Engineer-in-Chief for Harbours and Rivers to The Under-Secretary for Lands.

Sir,

Sydney, 24 April, 1893.

I have the honour to acknowledge the receipt of your letter of the 15th instant respecting the expenditure incurred by your Department in connection with the proposed reclamation of Darling Harbour above Pymont Bridge, and in reply beg to inform you that if you will kindly send the account to this branch it shall receive attention as soon as possible.

I have, &c.,
C. W. DARLEY.

No. 24.

The Under Secretary for Lands to The Under Secretary for Public Works

Sir,

Sydney, 10 May, 1893.

Referring to your letter of 24th ultimo, I have the honor to transmit herewith a voucher for £71 for cost of investigation, by Mr. Perdrian, salaried surveyor of this Department, of water frontage properties on the eastern side of Darling Harbour, as requested therein, and to ask that you will be so good as to have the same certified and passed for payment in the manner indicated on the voucher.

I have, &c.,
WM. HOUSTON.

No. 25.

Memos. from Mr. C. O'Neill to The Under Secretary for Works.

8 February, 1893.

Re Darling Harbour.—Again pardon me for troubling you, but as I have already explained to you, the matter is very urgent and most important to me to-day. I will call again before 1 o'clock.

CHARLES O'NEILL.

16 Elizabeth-street, Sydney, 9 February, 1893.

Re Darling Harbour.—Excuse me for again reminding you of the pressing urgency of my business. I will call on you later on, when I do trust you will have matters arranged.

CHARLES O'NEILL.

Sydney, 10 February, 1893.

Re Darling Harbour Reclamation.—Kindly bear in mind that my scheme was the only one ever laid before Mr. Lyne, and it was my plan and scheme that were sent to Mr. Darley to report upon. I am, therefore, fully and justly entitled to consideration. The reclamation of 40 acres of land would be worth an enormous amount to the Government, even after paying all expenses, besides saving the cost of the bridge, £250,000; besides the public are all in favour of the scheme.

CHARLES O'NEILL.

Put with the other papers. I have told Mr. O'Neill that we cannot recognise any claim.—J.B., 22/2/93.

No. 26.

Memorandum from The Under Secretary for Public Works to The Engineer-in-Chief for Harbours and Rivers.

Utilisation of Head of Darling Harbour.

Sydney, 2 March, 1893.

THE Minister has directed that the sum of £5 be paid to Mr. O'Neill for the trouble he has taken in preparing a design for the utilization of the head of Darling Harbour.

Will Mr. Darley please see that this is paid at once.

J.B.

No. 27.

Minute by The Minister for Public Works.

Sydney, 1 June, 1893.
 Mr. O'NEILL called upon me to-day and complained that the small amount given him for his report on the proposal to drain the head of Darling Harbour was not nearly sufficient for the labour spent upon it. I am disposed to give him a further sum of £5, and this may be done. W.J.L.

Mr. Darley.—J.B., 1/6/93. Seen; pay from Advance. I never saw his report, however. I have only seen a bit of a plan with a few notes on it.—C.W.D., 1/6/93. He prepared a plan—gave verbal explanation to the Minister.—J.B., 2/6/93.

No. 28.

Mr. B. C. Simpson to The Secretary for Public Works.

Sir,

27 December, 1893.

Some weeks ago I had the honor of calling on you with reference to a scheme prepared by Mr. Cardew and myself for a roadway across Darling Harbour, which would, in my opinion, be of value to your Department as a permanent and very economical solution of the Pyrmont Bridge difficulty. The design, a drawing of which is now prepared, is also applicable to other bridges (especially the Glebe Island Bridge) which must very soon be repaired or reconstructed.

Both Mr. Cardew and I have given considerable time and care to the preparation of the plans and estimates, under the idea that if the officers of your Department to whom you may refer this scheme concur with me as to its value some arrangement may be made by which it may be utilized for the public benefit, and we may be recompensed for our professional services in this matter. And I submit for your consideration the following alternative arrangements by which these ends may be secured:—

- (1.) That if the design should be approved by you, Mr. Cardew and I should be allowed to carry out the works for the Department, under the supervision of the departmental officers, and that we should be paid the ordinary professional charges thereon.
- (2.) That if you approve of the design, but prefer that the works should be carried out by the officers of your Department, the sum of £1,000 sterling should be paid to Mr. Cardew and myself for the plans and estimates furnished.
- (3.) That the Government should support a Bill, to be promoted in Parliament by Mr. Cardew and myself, empowering us to construct these works and to charge tolls on the roadways so constructed; the works to become the property of the Government when the aggregate amount of the tolls received shall amount to the total cost of the works, including professional charges and 6 per cent. interest on capital to the date of repayment, and 10 per cent. added as profit to those who shall provide the capital for the proposed works. But failing the passage of this Bill, that either arrangements No. 1 or 2 shall be adopted.

If you can give me an assurance that *on your being satisfied as to the value of the proposed scheme*, one or other of the arrangements herein stated will be carried out, I shall be glad to refer the scheme with plans, estimates, &c., to you, or to any officer of your Department, for your and their information—on the understanding that if it is not considered worth adoption, the Department shall be in no way bound to accept it.

I have, &c.,

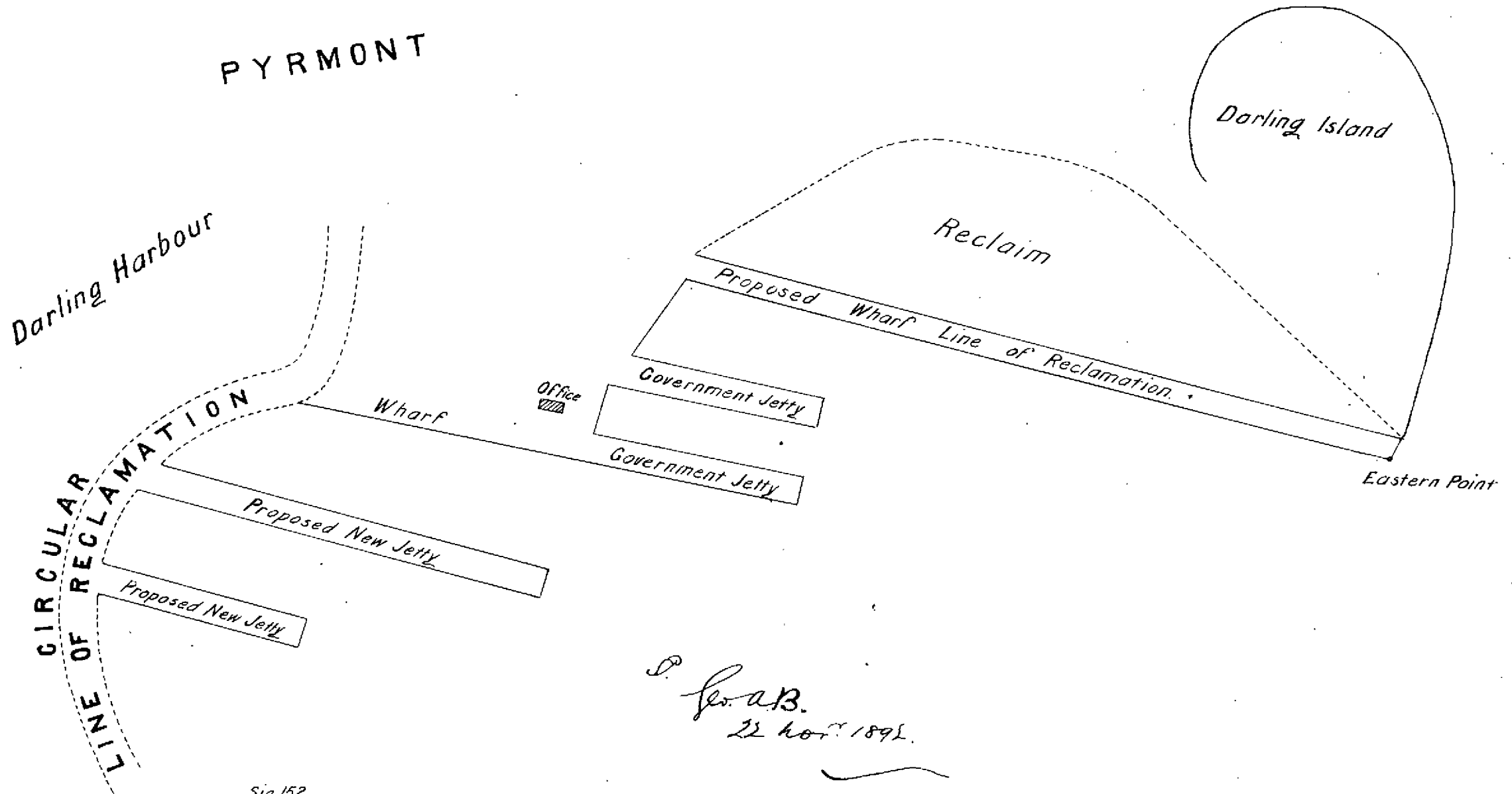
B. C. SIMPSON.

Submitted to Minister.—J.B., 28/12/93. I think this proposal has been considered long since, but should like Mr. Darley to report upon it.—W.J.L. Mr. Darley.—B.C., 9/1/94. I have reported fully on several schemes for embanking and bridging across Darling Harbour, but as Mr. Simpson does not unfold the nature of his scheme I cannot say whether it is similar to any I have reported on.—C.W.D., 12/1/94. The Under Secretary for Public Works. Submitted to Minister as to what further steps, if any, should be taken herein.—J.B., 15/1/94. A motion may be prepared for submission to Parliament for the best means of connecting the east with the western side of Darling Harbour.—W.J.L., 22/1/94.

[One Plan.]

APPENDIX A

PYRMONT



Sig 152.

S. J. A. B.
22 Nov 1892.

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

HARBOUR AND RIVER IMPROVEMENTS.
(RETURN RESPECTING.)

Ordered by the Legislative Assembly to be printed, 16 May, 1894.

RETURN to an *Order* made by the Honorable the Legislative Assembly of New South Wales, dated 26th April, 1894, That there be laid upon the Table of the House,—

“ A Return showing the amount of money spent on harbour and river improvements (independent of dredging) at the following places respectively:—The Tweed, The Brunswick, The Richmond, The Clarence, The Bellinger, The Nambucca, The Macleay, The Hastings, Camden Haven, The Manning, Cape Hawke, The Hunter, and Lake Macquarie.”

(Mr. Young.)

RETURN showing the amount of money spent on harbour and river improvements (independent of dredging) at the following places respectively:—The Tweed, The Brunswick, The Richmond, The Clarence, The Bellinger, The Nambucca, The Macleay, The Hastings, Camden Haven, The Manning, Cape Hawke, The Hunter, and Lake Macquarie.

	£	s.	d.		£	s.	d.
Tweed River	17,033	4	11	Camden Haven	1,257	4	6
Brunswick River	1,165	2	8	Manning River	8,623	15	5
Richmond	129,617	7	1	Cape Hawke	1,309	16	1
Clarence	275,661	3	10	Hunter River	651,148	6	9
Bellinger	10,461	10	2	Lake Macquarie... ..	94,063	2	2
Nambucca	2,175	1	10				
Macleay	148,388	1	10	Total	£1,343,478	12	1
Hastings	2,574	15	3				

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

PUBLIC WORKS ACT OF 1888.
(RESUMPTION OF LAND FOR RECLAMATION WORKS, ROSELLE BAY.)

Ordered by the Legislative Assembly to be printed, 28 February, 1894.

**NOTIFICATION OF RESUMPTION OF LAND UNDER
THE "PUBLIC WORKS ACT OF 1888," 51 VICTORIA
No. 37.**

NEW SOUTH WALES, } Proclamation by His Excellency The
to wit. } Right Honourable Sir ROBERT WILLIAM
(L.S.) } DUFF, a Member of Her Majesty's Most
R. W. DUFF, } Honourable Privy Council, a Knight
Governor. } Grand Cross of the Most Distinguished
Order of Saint Michael and Saint George,
Governor and Commander-in-Chief of
the Colony of New South Wales and its
Dependencies.

WHEREAS I, Sir ROBERT WILLIAM DUFF, the Governor aforesaid, with the advice of the Executive Council, have directed that a certain public work, that is to say, Reclamation Works on the western side of Roselle Bay, in the said Colony, the estimated cost of which does not exceed twenty thousand pounds, shall be carried out under the provisions of the "Public Works Act of 1888," as an authorised work by the Minister for Public Works as Constructing Authority; and that the lands described in the Schedule hereto, which are in my opinion required for carrying out the said work, shall be acquired by taking the same under the "Lands for Public Purposes Acquisition Act," as adopted by the "Public Works Act of 1888": Now, therefore, I, the said Governor, with the advice aforesaid, in pursuance of the "Public Works Act of 1888," do declare by this notification, to be published in the Government Gazette and in one or more newspapers published or circulated in the Police District wherein the said lands are situated, that the Crown Land comprised within the descriptions set forth in the Schedule hereto has been appropriated, and the private property within such descriptions has been resumed, for the public purpose aforesaid, to the intent that upon the publication of this notification in the Gazette, the said lands described in the said Schedule hereto shall forthwith be vested in the said Constructing Authority as a corporation sole on behalf of Her Majesty, for the purposes of the said "Public Works Act of 1888," for an estate in fee simple in possession, freed and discharged from all trusts, obligations, covenants, interests, contracts, charges, rates, rights-of-way, or other easements whatsoever; and to the further intent that the legal estate therein, together with all powers incident thereto or conferred by the said last-mentioned Act, shall be vested in the said Constructing Authority as a Trustee: And I declare that the following is the Schedule of lands hereinbefore referred to:—

SCHEDULE.

1st. All that piece or parcel of land situate in the parish of Petersham, county of Cumberland, and Colony of New South Wales, being part of section 24 of a subdivision of a grant of

290 acres to George Johnstone, known as the North Annandale Estate, and comprised in certificate of title, registered volume 1,046, folio 22: Commencing on the south-eastern side of Taylor-street at its intersection with the north-eastern side of a drain reserve 5 feet wide separating lots 40 and 41 of the said section 24; and bounded thence by part of the south-eastern side of Taylor-street aforesaid bearing north-easterly 1 chain 81 links; thence by a line bearing south 21 degrees 50 minutes east 1 chain 31 $\frac{1}{8}$ links; thence by a line bearing south 33 degrees 56 minutes east 1 chain 12 $\frac{1}{2}$ links to the north-eastern side of the aforesaid drain reserve 5 feet wide; and thence by that side of that drain reserve bearing north-westerly to the point of commencement,—containing 18 perches or thereabouts, and said to be in the possession and occupation of the Sydney Freehold Land, Building, and Investment Company.

2nd. All that piece or parcel of land situate as aforesaid, being part of section 23a of the aforesaid subdivision: Commencing on the north-western side of Taylor-street at its intersection with the north-eastern boundary of lot 39 of the said section 23a; and bounded thence by the north-eastern boundary of the said lot 39 bearing north-westerly 1 chain 81 $\frac{1}{2}$ links to the south-eastern side of a lane 20 feet wide; thence by part of that side of that lane bearing north-easterly 4 chains 9 $\frac{1}{2}$ links; thence by a line bearing south 21 degrees 50 minutes east 3 chains 36 $\frac{1}{16}$ links to the north-western side of Taylor-street aforesaid; and thence by part of that side of that street bearing south-westerly 1 chain 32 $\frac{1}{2}$ links to the point of commencement,—containing 1 rood 38 perches or thereabouts, and said to be in the possession and occupation of the Sydney Freehold Land, Building, and Investment Company.

3rd. All that piece or parcel of land situate as aforesaid, being part of lots 57 to 63 inclusive of section 23 of the aforesaid subdivision: Commencing on the south-western side of Piper-street at a point bearing south-easterly and distant 1 chain 38 $\frac{1}{16}$ links from its intersection with the south-eastern side of Nelson-street; and bounded thence by a line bearing south 21 degrees 50 minutes east 1 chain 44 $\frac{1}{16}$ links to the north-western side of a lane 20 feet wide; thence by that side of that lane bearing south-westerly 55 $\frac{1}{16}$ links to the north-east corner of lot 56; thence by part of the north-eastern boundary of that lot bearing north-westerly 45 links; and thence by a line bearing northerly, to the point of commencement,—containing 10 perches or thereabouts, and said to be in the possession and occupation of the Sydney Freehold Land, Building, and Investment Company.

4th. All that piece or parcel of land situate as aforesaid, being part of the aforesaid subdivision: Commencing on the south-western side of Rose-street, at a point bearing south-easterly and distant 2 chains 12 $\frac{1}{2}$ links from its intersection

with the south-eastern side of Nelson-street; and bounded thence by part of the south-western side of Rose-street aforesaid bearing south-easterly $92\frac{3}{4}$ links to land resumed for tramway purposes, notified in Gazette, 24th March, 1891; thence by part of the south-western boundary of that land bearing south-easterly 1 chain $93\frac{2}{5}$ links; thence by a line bearing south 36 degrees 52 minutes west 1 chain $39\frac{1}{2}$ links; thence by a line bearing south 24 degrees 1 minute west 6 chains $72\frac{1}{10}$ links to the south-eastern side of a lane 20 feet wide; and thence by that side of that lane bearing north-easterly 9 chains $40\frac{2}{10}$ links, to the point of commencement,—containing 3 roods 31 perches or thereabouts, and said to be in the possession and occupation of the Sydney Freehold Land, Building, and Investment Company.

5th. All that piece or parcel of land situate as aforesaid, being part of the aforesaid subdivision: Commencing on the south-western side of Rose-street at a point bearing south-easterly and distant 4 chains 34 links from its intersection with the south-eastern side of Nelson-street; and bounded thence by part of the south-western side of Rose-street aforesaid bearing south-easterly $58\frac{1}{10}$ links; thence by a line bearing south 36 degrees 52 minutes west $52\frac{3}{4}$ links to land resumed for tramway purposes, notified in Gazette, 24th March, 1891; and thence by part of the north-eastern boundary of that land bearing north-westerly $60\frac{1}{2}$ links, to the point of commencement,—containing $2\frac{3}{10}$ perches or thereabouts, and said to be in the possession and occupation of the Sydney Freehold Land, Building, and Investment Company.

6th. All that piece or parcel of land situate as aforesaid, being part of the aforesaid subdivision: Commencing on the south-eastern side of Nelson-street at a point bearing north-easterly and distant 4 chains $54\frac{1}{2}$ links from its intersection with the north-eastern side of Rose-street; and bounded thence by part of the south-eastern side of Nelson-street aforesaid bearing north-easterly $93\frac{2}{5}$ links; thence by a line bearing south 67 degrees 52 minutes east 1 chain $7\frac{1}{2}$ links; thence by a line bearing south 47 degrees 53 minutes east 6 chains $27\frac{3}{4}$ links; thence by a line bearing south 36 degrees 52 minutes west 2 chains $44\frac{1}{2}$ links to the north-eastern side of Rose-street aforesaid; thence by part of that side of that street bearing north-westerly 1 chain $61\frac{1}{10}$ links to land resumed for tramway purposes, notified in Gazette, 24th March, 1891; thence by the south-eastern and north-eastern boundaries of that land, being lines bearing north-easterly 2 chains $93\frac{3}{4}$ links,

north-westerly 2 chains $83\frac{3}{4}$ links, and again north-westerly 1 chain $52\frac{3}{4}$ links, to the point of commencement,—containing 3 roods $32\frac{3}{4}$ perches or thereabouts, and said to be in the possession and occupation of the Sydney Freehold Land, Building, and Investment Company.

7th. All that piece or parcel of land situate as aforesaid, being part of the aforesaid subdivision: Commencing on the north-western side of Nelson-street, at its intersection with the north-eastern side of The Crescent; and bounded thence by part of the north-western side of Nelson-street aforesaid bearing north-easterly 1 chain $11\frac{1}{10}$ links; thence by lines bearing north 67 degrees 52 minutes west 5 chains $63\frac{1}{10}$ links and north 16 degrees 9 minutes west 5 chains $33\frac{3}{4}$ links to the north-eastern side of The Crescent aforesaid; and thence by part of that side of The Crescent bearing generally south-easterly, to the point of commencement,—containing 2 roods 28 perches or thereabouts, and said to be in the possession and occupation of the Sydney Freehold Land, Building, and Investment Company.

8th. All that piece or parcel of land situate as aforesaid, being part of the aforesaid subdivision: Commencing on the south-eastern side of Johnstone-street at its intersection with the north-eastern side of The Crescent; and bounded thence by part of the south-eastern side of Johnstone-street aforesaid bearing north-easterly $85\frac{1}{2}$ links; thence by a line bearing south 18 degrees 38 minutes east 4 chains and $\frac{1}{10}$ of a link; thence by a line bearing south 38 degrees 54 minutes west 67 links to the north-eastern side of The Crescent aforesaid; and thence by part of that side of The Crescent bearing generally north-westerly, to the point of commencement,—containing $35\frac{3}{4}$ perches or thereabouts, and said to be in the possession and occupation of the Sydney Freehold Land, Building, and Investment Company.

In witness whereof I have hereunto set my Hand, and caused the Great Seal of the Colony to be hereto affixed, at Government House, Sydney, this seventeenth day of February, in the year of our Lord one thousand eight hundred and ninety-four, and in the fifty-seventh year of Her Majesty's Reign.

By His Excellency's Command,

WILLIAM JOHN LYNE.

GOD SAVE THE QUEEN!

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

WHARF AT LIME AND ERSKINE STREETS, SYDNEY.
(CORRESPONDENCE RESPECTING.)

Ordered by the Legislative Assembly to be printed, 2 May, 1894.

RETURN to an *Order* made by the Honorable the Legislative Assembly of New South Wales, dated 21st March, 1894, That there be laid upon the Table of this House,—

“ Copies of all papers, plans, reports, evidence, correspondence, minutes, and memoranda in connection with or having any reference to the property of Matthew Smith, situated at Lime and Erskine Streets, in the city of Sydney, together with copies of all communications between the Works Department and the Crown Solicitor subsequent to the papers printed under order of this House, dated 22nd February, 1892.”

(*Mr. McGowen.*)

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WHARF AT LIME AND ERSKINE STREETS.

No. 1.

Minute by The Secretary for Lands.

At the request of the Treasury, "pending certain inquiries," action has been delayed in this case.

Some further papers have now been received, wherein the Secretary for Lands is asked to approve of the leasing by the Treasury to the "Balmain Ferry Company (Limited)," for wharfage purposes, the Crown land situated at the foot of Erskine-street, which has been occupied by one M. Smith (whose freehold it adjoins) for a number of years.

It appears, however, from these papers, that the Company claim that the Treasury has already entered into a contract with them to lease the land, and that such contract was provisionally agreed to in April last, and concluded in September, while, in fact, Smith's Special Lease application for the land under the Crown Lands Acts, tendered by advice of the Department, was *sub judice*, and which is even now not disposed of.

The desire of this Department to deal with the case on its merits, and in view of the exceptional circumstances surrounding it, has possibly been defeated by the action of the Treasury, which has been prosecuted without either notice to this Department, or the nature of the negotiations pending with the Balmain Ferry Company being disclosed, during the progress of the correspondence.

As this Department is responsible for the proper administration of the law as it affects Crown lands, I conceive it to be my unavoidable duty to strongly protest against the course of action followed by the Treasury in this matter, which is a repetition of the proceedings in connection with wharves on the Parramatta River wherein the Treasury, without reference to this Department, leased to a Mr. Joubert certain Crown lands and wharves which had been previously applied for as Special Leases by the Borough Council of Hunter's Hill (and were being dealt with by the Local Land Board) from which the utmost confusion and grave complications have ensued.

So far, however, as the alleged contract is concerned, I submit that it is legally void, on the grounds that the Crown Lands Act of 1884 expressly provides that Crown lands shall not be sold or leased except under and subject to the provisions of that Act, and that the Treasury is not a competent authority to make a lease.

The question is now, what had best be done in the circumstances. Perhaps this Department should proceed with the matter in its own way after due notice to the Treasury of the illegality of its proceedings.

W.H., 28/1/92.

Will my honorable colleague, the Treasurer, be good enough to say how it comes that while this Department have refrained from dealing with this case at the request of the Treasury, they, the Treasury, should take upon themselves to apparently deal with these Crown lands outside the Crown Lands Act, which are the only channels through which a legal title can be created which would warrant the occupation of land of this character. I may point out to my honorable colleague that action of this kind on behalf of the Treasury is likely to lead to complications of a very serious character, to say nothing of the fact that the usurpation by his Department of the powers vested solely in the "Lands" is calculated to bring the officials of the two Departments into conflict, and must, in any case, tend to confusion. I should be glad if my honorable colleague would inform me what action the Treasury have taken in the matter up to the present, and how far the Government stand committed by the action of his Department.—H.C., 3/3/92. The Under Secretary for Finance and Trade, B.C., 7/3/92. Captain Jackson, 8/3/92.

No. 2.

Captain Jackson to The Under Secretary for Finance and Trade.

Sir,

Public Wharves Office, 10 March, 1892.

The New Balmain Ferry Company applied for a landing in Darling Harbour, and as the land in question was the only available and in every way suitable water-frontage belonging to the Government, and as it would be in the interest of the general public, I recommended it.

It was promised to the company by the two late Colonial Treasurers Mr. McMillan and Mr. Bruce Smith, on the strength of which promises the company are now constructing boats for this service. I beg most respectfully to suggest that the Minister for Lands be requested to cause this small water-frontage to be handed over to the Treasury for the purpose of constructing the ferry-landing, and all complication, I think, will cease.

I may mention that this land has for a number of years been leased at a nominal rental, I understand £10 per annum, and sublet to the Balmain Ferry Company at £510 per annum, which amount the company now pay.

I think it only right that the Government should have the benefit of this larger rental.

I have, &c.,

JOHN JACKSON,
Manager.

No. 3.

Précis, and Minute by The Colonial Treasurer.

Erskine-street Jetties.

In order to provide additional wharf accommodation at the foot of Erskine-street, and also to afford increased facilities for the passenger traffic at that place, Mr. McMillan resumed certain land on the north side of the abovenamed street, known as Cox's land.

It was also decided to erect new jetties for the Balmain Ferry Company. Just about the time this matter was being considered an application was received from the Balmain New Ferry Company for wharfage accommodation on the Sydney side. The Treasurer at once directed that the old company was

was not to be allowed a monopoly, and he accordingly inquired whether the new company could be provided for. Captain Jackson's reply was that this company's requirements could be conveniently met, as the Government had sufficient available land. Thereupon Mr. McMillan at once guaranteed the wants of the new company, without which it could not have completed its formation.

The land to which Captain Jackson referred was the reclamation on the south side of the street, occupied by Matthew Smith, and let (wholly or in part) to the old company. I feel that my position enables me to state absolutely that Mr. McMillan had not the faintest idea when he made the above promise that the carrying out of such would encroach, in any way, upon land held by the Lands Department, especially as such land, or a part of it, was already being used for ferry purposes.

Neither did it then occur to Captain Jackson to so advise the Treasurer, in consequence of which Mr. McMillan officially incurred obligations which would have been deferred had he understood that he was dealing with land not at his disposal, and not included within the resumption which this Department had effected.

As soon as the Treasury became aware that the land in question was not within the jurisdiction of its Minister, the Lands Department was advised of the action taken, and learned that there was a proposal to issue a lease of the land, which the Land Board found it could not recommend. At the hearing Captain Jackson stated, in evidence, that the land was required for ferry purposes.

Briefly, neither Mr. McMillan nor his immediate successor (Mr. Bruce Smith) had any knowledge that they were trenching on a matter within the province of the Minister for Lands. The Lands Department was advised as soon as the facts became known. The Treasury has a tenant, at a high rental, in the Balmain New Ferry Company, and, as it would be unquestionably advisable that the jetties at the foot of Erskine-street (in course of erection and proposed to be erected) should be under the control of the Marine Board, I recommend that Mr. See be asked to request Mr. Copeland to be good enough to waive his right to deal with the land in question, and thus permit of the satisfactory discharge, by the present Treasurer, of the obligations towards the Balmain New Ferry Company incurred by the late Government. This might be specially urged, as the accommodation for the last-named company is to be carried out almost at once, to admit of the new service commencing in about four months' time, in addition to which, as has already been pointed out, it is very probable that it will shortly be necessary in the interest of the travelling public to place these wharves under the provisions of the Navigation Act Further Amendment Act of 1879, in order that the regulations of the Marine Board may apply to them.

Some of the attached papers seem to indicate that Matthew Smith (or Mrs. Smith) is the owner of a certain block of land in Erskine-street, adjoining the unauthorised reclamation under notice. As this land was the subject of a grant for a Bethel Union Chapel (3/6/42), the Treasurer may think fit to suggest to the Minister for Lands the advisability of an inquiry into Smith's right of ownership, as the land does not now appear to be used for the purpose for which it was originally granted.

The Under Secretary. F.G., 18/3/92.

It will be seen from this *précis* that neither the late Colonial Treasurer, Mr. McMillan, nor the officers of the Treasury Department, intentionally usurped the functions or powers of either the Minister for Lands or of any officer of the Lands Department. That a misunderstanding occurred with respect to the land in question is admitted. As, however, it was promised, both by Mr. McMillan and Mr. Bruce Smith, to the Balmain New Ferry Company, perhaps the Secretary for Lands might be asked to waive his right to deal with the land referred to, otherwise serious complications and actions at law may ensue. It is not within the province of the Treasury to deal with the matter referred to in the concluding paragraph of this paper.—F.K., 18/3/92. Submitted.

I shall be glad if my honorable colleague will reconsider this question, and consent to the Treasury dealing with it.—JOHN SEE, 2/4/92. The Under Secretary for Lands.—F.K., 2/4/92.

In view of the above minute, I do not wish to push the matter further, but it should be pointed out that the conduct of Captain Jackson seems to be open to serious comment. That officer, although aware of the negotiations pending with the Balmain Ferry Company, appears to have withheld that information from the Local Land Board when giving his evidence *re* the special lease application of M. Smith and depositions. Smith's application has not yet been finally dealt with. I might further add that there is nothing whatever in the point brought forward in the concluding paragraph of the Treasury report of 18th March last, as by Act of Parliament, 15 Vic., the trustees of the Sydney Bethel Union were empowered to sell the Erskine-street site and buildings.—W.H., 13/5/92.

No. 4.

The Secretary, Balmain New Ferry Company (Limited), to The Under Secretary for Finance and Trade.

Balmain New Ferry Company (Limited), 9, Shelley-street, off Erskine-street,
Sir, Sydney, 22 March, 1892.

It is of most vital interest to this company that it may speedily be in receipt of an answer to our letter to the Treasurer of the 24th December, 1891.

Might I solicit the favour of your early attention to this matter.

I am, &c.

WILLIAM HENDERSON,
Secretary.

No. 5.

Minute by The Secretary for Lands.

THE Treasury asks this Department to waive its right of dealing with this question; but it may again be pointed out that for any other Department to deal with it would be illegal, and would probably lead to complicated lawsuits as, if the Treasury conferred a lease or title of any kind, it would be contrary to law. This Department also finds itself to a certain extent committed to Smith, who, being the owner of the Bethel

Bethel land, was the only person that could acquire a right to make a reclamation, and although Smith did not make this reclamation under the authority of law, yet he was in the act of rectifying this defect when the present complication arose, Smith having at that time, on the recommendation of this Department, lodged his application for a special lease, this fact being known at the time to Captain Jackson, who appears to have withheld this information from the Treasurer.

The question now is,—How can the difficulty be met without an injustice to either Smith or the New Ferry Company? Smith undoubtedly has the stronger claim, inasmuch as he reclaimed the land, and is now in possession. I should like to know what steps, if any, have been taken by the Treasury as to erection of wharves on land referred to.

I should also like to know whether the Treasury have committed themselves further than what is shown by letter of 17th September, 1891, to Secretary of New Ferry Company. Has any lease been granted, or have any exclusive rights to the new company been defined? I may again point out that Smith's application for a special lease is still pending, and that he, Smith, has subleased the wharfage rights to others.

Neither of the parties whose interests are being considered have any legal status, as the Treasury had no legal power to promise anything to the new company; while, on the other hand, Smith's application for special lease not having been as yet dealt with, he is at present in illegal occupation.

I think the only feasible way out of the difficulty would be to bring the two parties together, and endeavour to make an amicable compromise.

I should like to have the opinion of the Treasurer on this memorandum.

H.C., 14/5/92.

The Under Secretary for Finance and Trade, 19/5/92. Captain Jackson.—For report.—F.K.,
John Sec, 25/5/92.

No. 6.

J. Johnston, Esq., M.P., to The Secretary for Lands.

Sir, Parliament House, Sydney, 6 May, 1892.
I beg most respectfully to ask you when I will be supplied with the papers in connection with the wharfage *re* the Balmain New Ferry Company.

Yours, &c.,
JAMES JOHNSTON.

No. 7.

The Under Secretary for Lands to J. Johnston, Esq., M.P.

Sir, Lands Department, Sydney, 18 May, 1892.
In reply to your letter of the 6th instant, asking when the papers in connection with the desired wharfage accommodation for the New Balmain Ferry Company will be ready, I have the honor to inform you that information will be laid on the Table of the House when Parliament meets.
You can, however, see them upon application to this Department.

I have, &c.,
W. HOUSTON,
Under Secretary.
(*Per* R.H.D.)

No. 8.

The Secretary, Balmain New Ferry Company, to The Secretary for Lands.

Sir, The Balmain New Ferry Company (Limited), 9, Shelley-street,
Sydney, 16 May, 1892.
The late Government promised us wharf accommodation at Erskine-street for our ferry-boats, and we are informed that the matter rests with you to be concluded.

As our boats are nearly ready, we are desirous of being placed in possession of the landing, so that we can commence the penny-ferry service.

We append copy letter from the late Colonial Treasurer on the subject and an abridged prospectus of the Company.

I have, &c.,
WILLIAM HENDERSON,
Secretary.

[*Enclosure.*]

Sir, The Treasury, New South Wales, Sydney, 17 September, 1891.
I am directed to intimate that it has been arranged to place at the disposal of your company certain wharfage accommodation to be erected on the southern side of Erskine-street, subject to terms being agreed upon, which will be the same as those extended to the old company.

The particulars of the proposed jetties can be obtained from Captain Jackson, at the Circular Quay office, with whom you are invited to consult respecting the minor conveniences in the construction of the wharves.

I have, &c.,
F. KIRKPATRICK,
Under Secretary for Finance and Trade.

W. Henderson, Esq., Secretary, Balmain New Ferry Company.

No. 9.

No. 9.

The Under Secretary for Lands to The Secretary, New Balmain Ferry Company
(Limited).

Sir,

Lands Department, Sydney, 19 May, 1892.

With reference to your letter of the 16th instant, stating that the late Government had promised the Balmain New Ferry Company (Limited) wharf accommodation for its ferry boats, and, forwarding copy of letter from the Treasury Department, with a view to substantiating that statement, I have the honor, by direction of the Secretary for Lands, to inform you that the Treasury authorities had no legal power to grant any concession of the kind referred to, the matter being one entirely within the province of this Department to deal with.

The matter is, however, under consideration, and probably some equitable adjustment will be arrived at before long, when the Company will be informed of the decision.

I have, &c.,

W. HOUSTON,

Under Secretary

(Per R.H.D.)

No. 10.

Captain Jackson to The Under Secretary for Finance and Trade.

Sir,

30 May, 1892.

I beg to state that no further steps have, to my knowledge, been taken by the Treasury in connection with the above than what is shown in the letters of 17th September, 1891, and no actual lease has been granted to the Company referred to.

But I would point out that this Company have, on the strength of the promises made by the two late Treasurers, built, and are nearly ready to launch two steamers for the trade. Having this fact in view it seems to me that if the promise is not carried out the Company would have a good action at law.

The small portion of land in question is not used by the present ferry, only the waters fronting same. Perhaps the Hon. the Minister for Lands can see his way to allow the Treasury to carry out its promises to the Company, if the actual land is not interfered with, and the ferry be constructed something similar to what it is at present, the passengers landing on Erskine-street.

I think the suggestion made by the Hon. the Minister for Lands to bring the two parties together, and endeavour to make an amicable compromise, should be acted upon.

In justice to myself I beg to state that the fact of a lease for the land in question being applied for was known to me, but I in no way withheld the information from the Treasury. I beg to refer you to my letter, dated 7th November, 1890, herewith.

I have, &c.,

J. JACKSON.

Submitted for consideration.—J.F.M., 7/6/92. Mr. Johnston, M.P., and some of the officials of the Balmain New Ferry Company desire to see the Minister next week in this matter.—W.H., 8/6/92. Perhaps this suggestion might be adopted by my honorable colleague.—J.S., 31/5/92. The Under Secretary for Lands.—F.K., 1/6/92.

No. 11.

J. Johnston, Esq., M.P., to The Secretary for Lands.

Sir,

Parliament House, Sydney, 11 June, 1892.

I would deem it a great favour if you would kindly grant an interview with myself and the Secretary of the Balmain New Ferry Company at your own convenience. Mr. Houston knows the nature of the business.

Trusting you will receive this with favour.

I am, &c.

JAMES JOHNSTON.

No. 12.

The Under Secretary for Lands to J. Johnston, Esq., M.P.

Sir,

Department of Lands, Sydney, 14 June, 1892.

With reference to your letter of the 11th instant, I have the honor to inform you that the Secretary for Lands will be prepared to interview the Secretary of the Balmain New Ferry Company and yourself on Friday next, the 17th instant, at 11:15 a.m.

I have, &c.,

W. HOUSTON,

Under Secretary

(Per R.H.D.)

No. 13.

Deputation.

INTERVIEW between Mr. Copeland, Secretary for Lands, and Messrs. Johnston, M.L.A., Napier, and the Secretary of the New Balmain Ferry Company re wharf accommodation, Erskine-street.

Mr. Copeland: The papers are not clear whether the new wharf is built on this land occupied by Mr. Smith.

The Deputation: No; just the old premises.

Mr. Copeland: I understand the old Company have got a lease from the City Council. The land adjoining a street. I suppose the Council have a lease from the Government.

The Deputation: did not see how that could well be, as the land fronting the street was all timbered over. Mr.

Mr. Copeland : The papers are not quite so clear on the point as they might be. Mr. Perdriau, in his memo., says : That portion of the public wharf at the foot of Erskine-street marked "Balmain Ferry Waiting Room" on tracing is leased to the Ferry Company by the City Council. I understand the Company are paying Smith for the use of the water frontage of his land.

The Deputation : Yes ; something like £510 per annum.

Mr. Copeland : Show me on this tracing which wharf the old Company are using.

The Deputation indicated the wharf marked "Balmain Ferry Waiting Room."

Mr. Copeland : Is that under the City Council ?

The Deputation : No ; only the waiting-room. The Government are building a new wharf on the north side, and when that is finished the old Company will not want the present wharf. The old Company is being accommodated by these wharfs on the north side of Erskine-street.

Mr. Copeland : I shall require to know what arrangement the old Company has made with the Government for accommodation. If they have made satisfactory arrangements I don't see much difficulty in the matter. The case has got most fearfully complicated through both the Treasury and this Department dealing with the wharfs. I must consider Smith's interest in the matter. Smith has been in illegal occupation, but was now placing himself in legal occupation at the request of this Department, and Smith's interest must receive the fullest consideration, though as yet no lease had been granted to him.

The Deputation urged the Minister to take a run down in a cab and see the wharfs for himself.

Mr. Copeland said he could not well spare the time, and thought he could understand the position of the wharfs pretty well as well from the tracings. Before I do anything I must hear the version of the old Company. Who represents them ?

The Deputation : Captain Heselton. This new Company of ours represents 800 shareholders, and is largely the outcome of the late strike. We understand from Captain Jackson that the Treasury will be willing to let us have the wharf at the same terms as the old Company when they give up possession.

Mr. Copeland : Have you had any communication with Smith ?

The Deputation : No ; we don't know him in the matter at all.

Mr. Copeland : Unfortunately Mr. Perdriau (our surveyor) is out of town. I cannot give you any reply at present. I must consult Mr. Perdriau, and, if necessary, visit the place myself. In the face of Smith's claim, I must go into the matter more fully, and must have an assurance from the old Company that they are going to give up possession.

Mr. Copeland : Mr. Bruce Smith assumes that the two Companies use the one wharf.

The Deputation explained that, owing to the large amount of traffic, that was not practicable now. They had gone on with the building of their boats on the faith of the assurance given them by the Treasury.

Mr. Copeland : When do you think your boats will be ready to run ?

The Deputation : In about three months.

Mr. Copeland : I cannot say anything further. I must see Mr. Perdriau and consider the matter.
W.D.B.

This matter has been considerably complicated by the Treasury committing itself more or less to the new Company by way of assuring them wharfage accommodation. After giving the matter a good deal of attention, visiting the locality, I am of opinion that the only feasible way out of the difficulty, if faith is to be kept with the new Company, will be for the Treasury to obtain the resumption, through the Works Department, under the Land for Public Purposes Resumption Act, of that portion hatched blue on tracing 91-5,786, which forms an unauthorised reclamation by Matthew Smith, the owner of the land which this reclamation fronts. As the land in question was reclaimed without the authority of this Department, Smith's right to compensation must be a limited one, and of somewhat doubtful legality ; yet, I think it must be recognised, as the resumption will deprive him of his legal right to a water-frontage. If this course be adopted, I would recommend that a new wharf be constructed on the north, and adjoining the Pyrmont Ferry Wharf, the outer edge of the new wharf being about where the broken black line is shown. The steamers of the new Company would then be able to berth on the north side of the wharf, while the reclaimed land would provide room for offices, &c., and, having access to Erskine-street, would be independent of the back land, while a rent of £1 per week to the City Council for the use of their waiting-room would be saved. If the new Company is charged 12½ per cent. on value of land resumed and cost of wharf, the public funds would not suffer, while a shocking disgrace to our harbour frontage would be removed, and the new Company and those it represents would be accommodated, though they would have to make the best terms they could for the use of the old wharf and buildings while the new one was being constructed, for over these the Government have no control, except in respect to leasing the water-frontage to the owner of the back land, an application for which has already been made at the instigation of this Department. The old jetty is in a fearfully dilapidated state, and it would be very much in the public interest to carry out this resumption. I would also recommend my honorable colleague for Works to cover in the whole of the two new wharfs intended for the old Company, provided they agree to pay interest on cost of covering, as it would be a great convenience to the public to be sheltered from both sun and rain.—H.C., 20/6/92.

No. 14.

The Council Clerk, Balmain, to The Under Secretary for Lands.

Sir,

Town Hall, Balmain, 24 June, 1892.

I have the honor, by direction of the Mayor, to state that a large public meeting of the inhabitants of Balmain and Leichhardt was held in the Town Hall here last night, at which the Mayor was Chairman, and at which the following resolutions were unanimously carried :—

- 1st. That this meeting hears with regret and alarm that an attempt is being made by private speculators to obtain possession of the foreshores on the southern side of Erskine-street, Sydney, at a nominal rental, to the great injury and loss to the travelling public of Balmain and the western suburbs.

2nd.

2nd. That a deputation, consisting of the Mayors and Aldermen of Balmain, Leichhardt, Drummoyne, and Hunter's Hill, the Members for Balmain and Leichhardt, West Sydney, Canterbury, and Central Cumberland, and other gentlemen, wait upon the Honorable Minister for Lands to urge that no private individual or syndicate be allowed to obtain possession of the said land, and that it shall be in no way alienated, but shall be retained for ferry accommodation for the residents of Balmain and of the western suburbs.

In compliance with the above resolution, the Mayor will be glad to know when the Honorable the Minister for Lands will be pleased to receive the deputation referred to in the above resolution.

I have, &c.,

H. B. MACINTOSH,
Council Clerk.

No. 15.

The Under Secretary for Lands to The Council Clerk, Balmain.

Sir,

Department of Lands, Sydney, 4 July, 1892.

With reference to your letter of the 24th ultimo, I have the honor to inform you that the Secretary for Lands will receive the deputation from residents of Balmain and Leichhardt, in regard to the wharfage accommodation for the New Balmain Ferry Company, &c., on Friday next, the 8th instant, at 11.15 a.m.

I have, &c.,

W. HOUSTON,
Under Secretary
(Per R.H.D.)

No. 16.

Deputation.

DEPUTATION, consisting of Messrs. Johnston, Murphy, Clark, Darnley, and A. Kelly, M's.P., Wheeler (Mayor of Balmain), J. Sewell (Mayor of Drummoyne), Captain Napier (Chairman of New Balmain Ferry Company), and residents of Balmain, Leichhardt, Drummoyne, and western suburbs, re wharf accommodation, Erskine-street.

The deputation represented that they had come about a matter which had recently been brought before the Minister by another deputation—the want of wharf accommodation at the foot of Erskine-street, especially for the New Company. Since that interview a public meeting of residents of the above-mentioned suburbs had been held, at which statements were made that the land was likely to pass from the hands of the Government into the hands of private speculators, which would be, they held, greatly to the detriment of residents of such suburbs, who would lose in ferry accommodation. They were now here to urge that the Government should retain the land at the foot of Erskine-street in their own hands, and it should in no way be alienated. They had a deputation to the Minister for Works for a horse-ferry, and were told there was no land available, so they were surprised to hear this was Crown land.

There was amongst their number an old Registrar-General (Mr. Jaques), who was of opinion that the Crown had never parted with its title to these lands at the foot of Erskine-street.

The Minister (Mr. Copeland) said that it would perhaps save delay if he informed them that he had the facts before him, and could put it all pretty well in a nutshell. He had a report of the public meeting held, and copies of resolutions passed. He had gone into the matter, and was free to admit that the thing had been a muddle between the Lands and Treasury Departments, both Departments having dealt with the case, though he thought it was strictly a subject for this Department. The difficulty appeared to have been the mixing up of the land on the north side of Erskine-street with that on the south side. The late Government resumed Cox's land, and decided to erect two new wharfs there. One had been completed, and the other was not yet finished. He understood the late Government had given the old Company a monopoly of these two wharfs, but the papers before him did not show such a lease. As to the land on the south side, Mr. Smith had made an unauthorised reclamation, and was called upon by this Department to legalise his occupation. He applied for a special lease, and his application came before the Local Land Board, on the 6th of April, 1891. The Board then found as follows, viz. :—

We find that we cannot recommend that a lease be granted as desired; but if it be desired to condone or legalise existing trespass, we should recommend a lease for one year from 31st January, 1890 (the date when instructions for proceedings in trespass were issued), and we appraise the rent for that term at £100 (one hundred pounds).

That matter had gone no further, and had never been dealt with by him or his predecessor; he was, consequently, at a loss to know why the statement had been made at the public meeting as to the land passing into the hands of private speculators. He noticed at the meeting that a letter was read from Sir H. Parkes, in which he says that their request was in accord with the decision of the late Government. Well, the late Government had given a monopoly of all the land available to the old Company, and made no provision whatever for the new Company. They had granted a lease on the 11th of April, 1891, of the two wharfs to the old Company at £600 a year. This was afterwards, in October, 1891, reduced to £300 per year. Whatever Sir Henry Parkes might say, it was the Government of which he himself was the head which had granted the monopoly, if there was any. In his letter he also says the decision was not of a Department but of the New South Wales Government. That implies that it was a Cabinet matter. There was nothing to show amongst the papers that it had been brought before a Cabinet. The matter was dealt with by Mr. McMillan alone. The letter was utterly and entirely misleading. It made it appear that this Government was undoing something that the late Government had done for the benefit of the people, whereas the matter had never moved an inch since the Land Board's decision. He would read them the minute he had written on the 20th June last, after a visit to the locality. (*Read minute on Misc. Lease, 92-4,384.*) He could not say anything much else, except that while meetings were being held and deputations coming the matter was blocked. He hoped that when this deputation was over the matter would be allowed to rest, and the Department get to work on it.

Mr. Wheeler (Mayor of Balmain) said that they came on the broad principle that the lands should not be alienated. They could not know the secrets of the Department, and what was being done.

The

The Minister: What I complain of is, that some of the councils are inclined to think that the Minister, who is here to conserve the public interests, is always wishing to go against such interests.

Mr. Murphy, M.P., said that the first boat of the new Company would be ready for launching on the 30th instant, and there would be no accommodation at this end for her. She would have to lie up, so he hoped the matter would be pushed on.

The Minister: Is it necessary the old Company should have the use of both wharfs?

Mr. Murphy: No; but we do not wish to put that forward. We could use one side of the new wharf now being built.

The Minister thought there ought to be room on the south side. If they were satisfied with his action, and would undertake not to get up any more deputations, he would undertake to push the matter on.

Mr. Kelly asked if he was correct in understanding that the whole of the land on the south side was the property of the Government.

The Minister: Yes.

Mr. Kelly: Well, why did the late Government resume land on the north side at a cost of £60,000? He intended to bring this matter before Parliament as soon as it met.

The Minister thought that it would be found that the land was all required, and that the resumption was necessary.

The deputation asked whether the Government could give them any assistance in obtaining accommodation until the wharf was provided.

The Minister could only advise them to see the Treasury Department and ascertain what the terms of the lease to the old Company were, and if it allowed of their being given any accommodation. From personal inspection of the locality he thought there ought to be no difficulty in getting the use of the south side of the wharf.

WALTER D. BINGLER.

I should be glad if my hon. colleague, the Treasurer, would read my minute on next paper and give his approval, if favourable, to my proposal, and then have the papers forwarded direct to the Minister for immediate action, as the matter is very urgent.—H.C., 11/7/92.

Approved. I shall be glad if my hon. colleague for Works will have the necessary steps taken to resume.—J.S., 13/7/92. The Under Secretary for Public Works.—F.K., 13/7/92. Approved for resumption.—W.J.L., 21/7/92. M. W. Thompson,—Please take action at once.—J.B., 22/7/92. Very urgent. A tracing of the land to be resumed, showing lengths and bearings required.—A.B. (*pro* Land Valuer), 23/7/92. Will the Under Secretary for Lands please prepare me a plan showing the land to be resumed?—J.B., 25/7/92. Urgent. Probably Mr. Surveyor Perdriau should be instructed to transmit a plan and description of the area to be resumed.—27/7/92. The Chief Surveyor. The dimensions of the area, $4\frac{1}{2}$ perches, approved to be resumed, are now shown in red colour on the tracing with these papers.—S. PERDRIAU, Government Surveyor, 30/7/92.

No. 17.

The Under Secretary for Public Works to The Secretary for Lands.

Dear Mr. Copeland,

Department of Public Works, Sydney, 23 July, 1892.

Mr. Lyne yesterday approved of the resumption of the additional land in Erskine-street, and our land valuer has been instructed to lose no time in preparing the necessary notification. He is, however, asking for a tracing of the land to be resumed, showing the lengths and bearings.

We need this for our notification. Perhaps one of your officers can supply us with this at once.

Yours faithfully,
J. BARLING.

Balmain Steam Ferry Company, lease from 11th April, 1891, granted by Mr. McMillan, at £600 per annum, afterwards reduced from 1st October, 1891, to £300 per annum.

No. 18.

Memorandum from The District Surveyor to Mr. Surveyor Perdriau.

25 July, 1892.

PARTICULARS are required for the formal resumption of Matthew Smith's unauthorised reclamation at Darling Harbour.

The papers are not to hand. Probably Mr. Perdriau is acquainted with the case, and will be able to obtain such measurements as may be required for formal description.

E.T.

The dimensions of the area ($4\frac{1}{2}$ perches) approved to be resumed are now shown in red colour on the tracing with the papers, Misc. Lease, 92-5,139, which are forwarded herewith.—S. E. PERDRIAU, Government Surveyor, 30/7/92. The Chief Surveyor.

Tracing herewith (marked A) for the information of the Works Department. The Under Secretary, Department of Public Works.—J.D. (for U.S.), 6/8/92. Land Valuer.—D.C. McL., 8/8/92. Mr. Rac, for description.—A.B. (*pro* Land Valuer), 10/8/92. Description herewith.—F.S.R., 10/8/92. Will the Under Secretary for Lands kindly send this to Mr. Perdriau for examination?—J.B., 16/8/92. Very urgent. The Chief Surveyor, 18/8/92. Metropolitan Survey Office, 22/8/92. The draft notification has been examined and found correct. The papers may now be sent to Department of Works.—C.D. (for U.S.), B.C., Lands, 5/9/92. The Under Secretary for Public Works. Will the Crown Solicitor kindly initial, if correct, the draft notification herewith?—A.B. (*per* Land Valuer), 6/9/92. Draft notification initialled and returned together with the papers sent therewith.—E. A. SMITH, Crown Solicitor, B.C., 22/9/92. Draft notice of resumption and minute for Executive Council herewith.—A.B. (*pro* Land Valuer), 26/9/92. Under Secretary for Public Works.

No. 19.

No. 19.

Minute for The Executive Council.

Subject :—Recommending that the work of providing wharf accommodation at Erskine-street, Sydney, may be deemed an authorised work, and for the appropriation and resumption of land for the purposes thereof.

Department of Public Works, Sydney, 24 September, 1892.

THE Minister for Public Works applies for a direction that a certain public work, that is to say: Wharf accommodation at Erskine-street, Sydney, and for which public funds are lawfully available, the estimated cost of which does not exceed £20,000, may be carried out under the "Public Works Act of 1888," as an authorised work, and that in respect of the said work, he may be deemed the constructing authority.

The Minister for Public Works desires that the land mentioned in the Schedule hereto, so far as the same is Crown land, may be appropriated, and so far as the same is private property resumed for the purpose of carrying out the said work; also, if His Excellency, with the advice of the Executive Council, is of opinion that such land is required for the aforesaid public work, that it may be acquired by taking the same under the "Lands for Public Purposes Acquisition Act," as adopted by the "Public Works Act of 1888."

It is recommended to His Excellency the Governor and the Executive Council that the work above referred to, the estimated cost of which does not exceed £20,000, may be directed to be carried out under the provisions of the "Public Works Act of 1888," as an authorised work, by the Minister for Public Works, and that he may in respect thereof, be deemed the constructing authority; also that the land described in the Schedule hereto, which is required for carrying out the work referred to, may be directed to be acquired under the "Lands for Public Purposes Acquisition Act," as adopted by the "Public Works Act of 1888."

SCHEDULE.

All that piece or parcel of land situate in the city of Sydney, parish of St. Phillip, county of Cumberland, and Colony of New South Wales: Commencing on the southern boundary of Erskine-street at a point bearing west 15 degrees 30 minutes, south 1 chain 36 links from its junction with the western boundary of Lime-street; and bounded thence on the north-west by the southern boundary of Erskine-street bearing south 74 degrees 49 minutes west 24 feet 1½ inches; on the south-west by the present high-water mark of Darling Harbour, bearing south 24 degrees 37 minutes, east 52 feet 2 inches; on the south-east by the present high-water mark aforesaid, and a line bearing in all north 74 degrees 8 minutes, east 25 feet 6 inches; and on the north-east by a line bearing north 26 degrees 12 minutes, west 52 feet 1 inch, to the point of commencement,—be the said several bearings and dimensions all a little more or less, containing 4½ perches or thereabouts, and said to be in the possession of Matthew Smith.

WILLIAM JOHN LYNE.

The Executive Council advise that authority be granted for the construction of the wharf referred to, and that the land required for the same be acquired in terms of the said Act.—ALEX. C. BUDGE, Clerk of the Council.

Min. 9,753, 7/11/92. Confirmed, 15/11/92. Approved.—JERSEY, 7/11/92. Forwarded for the signature of His Excellency the Governor and the Great Seal of the Colony.—D.C.McL. (*per* U.S.), B.C., 16/11/92. The Principal Under Secretary. Sealed and submitted for His Excellency's signature. The Private Secretary.—C.W., P.U.S., B.C., 17/11/92. The Under Secretary for Public Works.—C.W., P.U.S., B.C., 21/11/92. The Land Valuer.—D.C.McL. (*pro* U.S.), B.C., 21/11/92. *Gazette*.—Dated 25th November, 1892. No. 818, page 9,317.

No. 20.

Messrs. Abbott and Allen to The Secretary for Public Works.

Sir,

14, Castlereagh-street, Sydney, 17 November, 1892.

We have ascertained that it is proposed by the Government to resume certain reclaimed lands in front of allotment No. 14, in the city of Sydney, Erskine-street, originally granted on the 3rd June, 1842, as a site for the Bethel Union Chapel, now owned by Mr. Matthew Smith.

On his behalf we must most emphatically protest against the resumption of this land which affords to him access by water to his land. We need hardly point out to you that the waters of the harbour are the public highways for the owners of land upon the shores, and that that highway should not be interfered with, unless there is an absolute necessity, and so far as we can gather the resuming of this land from Mr. Smith is for the purpose of giving it to a private company.

If the Government are determined upon taking the land for the purpose stated, then we would urge that they should resume the remainder of the land belonging to Mr. Smith extending back to Lime-street, as it is not of much value to him without the frontage.

In the case of any such resumption Mr. Smith is quite willing to accept payment for it in Funded Stock 4 per cent. bills.

We need hardly point out to you that our client will, at every point, contest the right of the Government to interfere with his frontage to the harbour. We shall be glad of an early reply.

We have, &c.,

ABBOTT AND ALLEN.

The land does not appear to be required so far as we are aware. The matter should, however, be dealt with by the Treasury.—J.B., B.C., 22/11/92. The Under Secretary for Finance and Trade.—This letter should, I think, be referred to the Minister for Lands.—F.K., 24/11/92. Approved.—J.S., 25/11/92. The Under Secretary for Lands.—F.K., 25/11/92.

Mr. Matthew Smith (*per* Messrs. Abbott and Allen) protests against the proposed resumption of Crown land fronting his freehold, and lying between it and the water of Port Jackson; and, further, gives notice of his intention to contest the "right of the Government to interfere with his frontage to the harbour." On this point I may invite the attention of the Honorable the Minister to the remarks contained in the decision of His Honor the Chief Judge in Equity, in the case of *Day v. Brunner*, N.S.W., L.R.,

vol. XII, Post. 3, page 166, which appear to apply directly to the present case, *i.e.*, so far as the legal position of Mr. Smith is concerned in any attempt to assail the Government in respect of the proposed resumption.

Messrs. Abbott and Allen's letter is submitted for the consideration of the Minister.—W.H., 21/12/92.

New South Wales Law Reports, 1891, vol. XII.—Case in Equity—*Day v. Bruncker*. Extract from the remarks on the decision of the Chief Judge in Equity:—"If Day without authority, reclaimed land on the foreshore of Darling Harbour, thereby rendering access to the water impossible without crossing over the reclaimed land, he has himself cut off the original access and pushed the water-frontage further away than it formerly was, and he cannot claim from the Government a right-of-way or easement, the necessity for which has been created solely by his own act."

Let former decision be given effect to.—H.C., 23/12/92. The Under Secretary for Public Works, 24/12/92.—R.H.D. (for the Under Secretary).

No. 21.

Précis.

Matthew Smith's unauthorised reclamation of foreshore.

MR. M. SMITH is the owner in fee of a piece of land at the foot of Erskine-street, with a frontage to Darling Harbour. On the water-front of this land Mr. Smith has without legal authority reclaimed the land and erected a wharf, from which latter it is said he has derived a handsome revenue.

When it was discovered that Mr. Smith was in illegal possession of the foreshore, he endeavoured to put himself right by making application (*ex post facto*) for permission to reclaim and purchase the land he had encroached upon, but this application, on the recommendation of the Harbours and Rivers Department, was refused, and the Minister for Lands determined to let the land by public auction. While, however, the matter was still under discussion the Treasury, without concert with the Lands, agreed to grant a lease of the site to the new Balmain Ferry Company, and so far committed the Government that they could not, with honor, recede from the position.

20/6/92.—Hereon Mr. Secretary Copland minuted, "The matter has been considerably complicated by the Treasury committing itself more or less to the new company, &c. &c., I am of opinion that the only feasible way out of the difficulty will be for the Treasury to obtain the resumption through the Works Department under the Land for Public Purposes Acquisition Act of that portion hatched blue in tracing, being an unauthorised reclamation by Matthew Smith, the owner of the land which this reclamation fronts. As the land in question was reclaimed without the knowledge of this Department, Smith's right to compensation must be a limited one, and of somewhat doubtful legality, yet, I think, it must be recognised, as the resumption will deprive him of his legal right to a water-frontage." Mr. Copland went on to request that the Treasury would read the above minute and, if he concurred, send the papers to the Minister for Works for immediate action in regard to resumption. The Treasurer concurred, and forwarded the papers to the Minister for Works for further action. Mr. Secretary Lyne formally approved of the resumption, and the reclaimed land was resumed accordingly by notice in the *Gazette*, dated 21st November, 1892.

The fact that it was proposed to resume the land became known to Mr. Smith, and per letter of 17/11/92, Messrs. Abbott and Allen wrote, on behalf of that gentleman, protesting against the resumption of the land which afforded access by water to his property, urging that the Government should resume the remainder of the land belonging to Mr. Smith, which would be of little value without frontage, and intimating that that gentleman would contest at every point the right of the Government to interfere with his frontage to the harbour.

The Under Secretary for Lands, in submitting his letter for the information of his Minister, pointed out that the case was on all fours with that of *Day v. Bruncker*, which was gained by the Government, and in regard to which the Judge, in giving judgment, said, "If Day, without authority, reclaimed the land on the foreshore of Darling Harbour, thereby rendering access to the water impossible without crossing over the reclaimed land, he has himself cut off the original access, and pushed the water-frontage further away than it formerly was, and he cannot claim from the Government a right-of-way or easement, the necessity for which has been created solely by his own act."

The Minister for Lands minuted, "Let former decision be given effect to." But it will be seen that the Minister's decision had already been acted upon on the resumption of the reclaimed land.

C.A.B., 9/1/93.

We have taken the land, and are in possession, I think, and as we have heard nothing further on the subject, I suggest we let it stand. Submitted that the papers be put away.—J.B., 6/6/93. Approved.—W.J.L., 17/6/93.

No. 22.

Mr. J. Lovatt to M. Smith, Esq., J.P.

Dear Sir,

88, Trafalgar-street, Annandale, 16 August, 1893.

With reference to your wharf at foot of Erskine-street, Sydney, called Bethel Wharf, I am willing to take a lease of it from you on the terms and amount agreed on between us, provided you guarantee me free ingress and egress to and from the wharf on the water-frontage. I make this stipulation, as I find there are at present certain obstructions immediately fronting the wharf in the shape of piles and moorings of steamers, boats, &c., which would render the wharf practically useless to me for business purposes unless permanently removed therefrom. Please let me know, as early as you can, whether you are prepared to do this. Please address answer to my private residence.

Yours, &c.,

JOHN LOVATT.

Captain Jackson for report.—F.K., 17/8/93. The water-frontage referred to in this letter has been resumed by the Government for ferry purposes, I beg to refer it to the Under Secretary of Works.—J.J., 18/8/93. The Under Secretary for Finance and Trade. The Under Secretary for Works.—F.K., 21/8/93.

Town

Town Grant.

Town of Sydney, parish of Saint Phillip, county of Cumberland, allotment No. 14 of section No. 55; bounded on the north by a line bearing east 15 degrees 30 minutes north 121 links; on the east by allotment No. 15, bearing north 15 degrees 30 minutes west 76 links; on the north by Erskine-street, bearing west 15 degrees 30 minutes south 136 links; and on the west by the Darling Harbour;—being the allotment promised by His Excellency Sir Richard Bourke, on 22nd September, 1834, as the site for the Bethel Union Chapel; being also the allotment advertised as No. 38 in the Government notice, 26th February, 1841.

No. 23.

Messrs. Abbott and Allen to J. F. Waller, Esq., Government Valuator.

Re Matthew Smith.

Dear Sir,

Audit Chambers, 14, Castlereagh-street, Sydney, 12 October, 1893.

In compliance with your request to Mr. Smith, to be supplied with evidence upon statutory declaration of the facts in connection with the removal of the old wharf at the foot of his property at the corner of Erskine and Lime Streets, in the city of Sydney, and showing that there was never any reclaimed area there, we beg to forward you herewith six declarations made by Messrs. Matthew and Henry Smith, J. S. McGowen, H. Whetton, G. F. Hobson, and B. J. Bishop, which we trust will be found satisfactory and sufficient for the purpose required.

As this is a very important matter to our client, we beg to request that you will lose no time in sending in your report, and we shall be glad to know when you have sent it in.

Yours, &c.

ABBOTT AND ALLEN.

[Enclosures.]

New South Wales, }
to wit.

I, MATTHEW SMITH, of Waterloo, in the Colony of New South Wales, do solemnly and sincerely declare as follows:—

(1.) I am the owner of a portion of land containing about 15½ perches, situate fronting Erskine and Lime Streets, in the city of Sydney, and extending to the original high-water mark of Darling Harbour, and have been such owner for about twenty-one years.

(2.) Until about the month of April last I was under the impression that my predecessors in title of the said land had effected what I thought was a reclamation of an area of about 4½ perches or thereabouts, extending into the water from the western boundary of my said land, and what I considered was such reclamation I then discovered consisted of nothing more than an old wharf composed of piles driven closely together, on the top of which wooden girders and planks had been fixed (some of the girders abutting on the stone retaining-wall forming the western boundary of my said land), and these planks had from time to time become covered with ashes and rubbish, the accumulation of years.

(3.) In the month of April last I employed men to remove the said wharf and planks and the ashes and rubbish that had accumulated on the top thereof, and whilst doing so some of the ashes and rubbish fell through the planks into the water below, which ashes and rubbish I caused also to be removed, of which there were about six cartloads.

(4.) When the top covering of the said wharf had been removed by my men, I then discovered that the underneath part of the wharf between the piles and my retaining-wall was vacant space, and that the waters of the harbour flowed in and out with the tide and washed against my said retaining-wall forming the western boundary of my said land.

(5.) I have never removed, nor caused to be removed, any land or earth in front of the retaining-wall forming the western boundary of my said land, and the place from whence I removed the said wharf is now in the same condition as it was when the same was removed.

(6.) I am now satisfied that there never was any reclamation effected outside the western boundary of my said land, and that what appeared to be such reclamation consisted of the old wharf or jetty with the ashes and rubbish on top thereof, as hereinbefore described.

And I make this solemn declaration conscientiously believing the same to be true, under and by virtue of the provisions of an Act of the Governor and Legislative Council of New South Wales, made and passed in the ninth year of the reign of Her present Majesty, intitled "An Act for the more effectual abolition of oaths and affirmations taken and made in various departments of the Government of New South Wales, and to substitute declarations in lieu thereof, and for the suppression of voluntary and extra-judicial oaths and affidavits."

M. SMITH.

Declared before me, at Sydney, this twelfth day of October, in the year of our Lord one thousand eight hundred and ninety-three,—

W. H. MOSELEY, J.P.

Dated 12th October, 1893.

Declaration of Matthew Smith,—

ABBOTT AND ALLEN.

New South Wales, }
to wit.

I, HENRY SMITH, of Redfern, in the Colony of New South Wales, do solemnly and sincerely declare as follows:—

(1.) I am a brother of Matthew Smith, who is the owner of a piece of land situate at the corner of Erskine and Lime Streets, in the city of Sydney.

(2.) I was present frequently whilst my brother's workmen were engaged in removing some wooden girders and planking on piles and ashes and rubbish on the top thereof, which formed an old wharf or jetty jutting out into the water from the retaining-wall, forming what I understand is the western boundary of my brother's said land.

(3.) Shortly after the work of removal began I looked down through a hole made by the men when removing the planking forming the floor of the old wharf and saw that the water of the harbour flowed in through the piles and washed up against the said retaining-wall, the space beneath the planking and between the retaining-wall and the piles on the outside was quite vacant, and except the ashes and rubbish which fell through the planking into the water whilst the planking was being removed, there was no earth or soil in the space beneath, and no sign of any land having been reclaimed there.

(4.) The whole structure from the retaining-wall outwards was removed by my brother's men; it was nothing more than an old wharf or jetty.

And I make this solemn declaration, conscientiously believing the same to be true, under and by virtue of the provisions of an Act of the Governor and Legislative Council of New South Wales, made and passed in the ninth year of the reign of Her present Majesty, intitled "An Act for the more effectual abolition of oaths and affirmations taken and made in various departments of the Government of New South Wales, and to substitute declarations in lieu thereof, and for the suppression of voluntary and extra-judicial oaths and affidavits."

H. SMITH.

Declared before me at Sydney, this twelfth day of October, in the year of our Lord one thousand eight hundred and ninety-three,—

W. H. MOSELEY, J.P.

Dated 12th October, 1893.

Declaration of Henry Smith,—

ABBOTT AND ALLEN.

New

New South Wales, }
to wit.

I, JAMES SINCLAIR MCGOWEN, of Redfern, in the Colony of New South Wales, do solemnly and sincerely declare as follows :—

(1.) In the month of April last I inspected Mr. Matthew Smith's property, situate at the corner of Erskine and Lime Streets, in the city of Sydney, and saw where the top of what apparently had been an old wharf jutting out into the water from the retaining-wall forming what I understand is the western boundary of Mr. Smith's land, had been shortly before removed; I saw two rows of old piles within about 15 feet of the said retaining-wall; between these piles from the outside and up to the retaining-wall, was clear vacant space, and the waters of the harbour flowed in and up against the said wall; there was no sign of any reclamation having been made there.

And I make this solemn declaration, conscientiously believing the same to be true, under and by virtue of the provisions of an Act of the Governor and Legislative Council of New South Wales, made and passed in the ninth year of the reign of Her present Majesty, intituled "An Act for the more effectual abolition of oaths and affirmations taken and made in various departments of the Government of New South Wales, and to substitute declarations in lieu thereof, and for the suppression of voluntary and extra-judicial oaths and affidavits."

JAS. S. MCGOWEN.

Declared before me, at Sydney, this twelfth day of October, in the year of our Lord one thousand eight hundred and ninety-three,—

W. H. MOSELEY, J.P.

Dated 12th of October, 1893.

Declaration of James Sinclair McGowen.

ABBOTT AND ALLEN.

New South Wales, }
to wit.

I HERBERT WHETTON, of Sydney, in the Colony of New South Wales, contractor, do solemnly and sincerely declare as follows :—

(1.) In the month of April last, my father contracted with Mr. Matthew Smith, the owner of certain property situate at the corner of Erskine and Lime Streets, in the city of Sydney, for the drawing up of some old piles which had formed part of an old wharf jutting out into the water from the retaining-wall, forming what I understand is the western boundary of Mr. Smith's property.

(2.) Under the said contract with Mr. Smith, I superintended the drawing up and removal of about eighty-five piles, and whilst so employed I could see clearly that the waters of the harbour flowed in through these piles, and washed up against the said retaining-wall on the western side of Mr. Smith's land, the space between the piles and the retaining-wall was quite vacant, and there was no sign of any land having been reclaimed within this space.

And I make this solemn declaration, conscientiously believing the same to be true, under and by virtue of the provisions of an Act of the Governor and Legislative Council of New South Wales, made and passed in the ninth year of the reign of Her present Majesty, intituled "An Act for the more effectual abolition of oaths and affirmations taken and made in various departments of the Government of New South Wales, and to substitute declarations in lieu thereof, and for the suppression of voluntary and extra-judicial oaths and affidavits."

HERBERT WHETTON.

Declared before me, at Sydney, this twelfth day of October, in the year of our Lord one thousand eight hundred and ninety-three,—

J. GREGG, J.P.

Dated 12th October, 1893.

Declaration of Herbert Whetton.

ABBOTT AND ALLEN.

New South Wales, }
to wit.

I, GEORGE THOMAS HOBSON, of Waterloo, in the Colony of New South Wales, labourer, do solemnly and sincerely declare as follows :—

(1.) In the month of April last I was employed by Mr. Matthew Smith to assist in removing some wooden girders and planking fixed on the top of piles forming part of an old wharf jutting out into the water from a retaining-wall, which, I understand, is the western boundary of Mr. Smith's land, situate at the corner of Erskine and Lime Streets, in the city of Sydney.

(2.) In order to get at the planking we had first to remove a lot of ashes and rubbish which had accumulated on the top of the planking, and upon removing the planking I saw the waters of the harbour washing up against Mr. Smith's retaining-wall, and between the planking and the water and the rows of piles supporting the planking was vacant space, the girders and planks were very old, and evidently had been there for many years, and the ashes and rubbish on the top must have taken years to accumulate.

(3.) I was also employed by Mr. Smith to slightly repair his retaining-wall, putting in a stone here and there, and patching it up.

(4.) Edward James Bishop was also employed by Mr. Smith in connection with the same work, and he and I worked together on the job.

(5.) There was no sign of any land having been reclaimed where this old wharf stood outside the retaining-wall.

And I make this solemn declaration, conscientiously believing the same to be true, under and by virtue of the provisions of an Act of the Governor and Legislative Council of New South Wales, made and passed in the ninth year of the reign of Her present Majesty, intituled "An Act for the more effectual abolition of oaths and affirmations taken and made in various departments of the Government of New South Wales, and to substitute declarations in lieu thereof, and for the suppression of voluntary and extra-judicial oaths and affidavits."

GEORGE HOBSON.

Declared before me, at Sydney, this twelfth day of October, in the year of our Lord one thousand eight hundred and ninety-three,—

W. H. MOSELEY, J.P.

Dated 12th October, 1893.

Declaration of George Thomas Hobson.

ABBOTT AND ALLEN.

New South Wales, }
to wit.

I, EDWARD JAMES BISHOP, of Waterloo, in the Colony of New South Wales, labourer, do solemnly and sincerely declare as follows :—

(1.) In the month of April last I was employed by Mr. Matthew Smith to assist in removing some wooden girders and planking fixed on the top of piles forming part of an old wharf, jutting out into the water from a retaining-wall, which, I understand, is the western boundary of Mr. Smith's land, situate at the corner of Erskine and Lime Streets, in the city of Sydney.

(2.) In order to get at the planking, we had first to remove a lot of ashes and rubbish which had accumulated on the top of the planking; upon removing the planking I saw the water of the harbour underneath, washing up against Mr. Smith's retaining-wall, and between the planking and the water and the rows of piles supporting the planking was vacant space; the girders and planks were very old, and evidently had been there for many years, and the ashes and rubbish on the top must have taken years to accumulate.

(3.) George Hobson was also employed by Mr. Smith in connection with the same work, and he and I worked together on the job.

(4.) There was no sign of any land having been reclaimed where this old wharf stood, outside the retaining-wall.

And

And I make this solemn declaration conscientiously believing the same to be true, under and by virtue of the provisions of an Act of the Governor and Legislative Council of New South Wales, made and passed in the ninth year of the Reign of her present Majesty, intituled "An Act for the more effectual abolition of oaths and affirmations taken and made in various departments of the Government of New South Wales, and to substitute declarations in lieu thereof, and for the suppression of voluntary and extra-judicial oaths and affidavits."

EDWARD JAMES BISHOP.

Declared before me, at Sydney, this twelfth day of October, in the year of our Lord one thousand eight hundred and ninety-three,—

W. H. MOSELEY, J.P.

Dated 12th October, 1893.

Declaration of Edward James Bishop,—

ABBOTT AND ALLEN.

No. 24.

Messrs. Abbott and Allen to J. F. Waller, Esq.

Re Matthew Smith.

Dear Sir,

Audit Chambers, 14, Castlereagh-street, Sydney, 18 October, 1893.

We are in receipt of your letter of yesterday's date. We do not remember anything being said on the subject of furnishing receipts for the payments made to the contractor for removing the wharf, but in any case we are satisfied to rely upon the declaration sent in to you. We should be extremely glad if you will deal with the matter at once.

Yours, &c.,

ABBOTT AND ALLEN.

No. 25.

The Land Valuer to M. Smith, Esq.

Dear Sir,

23 October, 1893.

Before proceeding any further in the matter of your land at the foot of Erskine-street, I would like to be quite clear on the following points:—

- (a) That you assert the water-frontage to your land is now as it always was, and that it was never interfered with by you by increasing or decreasing.
- (b) That the only structure in front of your land, and going out into the water was a wharf which existed for years, and previous to my purchasing the property, say twenty-one years ago.
- (c) That you contend the water-frontage to your land has been illegally obstructed by reason of certain piles which have been placed there preventing free water access to your land, or indeed access at all for steamers or boats of any size.
- (d) That all you desire is removal of the said piles, and free water access to your land, and an acknowledgment that the water-frontage is yours, and that you have not directly or indirectly interfered with your water rights (if any) as may be contained in the original grant.
- (e) That you do not desire the resumption either of your land or the alleged water to same, but simply desire to be left in peaceable enjoyment of the said land, and all water and other rights appertaining thereto.

When I get your reply I will at once attend to the matter.

Yours faithfully,

J. F. WALLER.

No. 26.

Messrs. Abbott and Allen to J. F. Waller, Esq.

Re Smith, Erskine-street property.

Dear Sir,

Audit Chambers, 14, Castlereagh-street, Sydney, 30 October, 1893.

Referring to your letter of the 23rd instant to Mr. Smith, and to our Mr. Allen's interview with you, we beg to state that, as to the points (a), (b), and (c), mentioned in your letter, we consider that they have been fully dealt with and established by the declarations previously supplied to you, and until Mr. Allen had seen you on the subject we were under the impression they comprised the only matter (namely, the establishing of our client's right to the water-frontage) you were called upon to report on.

With reference to points (d) and (e), having now seen Mr. Smith, and discussed these points with him, we are instructed to say that he claims to be acknowledged by the Crown as having the absolute, free, and uninterrupted right to and use of the water frontage to his land; such an absolute right as his predecessors in title were possessed of, and of which he has been deprived of, for about two years, including in such rights the right without charge to erect such a wharf as he may think fit. He also claims that all piles and other obstructions shall be removed by the Crown, and that he shall be compensated for the loss and expenses he has been put to in the meantime by the Crown's action in depriving him of his rights, and also in establishing his rights, and to state, further, that failing his being fully satisfied as above, he would prefer that the whole of his land be resumed by the Crown, in which case he would be prepared to forego his claim for compensation.

Please understand that this letter is without prejudice, and we shall be glad if you will deal with this matter without delay.

Yours, &c.,

ABBOTT AND ALLEN.

No. 27.

Minute by the Land Valuer.

Subject:—That Matthew Smith illegally reclaimed certain land, and then endeavoured to put himself right by making application to reclaim.

Department of Public Works, Valuation Branch, Sydney, 3 November, 1893.

Apparently, *vide* Abbott and Allen's letter of 17th November, 1892, Smith, at that date, was under the impression that the structure was land, but which subsequently on removal was proved to be a wharf on piles only; *vide* the affidavits of W. Smith, Redfern; George T. Hobson, Waterloo; E. J. Bishop, Waterloo; H. Whitton, Sydney; M. Smith, Waterloo; J. S. McGowen, M.P., Sydney; and Smith appears to have continued under the impression till the month of April, 1893, when the said wharf was removed, *vide* his affidavit of 12th October, 1893.

The

The application by Smith to purchase a small area of reclaimed land—say 5 perches—under date 30/9/90, Papers 90-9,038 Aln., and refused 17/10/90, *vide* Papers 90-9,683 Aln., would naturally indicate that Smith had, or believed he had, reclaimed land adjoining his purchased land, and the affidavit of the 12th October, 1893, shows such to have been his impression up to April, 1893. Subsequently, it appears from Mr. Twynam's minute of 19/11/91, Mis. 91-7,781, that the application of Smith to purchase the land being refused, it was then suggested to him that he might apply for a lease. "This he had previously done," *vide* 90-2,175, as also by written application, dated 1st October, 1890, and numbered by Land Board Office, 90-5,115. These documents are somewhat puzzling, as the official application is made for a special lease for an "existing wharf, &c., and piles." There is no mention made of land in this document, unless the word etcetera can be intended to refer to the reclaimed area. Be that as it may, the application apparently was refused by the Local Land Board on the 6th April, 1891, *vide* 91-2,629, and the existing wharf or reclamation, or whatever it was, was apparently considered by the Land Board to be a trespass, but the Land Board stated as follows:—"If it be desired to condone or legalise existing trespass, we should recommend a lease for one year from 31st January, 1890, the date when instructions for proceedings in trespass were issued, and we appraise the rent for that term at £100." Why Smith's application was refused does not appear to be very clear, beyond the fact that it was strenuously opposed by Captain Jackson.

Having, on 6th day of October, in company with Mr. M'Gowen, M.P., and the Messrs. Smith, as also, on 19th day of October, in company with Mr. Perdriau, and, on 23rd day of October, in company with Captain Jackson, visited and inspected the land in question, I am forced to the conclusion that there never was any reclamation, provided the boundary wall is the correct boundary to the land owned by Mr. Smith, and which I believe it to be; but this is a matter to be determined by a surveyor. I think I may say, without fear of contradiction, that Captain Jackson holds my views, *i.e.*, that the foreshore has not in any way been interfered with.

Granting that it was possible, in years gone by, to have reclaimed land without it being possible at the present date to obtain proof of such reclamation, I think it is against reason and common sense to suppose that such reclamation, if any, and stated to be an area of 5 perches, could be removed in 1893 from such a busy centre of the city without the knowledge of hundreds of persons, whether such removal was done by land or water; and in refutation of such removal, affidavits have been sent in by W. Smith, Redfern; George Hobson, Waterloo; Edward J. Bishop, Waterloo; H. Whetton, Sydney; M. Smith, Waterloo; J. S. McGowen, M.P., Sydney; all dated 12th October, 1893.

I may also state that the present occupant, W. H. Daniels, of the shed on Smith's ground, in conversation with Mr. Perdriau and myself, assured us that he saw the wharf removed, that it was taken away by horses up Erskine-street, and that there was no land removed whatever, or any change made in the boundary of Smith's land beyond the placing of a few stones filling up broken parts of the walls bounding the land on its water frontage, and on its Erskine-street side line. The affidavit referred to include those from Whetton, the son of the contractor who removed the wharf, and the labourers, G. T. Hobson and E. J. Bishop. Mr. Perdriau, the surveyor from the Lands Department, whom I am given to understand advised that a reclamation had been made, is, I think, now doubtful on that point, and inclined to believe that what he took to be a reclamation and land was really, as stated in the affidavit, a wharf only. Mr. Perdriau may easily be excused for thinking that the wharf was land, because it was close piled underneath, thus hiding the surface of the water, and the flooring was covered with soil, the *debris* or droppings from cargo, and on which soil I understand grass had sprouted. Mr. Perdriau's error (if it was an error) is the more excusable when it is borne in mind that the owner, Smith, himself believed it was land, and was under the impression until the wharf was removed in 1893, and during its removal one of the horses of the contractor, it is stated, broke through the flooring of the wharf. Against my opinion and the various affidavits that there was no reclamation, has, of course, to be set Smith's own letters, *i.e.*, to purchase the reclamation—say 5 perches, *vide* his letter of 30/9/90, No. 90/9,038 Aln., and his application to lease "existing wharf, &c., and piles," *vide* papers 90/2,175, and his own letter of the 1st October, 1890, 90/5,115, and which only can be accounted for by his affidavit of the 12th October, 1893, in which he explains that he was, up to April, 1893, under the impression that there was a reclamation. Apparently the Land Board, *vide* their decision of 6th April, 1891, Papers 91/2,621, were of the opinion that Smith was a trespasser, but whether they were of that opinion because they believed Smith or some one else previous to him had reclaimed land I cannot say, and it may be that they would not have held that opinion had they known that there was a wharf only, for it may be that the original owners of the property had obtained permission to erect a wharf in connection with the chapel; but on this point I have not any information before me, but consider it is of sufficient importance to ascertain whether such permission had or had not been granted, and also if the building of the wharf without permission by Smith's predecessors, or by Smith himself, in part or altogether, would be a trespass, and if a trespass of sufficient gravity to place him in the position of one who by his own act had cut himself off from his water rights, *vide* the minute of the Minister for Lands, under date 23/12/92, papers 92/9,263, bearing in mind that apparently the wharf was permitted to be put up and to remain there for a number of years without remonstrance from the Government, until subsequent to 30th September, 1890, *vide* Smith's letter of the 1st October, 1890, papers 90/5,115, although the Land Board, *vide* 91/2,629, state that the Government issued instructions on 31/1/90, for proceedings to be taken against Smith. The whole matter is one, to my thinking, which is more for an opinion by the Crown Solicitor than by any one else, as:—

- (a) The reclaiming of the land or otherwise must be determined by evidence, though, personally, I am satisfied there was no reclamation.
- (b) Presuming there was no reclamation, it must be determined whether the wharf, as erected by Smith or his predecessors, or by both, was illegal; and if illegal, how far, if at all, by the erection of the wharf, Smith destroyed his rights, if any, to a water frontage.
- (c) Anticipating that Smith desires to obtain a bald statement from the Government whether they would not acknowledge he had not reclaimed land, and in the event of obtaining such an acknowledgment, that he, Smith, would then either demand heavy compensation for interference with his rights or the resumption of the whole of his property, induced me to write my letter of the 23rd instant, and to which I have received a letter from Messrs. Abbott and Allen, dated the 30th instant, in answer to same. By this letter, it will be seen that Smith demands acknowledgment

acknowledgment by the Crown "to having the absolute, free, and uninterrupted right and use of the water-frontage to his land, such an absolute right as his predecessors in title were possessed of, and of which he has been deprived for about two years, including in such rights the right, without charge, to erect such a wharf as he may think fit; he also claims that all piles and other obstructions shall be removed by the Crown, and that he shall be compensated for the loss and expenses he has been put to by the Crown's action in depriving him of his rights, and also in establishing his rights, and to state further that failing his being fully satisfied as above he would prefer the whole of his land be resumed by the Crown, in which case he would be prepared to forego his claim for compensation. Please understand that this letter is without prejudice, and we shall be glad if you will deal with this matter without delay."

This letter convinces me that although I hold the opinion that the land was not reclaimed by Smith or anyone else, still the Crown Solicitor is the proper officer to deal with this case, and that before any reply whatever is given to Smith or his solicitors; for it may be that the Crown Solicitor will advise Smith to be allowed to prove everything in Court, and for the Crown not to acknowledge anything.

It may be well to point out for the guidance of all concerned that I understand that the water-frontage in question is not required for ferry purposes, as was at one time thought to be the case, as it is now found that the Government own the frontage supposed to belong to the Council, and by shifting the floating jetty a few feet to the north side of the piles complained of by Smith, ample room can be given for the requirements of the ferry companies, and at a cost of (say) £10. Captain Jackson and the Engineer-in-Chief for Harbours and Rivers can fully explain this.

T.F.W.

Perhaps the Minister will approve of Mr. Waller going into the matter with the Crown Solicitor.—J.B., 6/11/93. Approved.—W.J.L., 14/11/93. Mr. Waller.—D.C.M'L., per U.S. B.C., 15/11/93. Will the Under Secretary be good enough to make an appointment with the Crown Solicitor for me.—T.F.W., 17/11/93. Under Secretary for Public Works

After going into this matter with Mr. Waller (this day), I think that this report, and the evidence therein referred to, should be referred to the Lands Department for a surveyor to report on the land as it now stands, particularly as to whether there are any encroachments beyond the boundary of the grant, and as to whether there is any evidence to modify or contradict the evidence put forward by Smith.—E.A.S., 27/11/93. B.C., The Under Secretary for Works.

Submitted.—J.B., 27/11/93. Approved.—W.J.L., 28/11/93. B.C., The Under Secretary for Lands.—J.B., 28/11/93. In compliance with the request contained in the Crown Solicitor's memo. of 27th ult., it is submitted that the matter be referred to the Chief Surveyor—H.O., for the U.S., 2/12/93. Mr. Surveyor Perdriau for such survey as may be requisite, and comprehensive report.—E. TWYNHAM, C.S., 5/12/93. Replied to by my report of the 12th December, No. 93/131, transmitting a sketch showing the present condition of the land.—S. E. PERDRIAU, Government Surveyor. Submitted.—27/11/93. Approved.—W.J.L., 28/11/93. Under Secretary for Lands.—W.C., 28/11/93.

No. 28.

Government-Surveyor S. E. Perdriau to The Chief Surveyor.

Reporting upon illegal reclamation at Darling Harbour, on the frontage of Matthew Smith's land, at the corner of Erskine and Lime Streets, allotment No. 14, section 55, City of Sydney.

Sir,

12 December, 1893.

1. In compliance with your instructions, No. 93-990, dated 5th instant, on Miscellaneous Lease 93-9,219, I have the honor to report upon the above-mentioned land, "as it now stands," and "as to whether there is any evidence to modify or contradict the evidence put forward by Smith," such report having been asked for by the Crown Solicitor.

2. With the papers there is a *précis* of the case, dated 9th January, 1893, and Mr. Waller, the Acting Government Valuator, has written a very comprehensive minute upon the case, dated 3rd November, 1893; but if I recapitulate a few of the principal facts, I may perhaps save you the necessity of perusing many of the papers, which are now voluminous. Such recapitulation I have deemed requisite in view of the present phase of the case, and of the recommendation which I intend making in this report, in order that the case may be finally disposed of.

3. This allotment was originally granted as a site for a Bethel Union Chapel.

4. Matthew Smith has owned the allotment for about twenty-one years to date. When he purchased, the structures beyond the limits of the grant, shown upon my sketch with the papers, and marked Miscellaneous Lease 91-5,786, had already been erected.

5. In July, 1890, Smith applied for a special lease for existing wharf, &c., and files, "as per plan attached," to cover the unauthorised erections fronting his allotment. The Local Land Board, in April, 1891, reported that they could not recommend that a lease be granted as desired.

6. Being under the impression that the area abutting on the water-frontage of his allotment was reclaimed land, Smith, on 30th September, 1890, applied to purchase same. Said application was refused, 17th October, 1890.

7. Apparently, the next action of importance to this Department was the resumption (under the Lands for Public Purposes Acquisition Act, as adopted by the Public Works Act of 1888) by *Gazette* notice of 21st November, 1892, of the $4\frac{1}{2}$ perches shown upon my sketch above referred to, which was supposed to be reclaimed land, such resumption having been recommended by the Honorable the Minister for Lands in his minute dated 20th June, 1892, the purpose being for wharf accommodation for the Balmain New Ferry Company (Limited) whereon to erect offices, &c.

8. Since the date of the notice of resumption other arrangements have been made, whereby the Ferry Company have erected their offices upon the public wharf adjoining, and it would appear that the area of $4\frac{1}{2}$ perches resumed is not now required by the Government.

9. The sketch above referred to shows the structures in existence on the date of my former report (30th July, 1892), and the sketch, which I beg to transmit with this report, shows the present condition of the site, the said structures having been demolished in the meantime.

10. Smith now contends—*vide* letter dated 12th October, 1893, from the solicitors, Messrs. Abbott and Allen, with the papers—that the land marked “Reclaimed land” on the sketch was not, and never had been, reclaimed, and with said letter forwards six declarations to that effect by witnesses of the demolition, who state that the area had been planked over, and that rubbish and earth had so accumulated on the surface that the area had the appearance of having been reclaimed.

11. Here I might point out that Smith, after having shown by two separate applications to this Department for purchase and for lease of the foreshore, that he knew the structures had been erected in trespass, took upon himself, without permission from this Department, to remove the structures.

12. It would have been much more satisfactory to me if I had seen the site immediately after the surface had been removed, for the land presented the appearance of land reclaimed in the old-fashioned style, *viz.*, by a sea-wall of close piling and plank sheathing backed by ballast. The work was very old and dilapidated, and reclamation material, such as ashes, would wash through the openings (caused by decay) at high tides and during rainy weather. Such action continuing for years, a hollow would be created under the wharf-deck, and gradually the filling material would all wash out, leaving the area in the condition of partial reclamation in which I represented it, *viz.*, “Very old reclamation, washing away in parts.”

13. If Smith, as he alleges, discovered that the land had not been reclaimed, evidently it was his duty to inform this Department to that effect before he removed all the material therefrom and destroyed the possibility of disproving his allegation.

14. All the affidavits, except that by Mr. McGowen, M.P., are by persons employed by Smith or related to him, and are consequently perhaps not free from bias.

15. I am informed that Smith's contention now is that as there was no reclaimed land, the *Gazette* notice purporting to reclaim such land becomes null and void. Admission of that contention will not apparently affect the matter to Smith's benefit, for both his applications to reclaim and lease the area fronting his freehold have been refused. Also nothing has been done to interfere with Smith's freehold, except that he has been denied the concession of permission for extending same into the harbour by reclamation or jetty, and in this he has been similarly treated to others owning properties adjoining public streets. *Vide* Occ. 87/14,077—Application by one Fenwick for a special lease of land fronting his freehold, which adjoins Darling-street, Balmain. Refused, because, if erected, the jetty would interfere with traffic to the public wharf at Darling-street, which is a place of call by ferry steamers.

16. It appears to me that no action is necessary in this matter now by the Department of Lands. Smith's applications have been refused simply upon public grounds.

17. Day's case, in which the Government was successful in Equity, has been quoted as similar to this, and in that case it was decided that the proprietor having cut off his access to the water by illegal reclamation, had deprived himself of his water-frontage. To make the cases quite parallel it would be necessary to decide—if it be admitted that reclamation had not been effected in the usual way—that close piling plank sheathing, with ballast packing at the back, and decking over as a wharf, are not as effectual a reclamation as by filling in the area with ashes in the usual way—in both cases the water at high tide percolates through the material to the original high-water mark. The steamers of the Balmain New Ferry berth at the southern side of the public wharf (which occupies the whole of the water-frontage of Erskine-street), and occupy part of the water space in front of Smith's allotment (see my sketch “A” with this report). These steamers ply every quarter of an hour from 5 a.m. till 12 p.m., and are berthed here for about five minutes each trip, consequently their occupation is almost perpetual, and the two piles (said to have been driven by the Government) used to spring the steamer to the berth, further prevent Smith from using his water-frontage.

18. I am informed that the Balmain New Ferry Co. pay the Government about £300 per annum as rent.

19. Upon the question of riparian rights, I beg respectfully to point out that the opinion of the Crown Solicitor upon such questions as follow would be of considerable value in dealing with this and other cases, *viz.* :—

1. In such a case, what riparian rights has Smith?
2. Can Smith command the sole use of the water in front of his allotment for mooring vessels there?
3. Where such authorised extensions exist as the public wharf and the Pyrmont jetty in this case, has Smith any special and peculiar right whatever in law over the water in front of his allotment; and, if so, is that right superior to that of the Crown—the Crown being the owner of the public wharf?

I have, &c.,

STEPHEN E. PERDRIAU,
Government Surveyor.

The Metropolitan District Surveyor.

Submitted this report be forwarded to the Crown Solicitor in compliance with his memo. of 27th ultimo. Approved.—W.H., 22/12/93. The Crown Solicitor.—H.O. (for U.S.), 27/12/93.

No. 29.

The Crown Solicitor to The Under Secretary for Public Works.

Sir,

Crown Solicitor's Office, Sydney, 9 January, 1894.

I have the honor to return herewith the papers relating to the illegal reclamation at Darling Harbour, on the frontage of Matthew Smith's land, at the corner of Erskine and Lime Streets.

On the report of Mr. Surveyor Perdriau, forwarded on the 27th ultimo, I think that the proper course is to inform Messrs. Abbott and Allen that their client's claim cannot be recognised; and further, that their client, in removing the filling-in and erections outside the boundaries of his Crown grant, has been guilty of an action of trespass for which he is held liable.

I have, &c.,

ERNEST A. SMITH.

Messrs. Abbott and Allen may be so informed.—F.W., 7/2/94.

Approved.—W.J.L., 8/2/94.

17

No. 30.

Messrs. Abbott and Allen to The Under Secretary for Public Works.

Sir,

14, Castlereagh-street, 7 February, 1894.

Referring to the correspondence between ourselves and Mr. J. F. Waller, representing the Crown, respecting Mr. Matthew Smith's property at the foot of Erskine-street, city of Sydney, more particularly our last letter to Mr. Waller of the 30th October last, we shall be glad to know what determination has been arrived at by the Minister for Works.

We would draw your attention to the fact that since our last letter to Mr. Waller on the subject, more than three months ago, we have had no communication from your Department.

We have, &c.,

ABBOTT AND ALLEN.

The Land Valuer.—D. C. McL., per U.S., B.C., 8/2/94. This letter has crossed reply sent on, 8/2/94.—J.T. Put by.

No. 31.

The Under Secretary for Public Works to Messrs. Abbott and Allen.

Gentlemen,

Public Works Department, Sydney, 8 February, 1894.

With reference to your letter of the 30th October last, respecting the reclamation of certain land at the corner of Erskine-street and Lime-street, Darling Harbour, by your client, Mr. Matthew Smith, I am directed by the Secretary for Public Works to inform you that, under the advice of the Crown Solicitor, who has carefully gone into the whole matter, he cannot recognise your client's claims; and further, that your client, in removing certain "fillings in" and "erections" outside the boundaries of the Crown grants, has been guilty of an act of trespass, for which he is held liable.

I have, &c.,

J. BARLING,

Under Secretary.

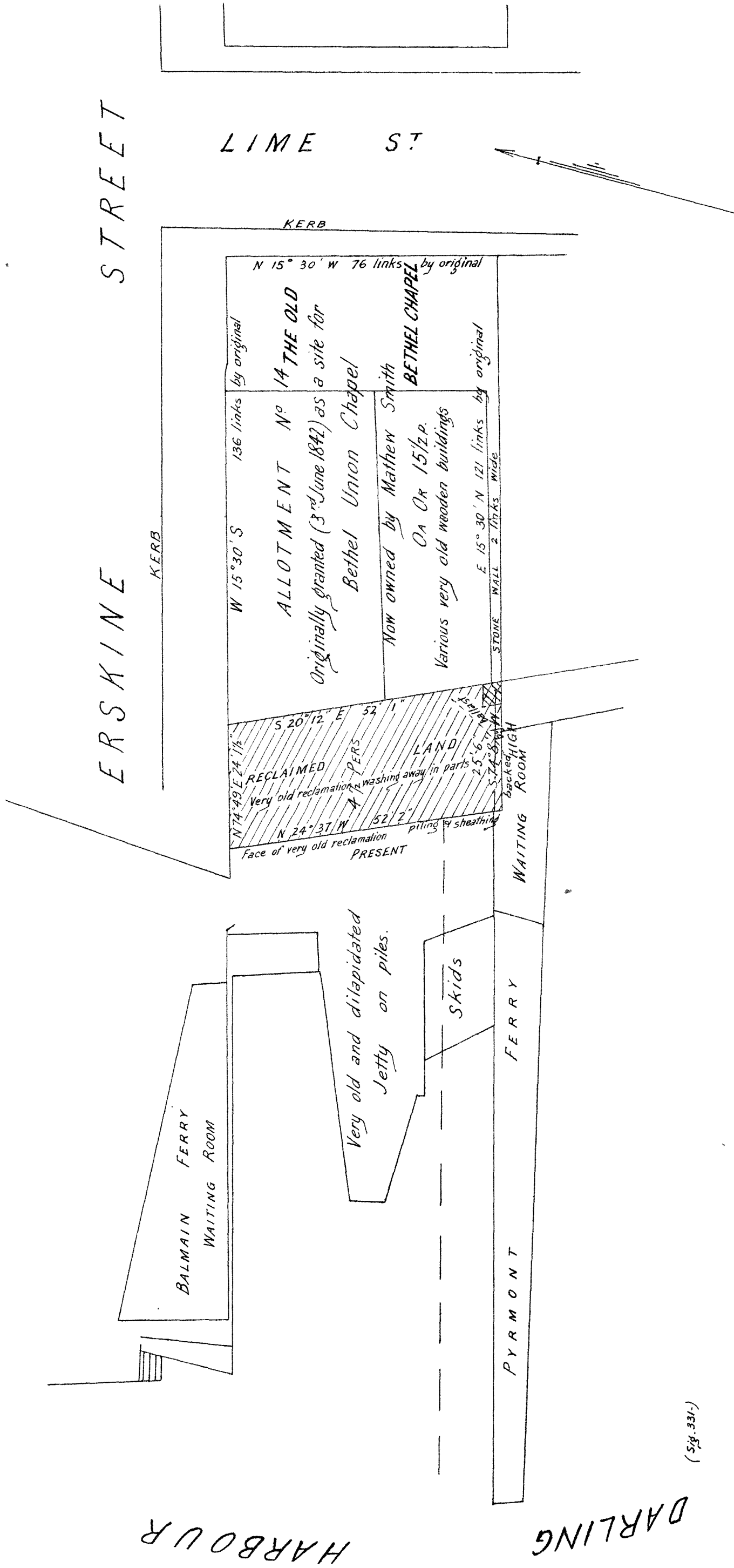
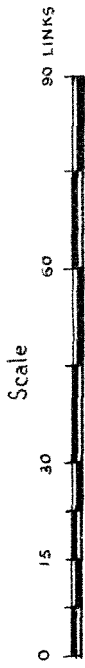
[One plan.]

"A"

Plan showing 4 1/2 perches of reclaimed land (hatched)

Approved to be resumed for Wharfage purposes.

ERSKINE, S.T., DARLING HARBOUR.



(58.331-)

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

PUBLIC WORKS ACT OF 1888.

(RESUMPTION OF LAND FOR WHARFAGE ACCOMMODATION AT KENDALL, CAMDEN HAVEN RIVER)

Ordered by the Legislative Assembly to be printed, 21 February, 1894.

**NOTIFICATION OF RESUMPTION OF LAND UNDER
THE "PUBLIC WORKS ACT OF 1888," 51 VIC-
TORIA No. 87.**

NEW SOUTH WALES, } Proclamation by His Excellency The
to wit. } Right Honourable SIR ROBERT WILLIAM
DUFF, a Member of Her Majesty's Most
Honourable Privy Council, a Knight
(L.S.) } Grand Cross of the Most Distinguished
Order of Saint Michael and Saint George,
R. W. DUFF, } Governor and Commander-in-Chief of
Governor. } the Colony of New South Wales and its
Dependencies.

WHEREAS I, Sir ROBERT WILLIAM DUFF, the Governor aforesaid, with the advice of the Executive Council, have directed that a certain public work, that is to say, Wharfage Accommodation at Kendall, Camden Haven River, in the said Colony, the estimated cost of which does not exceed twenty thousand pounds, shall be carried out under the provisions of the "Public Works Act of 1888," as an authorised work by the Minister for Public Works as Constructing Authority; and that the land described in the Schedule hereto, which is in my opinion required for carrying out the said work, shall be acquired by taking the same under the "Lands for Public Purposes Acquisition Act," as adopted by the "Public Works Act of 1888": Now, therefore, I, the said Governor, with the advice aforesaid, in pursuance of the "Public Works Act of 1888," do declare by this notification, to be published in the Government Gazette and in one or more newspapers published or circulated in the Police District wherein the said land is situated, that the Crown Land comprised within the description set forth in the Schedule hereto has been appropriated, and the private property within such description has been resumed, for the public purpose aforesaid, to the intent that upon the publication of this notification in the Gazette, the said land described

in the said Schedule hereto shall forthwith be vested in the said Constructing Authority as a corporation sole on behalf of Her Majesty, for the purposes of the said "Public Works Act of 1888," for an estate in fee simple in possession, freed and discharged from all trusts, obligations, estates, interests, contracts, charges, rates, rights-of-way, or other easements whatsoever; and to the further intent that the legal estate therein, together with all powers incident thereto or conferred by the said last-mentioned Act, shall be vested in such Constructing Authority as a Trustee: And I declare that the following is the Schedule of land hereinbefore referred to:—

SCHEDULE.

All that piece or parcel of land situate in the parish of John's River, county of Macquarie, and Colony of New South Wales, being part of portion 120: Commencing at the north-eastern corner of portion 96 of 2 roods 9 perches measured as a site for a landing place; and bounded thence by lines bearing south 1 chain 14 links, east 2 chains 50 links, and north 1 chain 20 links to the right bank of the Camden Haven River; and thence by that bank upwards, to the point of commencement,—be the said several dimensions all a little more or less, containing 1 rood 1½ perches or thereabouts, and said to be in the possession and occupation of M. Fagan.

In witness whereof I have hereunto set my Hand, and caused the Great Seal of the Colony to be hereto affixed, at Government House, Sydney, this ninth day of February, in the year of our Lord one thousand eight hundred and ninety-four, and in the fifty-seventh year of Her Majesty's Reign.

By His Excellency's Command,

WILLIAM JOHN LYNE.

GOD SAVE THE QUEEN!

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

PUBLIC WORKS ACT OF 1888.

(RESUMPTION OF LAND FOR ACCESS TO WHARF SITE ON WEST BANK OF HASTINGS RIVER.)

Ordered by the Legislative Assembly to be printed, 29 May, 1894.

NOTIFICATION OF RESUMPTION OF LAND UNDER
THE "PUBLIC WORKS ACT OF 1888," 51 VICTORIA
No. 37.

NEW SOUTH WALES, } Proclamation by His Excellency The
to wit. } Right Honourable Sir ROBERT WILLIAM
DUFF, a Member of Her Majesty's Most
(L.S.) } Honourable Privy Council, a Knight
Grand Cross of the Most Distinguished
Order of Saint Michael and Saint George,
R. W. DUFF, } Governor and Commander-in-Chief of
Governor. } the Colony of New South Wales and its
Dependencies.

WHEREAS I, SIR ROBERT WILLIAM DUFF, the Governor aforesaid, with the advice of the Executive Council, have directed that a certain public work, that is to say, Wharf Site on west bank of Hastings River and a way of access thereto, in the said Colony, the estimated cost of which does not exceed twenty thousand pounds, shall be carried out under the provisions of the "Public Works Act of 1888," as an authorised work by the Minister for Public Works as Constructing Authority, and that the land described in the Schedule hereto, which is in my opinion required for carrying out the said work, shall be acquired by taking the same under the "Lands for Public Purposes Acquisition Act," as adopted by the "Public Works Act of 1888": Now, therefore, I, the said Governor, with the advice aforesaid, in pursuance of the "Public Works Act of 1888," do declare by this notification, to be published in the Government Gazette and in one or more newspapers published or circulated in the Police District wherein the said land is situated, that the Crown Land comprised within the description set forth in the Schedule hereto has been appropriated, and the private property within such description has been resumed, for the public purpose aforesaid, to the intent that upon the publication of this notification in the Gazette, the said land described in the said Schedule hereto shall forthwith be vested in the said Constructing Authority as a Corporation sole on behalf of Her Majesty, for the purposes of the said "Public Works Act of 1888," for an estate in fee simple in possession, freed and discharged from all trusts, obligations, estates, interests, contracts, charges, rates, rights-of-way, or other easements whatsoever; and to the further intent that the legal estate therein, together with all powers incident

thereto or conferred by the said last-mentioned Act, shall be vested in such Constructing Authority as Trustee: And I declare that the following is the Schedule of land herein-before referred to:—

SCHEDULE.

All that piece or parcel of land situated in the parish of Redbank, county of Macquarie, and Colony of New South Wales, being part of a grant of 1,170 acres to John Lewis Spencer, on the Hastings River: Commencing on the eastern side of the Beechwood to Kempsey Road, at a point bearing north 29 degrees 43 minutes east and distant 7 chains 56 links from its intersection with the northern side of a road 1 chain wide leading across the Hastings River to Wauchope; and bounded thence by part of the eastern side of the said Beechwood-Kempsey Road bearing north 12 degrees 52 minutes east 1 chain $8\frac{1}{10}$ links; thence by lines bearing south 54 degrees 37 minutes east 4 chains 55 links, south 58 degrees 11 minutes east 4 chains $99\frac{7}{10}$ links, and north 33 degrees 13 minutes east 5 chains 44 links to the reservation line of 100 feet from high-water mark on the left bank of the said Hastings River; thence by part of the said reservation line bearing south 2 degrees 54 minutes west 1 chain 98 links; thence by lines parallel to and distant 1 chain from the fourthly, thirdly, and secondly described lines, bearing south 33 degrees 13 minutes west 4 chains $70\frac{1}{10}$ links, north 58 degrees 11 minutes west 6 chains $2\frac{3}{10}$ links, and north 54 degrees 37 minutes west 4 chains $16\frac{1}{10}$ links, to the point of commencement,—be the said dimensions a little more or less, containing 1 acre 1 rood 39 perches or thereabouts, and said to be in the possession and occupation of John Cameron.

In witness whereof I have hereunto set my Hand, and caused the Great Seal of the Colony to be hereto affixed, at Government House, Sydney, this fourteenth day of May, in the year of our Lord one thousand eight hundred and ninety-four, and in the fifty-seventh year of Her Majesty's Reign.

By His Excellency's Command,

WILLIAM JOHN LYNE.

GOD SAVE THE QUEEN

1894.

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

PUBLIC WORKS ACT OF 1888.

(RESUMPTION OF LAND FOR POST AND TELEGRAPH OFFICE AT MINMI.)

Ordered by the Legislative Assembly to be printed, 28 March, 1894.

NOTIFICATION OF RESUMPTION OF LAND UNDER THE "PUBLIC WORKS ACT OF 1888," 51 VICTORIA No. 37.

NEW SOUTH WALES, } Proclamation by His Excellency The
to wit. } Right Honourable Sir ROBERT WILLIAM
DUFF, a Member of Her Majesty's Most
Honourable Privy Council, a Knight
(L.S.) } Grand Cross of the Most Distinguished
Order of Saint Michael and Saint George,
R. W. DUFF, } Governor and Commander-in-Chief of
Governor. } the Colony of New South Wales and its
Dependencies.

WHEREAS I, Sir ROBERT WILLIAM DUFF, the Governor aforesaid, with the advice of the Executive Council, have directed that a certain public work, that is to say, Erection of a Post and Telegraph Office at Minmi, in the said Colony, the estimated cost of which does not exceed twenty thousand pounds, shall be carried out under the provisions of the "Public Works Act of 1888," as an authorised work by the Minister for Public Works as Constructing Authority; and that the land described in the Schedule hereto, which is in my opinion required for carrying out the said work, shall be acquired by taking the same under the "Lands for Public Purposes Acquisition Act," as adopted by the "Public Works Act of 1888": Now, therefore, I, the said Governor, with the advice aforesaid, in pursuance of the "Public Works Act of 1888," do declare by this notification, to be published in the Government Gazette, and in one or more newspapers published or circulated in the Police District wherein the said land is situated, that the Crown Land comprised within the description set forth in the Schedule hereto has been appropriated, and the private property within such description has been resumed, for the public purpose aforesaid, to the intent that upon the publication of this notification in the Gazette, the said land described in the said Schedule hereto shall forthwith be vested in the said Constructing Authority

as a corporation sole on behalf of Her Majesty, for the purposes of the "Public Works Act of 1888," for an estate in fee simple in possession, freed and discharged from all trusts, obligations, estates, interests, contracts, charges, rates, rights-of-way, or other easements whatsoever; and to the further intent that the legal estate therein, together with all powers incident thereto or conferred by the said last-mentioned Act, shall be vested in such Constructing Authority as a Trustee; and I declare that the following is the Schedule of land hereinbefore referred to:—

SCHEDULE.

All that piece or parcel of land situate in the township of Minmi, parish of Hexham, county of Northumberland, and Colony of New South Wales, being allotment 6 of section 2: Commencing at the westernmost corner of allotment 7; and bounded thence by the south-eastern boundary of the main road from West Wallend to Maitland bearing south-westerly 1 chain; thence by lines bearing south-easterly 2 chains 40 links and north-easterly 1 chain; and thence by the south-western boundary of allotment 7 aforesaid bearing north-westerly 2 chains 40 links, to the point of commencement,—be the said several dimensions all a little more or less, containing 38 $\frac{1}{2}$ perches or thereabouts, and said to be in the possession of John and Alexander Brown.

In witness whereof I have hereunto set my Hand, and caused the Great Seal of the Colony to be hereto affixed, at Government House, Sydney, this tenth day of March, in the year of our Lord one thousand eight hundred and ninety-four, and in the fifty-seventh year of Her Majesty's Reign.

By His Excellency's Command,
WILLIAM JOHN LYNE.

[73] GOD SAVE THE QUEEN!

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

PUBLIC WORKS ACT OF 1888.

(RESUMPTION OF LAND FOR STABLING FOR POST AND TELEGRAPH OFFICE, NORTH SYDNEY.)

Ordered by the Legislative Assembly to be printed, 10 May, 1894.

**NOTIFICATION OF RESUMPTION OF LAND UNDER
THE "PUBLIC WORKS ACT OF 1888," 51 VICTORIA
No 37.**

NEW SOUTH WALES, } Proclamation by His Excellency The
to wit. } Right Honourable Sir ROBERT WILLIAM
(L.S.) } DUFF, a Member of Her Majesty's Most
R. W. DUFF, } Honourable Privy Council, a Knight
Governor. } Grand Cross of the Most Distinguished
Order of Saint Michael and Saint George,
Governor and Commander-in-Chief of
the Colony of New South Wales and its
Dependencies.

WHEREAS I, Sir ROBERT WILLIAM DUFF, the Governor aforesaid, with the advice of the Executive Council, have directed that a certain public work, that is to say, Stabling Accommodation in connection with the Post and Telegraph Office, at North Sydney, in the said Colony, the estimated cost of which does not exceed twenty thousand pounds, shall be carried out under the provisions of the "Public Works Act of 1888," as an authorised work by the Minister for Public Works as Constructing Authority, and that the land described in the Schedule hereto, which is in my opinion required for carrying out the said work, shall be acquired by taking the same under the "Lands for Public Purposes Acquisition Act," as adopted by the "Public Works Act of 1888": Now, therefore, I, the said Governor, with the advice aforesaid, in pursuance of the "Public Works Act of 1888," do declare by this notification, to be published in the Government Gazette, and in one or more newspapers published or circulated in the Police District wherein the said land is situated, that the Crown Land comprised within the description set forth in the Schedule hereto has been appropriated, and the private property within such description has been resumed, for the public purpose aforesaid, to the intent that upon the publication of this notification in the Gazette, the said land described in the said Schedule hereto shall forthwith be vested in the said Constructing Authority as a corporation sole on

behalf of Her Majesty, for the purposes of the "Public Works Act of 1888," for an estate in fee simple in possession, freed and discharged from all trusts, obligations, estates, interests, contracts, charges, rates, rights-of-way, or other easements whatsoever; and to the further intent that the legal estate therein, together with all powers incident thereto or conferred by the said last-mentioned Act, shall be vested in such Constructing Authority as a Trustee; and I declare that the following is the Schedule of land hereinbefore referred to:—

SCHEDULE.

All that piece or parcel of land situate in the parish of Willoughby, county of Cumberland, and Colony of New South Wales, being part of the land comprised in Certificate of Title, registered volume 30, folio 41: Commencing at the junction of the northern boundary of Mount-street with the western boundary of William-street; and bounded thence by the said boundary of Mount-street bearing westerly 50 feet; thence by a line parallel to William-street bearing northerly 110 feet; thence by a line bearing easterly 50 feet; and thence by the aforesaid western boundary of William-street bearing southerly 110 feet, to the point of commencement,—be the said several dimensions all a little more or less; containing 20½ perches or thereabouts, and said to be in the possession of the Official Assignee of the estate of James Wheeler.

In witness whereof I have hereunto set my Hand, and caused the Great Seal of the Colony to be hereto affixed, at Government House, Sydney, this twenty-eighth day of April, in the year of our Lord one thousand eight hundred and ninety-four, and in the fifty-seventh year of Her Majesty's Reign.

By His Excellency's Command,

HENRY COPELAND.

GOD SAVE THE QUEEN!

1894.

NEW SOUTH WALES.

ELECTRIC TELEGRAPHS.

(NOTIFICATION RESPECTING THE INTRODUCTION OF STAMPED TELEGRAM FORMS.)

Presented to Parliament, pursuant to Act 20 Vic. No. 41, sec. 6.

Postal and Electric Telegraph Department, General Post Office,
Sydney, 21 February, 1894.

Hrs Excellency the Governor, with the advice of the Executive Council, having been pleased to approve of the introduction of stamped telegram forms, it is hereby notified, for public information, that telegram forms impressed with a 1s. or 6d. stamp may now be purchased at their face value singly, or in packets of twenty, at the General Post Office, or any telegraph office in the Colony.

JOHN KIDD.

1894.

NEW SOUTH WALES.

ELECTRIC TELEGRAPHS.

NOTIFICATION OF REDUCED FEE FOR THE REGISTRATION OF CYPHER ADDRESSES FOR TELEGRAMS.)

Presented to Parliament pursuant to Act 20 Vic. No. 41, sec. 6.

Postal and Electric Telegraph Department, General Post Office,
Sydney, 7th December, 1893.

It is hereby notified, for general information, that in accordance with the provisions of the 6th section of the Electric Telegraph Act, His Excellency the Governor, with the advice of the Executive Council, has been pleased to approve of the fee for the registration of cypher addresses for telegrams being reduced from 10s. 6d. to 10s. per annum, — to date from the 1st April next.

JOHN KIDD.

1894.

 NEW SOUTH WALES.

ELECTRIC TELEGRAPHS.

REDUCED RATE ON PRESS MESSAGES TO NEW CALEDONIA.)

Presented to Parliament, pursuant to Act 20 Vic. No. 41, sec. 6.

Postal and Electric Telegraph Department,
 General Post Office, Sydney, 3 May, 1894.

THE New Caledonian Telegraph Authorities having intimated that the rate for the transmission of Press messages over the lines of that Colony has been reduced, as from the 18th ultimo, from two pence to one penny per word, His Excellency the Governor, with the advice of the Executive Council, has, in accordance with the provisions of the 6th section of the Electric Telegraph Act, been pleased to approve of a corresponding reduction being made in the charges for Press messages transmitted from this Colony to New Caledonia, from the date in question.

JOHN KIDD.

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

PUBLIC WORKS ACT OF 1888.

(RESUMPTION OF LAND FOR WIDENING OF ROAD FROM BUNDANCOON TO THE GULLIES.)

Ordered by the Legislative Assembly to be printed, 21 February, 1894.

**NOTIFICATION OF RESUMPTION OF LAND UNDER
"THE PUBLIC WORKS ACT OF 1888," 51 VICTORIA
No. 37.**

NEW SOUTH WALES, } Proclamation by His Excellency The
to wit. } Right Honourable Sir ROBERT WILLIAM
DUFF, a Member of Her Majesty's Most
(L.S.) } Honourable Privy Council, a Knight
Grand Cross of the Most Distinguished
Order of Saint Michael and Saint George,
R. W. DUFF, Governor and Commander-in-Chief of
Governor. } the Colony of New South Wales and its
Dependencies.

WHEREAS I, Sir ROBERT WILLIAM DUFF, the Governor aforesaid, with the advice of the Executive Council, have directed that a certain public work, that is to say, widening of the Road from Bundanoon to the Gullies, in the said Colony, the estimated cost of which does not exceed twenty thousand pounds, shall be carried out under the provisions of "The Public Works Act of 1888," as an authorised work by the Minister for Public Works as Constructing Authority; and that the lands described in the Schedule hereto, which are in my opinion required for carrying out the said work, shall be acquired by taking the same under "The Lands for Public Purposes Acquisition Act" as adopted by "The Public Works Act of 1888": Now, therefore, I, the said Governor, with the advice aforesaid, in pursuance of "The Public Works Act of 1888," do declare by this notification to be published in the Government Gazette, and in one or more newspapers published or circulated in the Police District wherein the said lands are situated, that the Crown Land comprised within the descriptions set forth in the Schedule hereto has been appropriated, and the private property within such descriptions has been resumed, for the public purpose aforesaid, to the intent that upon the publication of this notification in the Gazette, the said lands described in the said Schedule hereto shall forthwith be vested in the said Constructing Authority as a corporation sole on behalf of Her Majesty, for the purposes of the said "Public Works Act of 1888," for an estate in fee simple in possession, freed and discharged from all trusts, obligations, estates, interests, contracts, charges, rates, rights-of-way, or other easements whatsoever; and to the further intent that the legal estate therein, together with all powers incident thereto or conferred by the said last-mentioned Act, shall be vested in such Constructing Authority as a Trustee: And I declare that the following is the Schedule of the lands hereinbefore referred to:—

1. All that piece or parcel of land situate in the parish of Bundanoon, county of Camden, and Colony of New South Wales, being part of portion 55: Commencing at the north-east corner of that portion; and bounded thence by its east boundary bearing south 12 chains 38½ links; thence by a line bearing west 50 links; thence by a line bearing north 13 minutes east 12 chains 38½ links; and thence by the north boundary of the aforesaid portion bearing east 45½ links, to the point of commencement,—be the said several dimensions all a little more or less. Containing 2 roods 14½ perches or thereabouts, and said to be in the possession and occupation of Charles C. Gale.

2. All that piece or parcel of land situate in the parish of Sutton Forest, county of Camden, and Colony of New South Wales, being part of portion 57: Commencing at the south-east corner of that portion; and bounded thence by its east boundary bearing north 20 chains; thence by the north boundary of the aforesaid portion bearing west 50 links; thence by lines bearing south 14 minutes west 12 chains 30 links and south 40½ minutes east 7 chains 70 links; thence by the south boundary of portion 57 aforesaid bearing east 46 links, to the point of commencement,—be the said several dimensions all a little more or less. Containing 1 acre 5½ perches or thereabouts, and said to be in the possession and occupation of W. A. Nicholas.

3. All that piece or parcel of land situate in the parish of Sutton Forest, county of Camden, and Colony of New South Wales, being part of portion 90: Commencing at the south-east corner of that portion; and bounded thence by its south boundary bearing west 50 links; thence by a line bearing north 48 links; thence by the south boundary of portion 119 bearing east 50 links; and thence by the east boundary of portion 90 aforesaid bearing south 48 links, to the point of commencement,—be the said several dimensions all a little more or less, containing 4 perches or thereabouts, and said to be in the possession and occupation of W. A. Nicholas.

4. All that piece or parcel of land situate in the parish of Sutton Forest, county of Camden, and Colony of New South Wales, being part of portion 90: Commencing at the north-east corner of portion 119; and bounded thence by the north boundary of that portion bearing west 50 links; thence by a line bearing north 1 chain 23 links; thence by the south-eastern boundary of a road 1 chain wide bearing north 78 degrees 56 minutes east 51 links; and thence by the east boundary of portion 90 aforesaid bearing south 1 chain 33 links, to the point of commencement,—be the said several dimensions all a little more or less, containing 10½ perches or thereabouts, and said to be in the possession and occupation of W. A. Nicholas.

5. All that piece or parcel of land situate in the parish of Sutton Forest, county of Camden, and Colony of New South Wales, being part of portion 119: Commencing at the south-east corner of that portion; and bounded thence by its east boundary bearing north 2 chains; thence by the north boundary of the aforesaid portion bearing west 50 links; thence by a line bearing south 2 chains; and thence by the south boundary of the aforesaid portion bearing east 50 links, to the point of commencement,—be the said several dimensions all a little more or less, containing 16 perches or thereabouts, and said to be in the possession of the Church of England.

In witness whereof I have hereunto set my Hand, and caused the Great Seal of the Colony to be hereunto affixed, at Government House, Sydney, this thirteenth day of February, in the year of our Lord one thousand eight hundred and ninety-four, and in the fifty-seventh year of Her Majesty's Reign.

By His Excellency's Command,
WILLIAM JOHN LYNE.

GOD SAVE THE QUEEN!

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

PUBLIC WORKS ACT OF 1888.

(RESUMPTION OF LAND FOR DEVIATION OF ROAD FROM WANDSWORTH TO "OLD BEN LOMOND INN.")

Ordered by the Legislative Assembly to be printed, 29 May, 1894.

**NOTIFICATION OF RESUMPTION OF LAND UNDER
THE "PUBLIC WORKS ACT OF 1888," 51 VICTORIA
No. 37.**

NEW SOUTH WALES,)
to wit.) Proclamation by His Excellency The
Right Honourable Sir ROBERT WILLIAM
DUFF, a Member of Her Majesty's Most
Honourable Privy Council, a Knight
(L.S.) Grand Cross of the Most Distinguished
Order of Saint Michael and Saint George,
Governor and Commander-in-Chief of
R. W. DUFF, the Colony of New South Wales and its
Governor. Dependencies.

WHEREAS I, Sir ROBERT WILLIAM DUFF, the Governor aforesaid, with the advice of the Executive Council, have directed that a certain public work, that is to say, Deviation of Road from Wandsworth to "Old Ben Lomond Inn," through portion 28, parish of Moredun, county of Hardinge, in the said Colony, the estimated cost of which does not exceed twenty thousand pounds, shall be carried out under the provisions of the "Public Works Act of 1888," as an authorised work by the Minister for Public Works as Constructing Authority; and that the land required for carrying out the said work, shall be acquired by taking the same under the provisions of the "Public Works Act of 1888," as adopted by the "Public Works Act of 1888": Now, therefore, I, the said Governor, with the advice aforesaid, in pursuance of the "Public Works Act of 1888," do declare by this notification, to be published in the Government Gazette, and in one or more newspapers published or circulated in the Police District wherein the said land is situated, that the Crown Land comprised within the description set forth in the Schedule hereto has been appropriated, and the private property within such description has been resumed, for the public purpose aforesaid, to the intent that upon the publication of this notification in the Gazette, the said land described in the said Schedule hereto shall forthwith be vested in the said Constructing Authority as a corporation sole on behalf of Her Majesty, for the purposes of the "Public Works Act of 1888," for an estate in fee simple in possession, freed and discharged from all trusts, obligations, estates, interests, contracts, charges, rates, rights-of-way, or other easements whatsoever; and to the further intent that the legal estate therein, together with all powers incident thereto or conferred by the said last-mentioned Act, shall be

vested in such Constructing Authority as a Trustee; and I declare that the following is the Schedule of the land hereinbefore referred to:—

SCHEDULE.

All that piece or parcel of land situate in the parish of Moredun, county of Hardinge, and Colony of New South Wales, being part of portion 28: Commencing on the south-western boundary of portion 28, at a point bearing north 22 degrees 43 minutes west, and distant 13 chains 55 links from the south-western corner of that portion; and bounded thence toward the north, the west, and the north-west by lines bearing south 66 degrees 37 minutes east 6 chains 66 links, south 75 degrees 56 minutes east 9 chains 14 links, north 72 degrees 9 minutes east 7 chains 42 links, north 3 minutes east 4 chains 61 links, north 24 degrees 47 minutes east 7 chains 63½ links, north 29 degrees 59 minutes east 7 chains 96 links, north 41 degrees 35 minutes east 6 chains 37½ links, and north 9 degrees 59½ minutes east 1 chain 54½ links respectively to the south boundary of portion 50; thence on the north by that boundary bearing east 1 chain 1½ links; thence towards the south-east, the east, and the south by lines bearing south 9 degrees 59½ minutes west 2 chains and ¼ of a link, south 41 degrees 35 minutes west 6 chains 55½ links, south 29 degrees 59 minutes west 7 chains 81½ links, south 24 degrees 47 minutes west 7 chains 37½ links, south 3 minutes west 5 chains 12 links, south 72 degrees 9 minutes west 8 chains 43½ links, north 75 degrees 56 minutes west 9 chains 50½ links, and north 66 degrees 37 minutes west 5 chains 70½ links respectively to the aforesaid south-western boundary of portion 28; and on the south-west by that boundary bearing north 22 degrees 43 minutes west 1 chain 44½ links, to the point of commencement,—be the said several dimensions a little more or less, containing 5 acres and 31 perches or thereabouts, and said to be in the possession and occupation of Robert Barbour.

In witness whereof I have hereunto set my Hand, and caused the Great Seal of the Colony to be hereto affixed, at Government House, Sydney, this fourteenth day of May, in the year of our Lord one thousand eight hundred and ninety-four, and in the fifty-seventh year of Her Majesty's Reign.

By His Excellency's Command,

WILLIAM JOHN LYNE.

GOD SAVE THE QUEEN!

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

PUBLIC WORKS ACT OF 1888.
(RESUMPTION OF LAND FOR DEVIATION OF ROAD FROM ROSEWOOD TO COPPABELLA.)

Ordered by the Legislative Assembly to be printed, 29 May, 1894.

**NOTIFICATION OF RESUMPTION OF LAND UNDER
THE "PUBLIC WORKS ACT OF 1888," 51 VICTORIA
No. 37.**

NEW SOUTH WALES, } Proclamation by His Excellency The
to wit. } Right Honourable Sir ROBERT WILLIAM
DUFF, a Member of Her Majesty's Most
Honourable Privy Council, a Knight
(L.S.) } Grand Cross of the Most Distinguished
Order of Saint Michael and Saint George,
Governor and Commander-in-Chief of
R. W. DUFF, } the Colony of New South Wales and its
Governor. } Dependencies.

WHEREAS I, Sir ROBERT WILLIAM DUFF, the Governor aforesaid, with the advice of the Executive Council, have directed that a certain public work, that is to say, Deviation of the Road from Rosewood to Coppabella, through portion 15, parish of Craven, county of Selwyn, in the said Colony, the estimated cost of which does not exceed twenty thousand pounds, shall be carried out under the provisions of the "Public Works Act of 1888," as an authorised work by the Minister for Public Works as Constructing Authority; and that the land described in the Schedule hereto, which is in my opinion required for carrying out the said work, shall be acquired by taking the same under the "Lands for Public Purposes Acquisition Act," as adopted by the "Public Works Act of 1888": Now, therefore, I, the said Governor, with the advice aforesaid, in pursuance of the "Public Works Act of 1888," do declare by this notification, to be published in the Government Gazette and in one or more newspapers published or circulated in the Police District wherein the said land is situated, that the Crown Land comprised within the description set forth in the Schedule hereto has been appropriated, and the private property within such description has been resumed, for the public purpose aforesaid, to the intent that upon the publication of this notification in the Gazette, the said land described

in the said Schedule hereto shall forthwith be vested in the said Constructing Authority, as a corporation sole on behalf of Her Majesty, for the purposes of the "Public Works Act of 1888," for an estate in fee simple in possession, freed and discharged from all trusts, obligations, estates, interests, contracts, charges, rates, rights-of-way, or other easements whatsoever; and to the further intent that the legal estate therein, together with all powers incident thereto or conferred by the said last-mentioned Act, shall be vested in such Constructing Authority as a Trustee; and I declare that the following is the Schedule of land hereinbefore referred to:—

SCHEDULE.

All that piece or parcel of land situate in the parish of Craven, county of Selwyn, and Colony of New South Wales, being part of portion 15. Commencing on the north boundary of that portion, at a point distant 27 chains 23 links from its north-east corner; and bounded thence by that boundary bearing west 7 chains 51 $\frac{1}{10}$ links; thence by lines bearing south 46 degrees 16 minutes east 4 chains 43 $\frac{1}{2}$ links and north 54 degrees 39 minutes east 5 chains 28 $\frac{1}{10}$ links, to the point of commencement, be the said several dimensions all a little more or less, containing 1 acre and 24 perches or thereabouts and said to be in the possession of J. Brock, Wm. M'Eachern and W. H. Mortimer.

In witness whereof I have hereunto set my Hand, and caused the Great Seal of the Colony to be hereto affixed, at Government House, Sydney, this fourteenth day of May, in the year of our Lord one thousand eight hundred and ninety-four, and in the fifty-seventh year of Her Majesty's Reign.

By His Excellency's Command,

WILLIAM JOHN LYNE.

GOD SAVE THE QUEEN!

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

PUBLIC WORKS ACT OF 1888.
(RESUMPTION OF LAND FOR ALIGNMENT OF STREETS IN THE VILLAGE OF CUDAL.)

Ordered by the Legislative Assembly to be printed, 21 February, 1894.

**NOTIFICATION OF RESUMPTION OF LAND UNDER
THE "PUBLIC WORKS ACT OF 1888," 51 VICTORIA
No. 37.**

NEW SOUTH WALES, } Proclamation by His Excellency The
to wit. } Right Honourable Sir ROBERT WILLIAM
DUFF, a Member of Her Majesty's Most
(L.S.) } Honourable Privy Council, a Knight
Grand Cross of the Most Distinguished
Order of Saint Michael and Saint George,
R. W. DUFF, } Governor and Commander-in-Chief of
Governor. } the Colony of New South Wales and its
Dependencies.

WHEREAS I, Sir ROBERT WILLIAM DUFF, the Governor aforesaid, with the advice of the Executive Council, have directed that a certain public work, that is to say, an Alignment of Streets in the village of Cudal, in the said Colony, the estimated cost of which does not exceed twenty thousand pounds, shall be carried out under the provisions of the "Public Works Act of 1888," as an authorised work by the Minister for Public Works as Constructing Authority, and that the land described in the Schedule hereto, which is in my opinion required for carrying out the said work, shall be acquired by taking the same under the "Lands for Public Purposes Acquisition Act," as adopted by the "Public Works Act of 1888": Now, therefore, I, the said Governor, with the advice aforesaid, in pursuance of the "Public Works Act of 1888," do declare by this notification, to be published in the Government Gazette and in one or more newspapers published or circulated in the Police District wherein the said land is situated, that the Crown Land comprised within the description set forth in the Schedule hereto has been appropriated, and the private property within such description has been resumed, for the public purpose aforesaid, to the intent that upon the publication of this notification in the Gazette, the said land described in the said Schedule hereto shall forthwith be vested in the said Constructing Authority as

a Corporation sole on behalf of Her Majesty, for the purposes of the said "Public Works Act of 1888," for an estate in fee simple in possession, freed and discharged from all trusts, obligations, estates, interests, contracts, charges, rates, rights-of-way, or other easements whatsoever; and to the further intent that the legal estate therein, together with all powers incident thereto or conferred by the said last-mentioned Act, shall be vested in such Constructing Authority as Trustee: And I declare that the following is the Schedule of land hereinbefore referred to:—

SCHEDULE.

All that piece or parcel of land situate in the village and parish of Cudal, county of Ashburnham, and Colony of New South Wales, being part of allotment 5 of section 2: Commencing at the north-west corner of that allotment; and bounded thence by its west boundary, being the east boundary of Cross-street, bearing south 1 chain $1\frac{1}{5}$ links; thence by a line bearing north-easterly 1 chain $76\frac{1}{8}$ links; and thence by the north boundary of the aforesaid allotment bearing west 1 chain $44\frac{7}{8}$ links, to the point of commencement,—be the said several dimensions all a little more or less, containing $11\frac{1}{8}$ perches or thereabouts, and said to be in the possession of Samuel Landauer.

In witness whereof I have hereunto set my Hand, and caused the Great Seal of the Colony to be hereto affixed, at Government House, Sydney, this ninth day of February, in the year of our Lord one thousand eight hundred and ninety-four, and in the fifty-seventh year of Her Majesty's Reign.

By His Excellency's Command,

WILLIAM JOHN LYNE.

GOD SAVE THE QUEEN!

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

PUBLIC WORKS ACT OF 1888.
(RESUMPTION OF LAND FOR APPROACH TO URIARRA FERRY.)

Ordered by the Legislative Assembly to be printed, 1 May, 1894.

NOTIFICATION OF RESUMPTION OF LAND UNDER
THE "PUBLIC WORKS ACT OF 1888," 51 VICTORIA
No. 37.

NEW SOUTH WALES, } Proclamation by His Excellency The
to wit. } Right Honourable Sir ROBERT WILLIAM
DUFF, a Member of Her Majesty's Most
Honourable Privy Council, a Knight
(L.S.) } Grand Cross of the Most Distinguished
Order of Saint Michael and Saint George,
R. W. DUFF, } Governor and Commander-in-Chief of
Governor. } the Colony of New South Wales and its
Dependencies.

WHEREAS I, Sir ROBERT WILLIAM DUFF, the Governor aforesaid, with the advice of the Executive Council, have directed that a certain public work, that is to say, a way of approach to Uriarra Ferry, in the said Colony, the estimated cost of which does not exceed twenty thousand pounds, shall be carried out under the provisions of "The Public Works Act of 1888," as an authorised work by the Minister for Public Works as Constructing Authority; and that the land described in the Schedule hereto, which is in my opinion required for carrying out the said work, shall be acquired by taking the same under "The Lands for Public Purposes Acquisition Act," as adopted by "The Public Works Act of 1888": Now, therefore, I, the said Governor, with the advice aforesaid, in pursuance of "The Public Works Act of 1888," do declare by this notification, to be published in the Government Gazette, and in one or more newspapers published or circulated in the Police District wherein the said land is situated, that the Crown Land comprised within the description set forth in the Schedule hereto has been appropriated, and the private property within such description has been resumed, for the public purpose aforesaid, to the intent that upon the publication of this notification in the Gazette, the said land described in the said Schedule hereto shall forthwith be vested in the said Constructing Authority, as a corporation sole on behalf of Her Majesty, for the purposes of "The Public Works Act of 1888," for an estate in fee simple in

possession, freed and discharged from all trusts, obligations, estates, interests, contracts, charges, rates, rights-of-way, or other easements whatsoever; and to the further intent that the legal estate therein, together with all powers incident thereto or conferred by the said last-mentioned Act, shall be vested in such Constructing Authority as a Trustee: And I declare that the following is the Schedule of land hereinbefore referred to:—

SCHEDULE.

All that piece or parcel of land situate in the parish of Yarralumla, county of Murray, and Colony of New South Wales, being part of Thomas Walker's 850 acres: Commencing at the junction of the right bank of the Murrumbidgee River with the south-western boundary of a road 1 chain wide (catalogued R. 3,251-1,603, Lands Department): and bounded thence by the said boundary of road being lines bearing south 63 degrees 18 minutes east 29 $\frac{1}{2}$ links, south 13 degrees 16 minutes east 4 chains 50 $\frac{1}{2}$ links, and south 39 degrees 23 minutes east 2 chains 60 $\frac{1}{2}$ links; thence by lines bearing south 33 degrees 27 minutes west 1 chain 54 $\frac{1}{2}$ links, and north 70 degrees 56 minutes west 3 chains 13 $\frac{1}{2}$ links to the aforesaid bank of river; and thence by that bank downwards 6 chains 85 links, to the point of commencement,—be the said several dimensions all a little more or less; containing 1 acre 1 rood 12 $\frac{1}{2}$ perches, or thereabouts, and said to be in the possession of E. H. Cliffe.

In witness whereof I have hereunto set my Hand, and caused the Great Seal of the Colony to be hereto affixed, at Government House, Sydney, this fourteenth day of April, in the year of our Lord one thousand eight hundred and ninety-four, and in the fifty-seventh year of Her Majesty's Reign.

By His Excellency's Command,

WILLIAM JOHN LYNE.

GOD SAVE THE QUEEN!

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

LENNOX BRIDGE, PARRAMATTA.

(RETURN RESPECTING WIDENING OF.)

Ordered by the Legislative Assembly to be printed, 14 February, 1894.

Minute Paper.

Department of Public Works,
Roads and Bridges and Sewerage Branch, Sydney, 14th February, 1894.

Subject:—Lennox Bridge, Parramatta.

MR. HUGH TAYLOR, M.P., is to ask the Minister in the House to-day when it is likely that tenders will be invited for the widening of Lennox Bridge which, in view of the increased traffic over it, is, he states, becoming dangerous to travellers.

Mr. Taylor has been agitating for this work for some years, and a sum of £4,000 was voted for it on 1884 Loan Estimates; but the money was not expended in view of the construction of new bridges at the Gas Works and at O'Connell-street, which, it was represented, would take part of the traffic, and also in view of the late Commissioner's opinion that the proposed Dural Railway would also take much of the traffic. This railway line, however, has not been built.

In October, 1891, Mr. W. A. Smith, who, in accordance with the Ministerial promise was called upon for a report on this matter, stated that he had gone into the question and could not obtain any information that would justify him in recommending an expenditure of £4,000, which was the estimated cost of giving the roadway an additional width of 22ft. (existing roadway 30ft.) On Mr. Taylor continuing to press the matter, Mr. J. A. McDonald (the late Engineer for Bridges) and Mr. W. A. Smith were deputed to make a joint inspection, and these gentlemen reported that what Mr. Taylor wanted was the substitution of an iron superstructure for the existing stone arch, and this would necessitate the destruction of the present bridge with the exception of the foundations of the abutments and wing-walls, and the erection of an iron bridge at a total estimated cost of £7,300. They considered that the advantages to be gained would not be commensurate with the expenditure of so large a sum. Mr. Hickson minutated that he did not think there was any justification for the work, and a copy of above report was sent to Mr. Taylor.

I am still of opinion there would be no justification for this expenditure.

R.H., 14/2/94.

Under Secretary.

1894.

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

PUBLIC WORKS ACT OF 1888.

(RESUMPTION OF LAND FOR NATIONAL DEFENCE, TOWN AND PARISH OF WOLLONGONG.)

Ordered by the Legislative Assembly to be printed, 7 February, 1894.

NEW SOUTH WALES, } Proclamation by His Excellency The
to wit. } Right Honourable Sir ROBERT WILLIAM
DUFF, a Member of Her Majesty's Most
(L.S.) } Honourable Privy Council, a Knight
Grand Cross of the Most Distinguished
Order of Saint Michael and Saint George,
R. W. DUFF, } Governor and Commander-in-Chief of
Governor. } the Colony of New South Wales and its
Dependencies.

WHEREAS by the "Wollongong Harbour Trust Act, 1889," certain pieces or parcels of Crown Lands, according to the descriptions contained in the First Schedule to the said Act, were declared to be vested in the Commissioners appointed by the said Act for the purposes thereof, but subject to the right of Her Majesty to resume possession at any time, without payment of compensation, of any land required for purposes of national defence, or for giving ingress, egress, and regress to and from the shore: And whereas the land described in the Schedule hereto, which forms part of the lands described in the First Schedule to the said Act is now required for purposes of national defence: Now, therefore, I, the said Sir ROBERT WILLIAM DUFF, as such Governor as aforesaid, with the advice of the Executive Council of the said Colony, do hereby, in pursuance of the right reserved to Her said Majesty the Queen as aforesaid, in the name and on behalf of Her said Majesty the Queen, by this Proclamation, resume and take into the possession of Her said Majesty the Queen, the said land described in the said Schedule hereto, to the intent that the same may at all times hereafter be used for the purposes of national defence:—

THE SCHEDULE REFERRED TO.

All that piece or parcel of land situate in the town and parish of Wollongong, county of Camden, and Colony of New South Wales: Commencing at a point bearing north 3 degrees 20 minutes west 11 chains 59 links from the intersection of the south-eastern side of Gipps-street with the eastern side of Corrimal-street; and bounded thence on the south-west by a line bearing north 33 degrees 5 minutes west 4 chains 54 links; thence on the north-west by a line bearing north 56 degrees 52 minutes east 1 chain 35 links; thence on the north-east by lines bearing south 77 degrees 55 minutes east 1 chain 8 links; south 33 degrees 7 minutes east 1 chain 15 links; south 33 degrees 11 minutes east 1 chain 11 links; and south 1 degree 59 minutes east 1 chain 77 links; and thence on the south-east by a line bearing south 56 degrees 53 minutes west 1 chain 20 links, to the point of commencement,—as surveyed and shown on plan catalogued Ms. 643 Sy.; containing by admeasurement 3 roods 18 perches, and said to be in the possession of the Wollongong Harbour Trust.

In witness whereof I have hereunto set my Hand, and caused the Great Seal of the Colony to be hereto affixed, at Government House, Sydney, this twenty-fourth day of January, in the year of our Lord one thousand eight hundred and ninety-four, and in the fifty-seventh year of Her Majesty's Reign.

By His Excellency's Command,
WILLIAM JOHN LYNE.
GOD SAVE THE QUEEN!

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

NAVAL AND MILITARY DEFENCES.

(EXPENDITURE.)

RETURN to an *Order* made by the Honorable the Legislative Assembly of New South Wales, dated 14th November, 1893, That there be laid upon the Table of this House a Return showing,—

- “ (1.) The total expenditure incurred for Naval and Military Defences by the various Australasian Colonies during the year 1892.
“ (2.) The total expenditure incurred for Naval and Military Defences in New South Wales since 1856 to 1892.”

(*Mr. Wright.*)

RETURN showing the Expenditure upon Military and Naval Forces for the various Australasian Colonies for the year 1892, and the Expenditure upon Military and Naval Defences for New South Wales from 1857 to 1892.

EXPENDITURE upon Military and Naval Forces for the year 1892.

New South Wales	£350,442
Victoria ...	237,551
Queensland ...	106,550
South Australia...	56,322
Western Australia	7,417
Tasmania ...	19,210
New Zealand ...	83,446
	£860,938

MILITARY and Naval Expenditure from 1857 to 1892.

[32]

Sydney: Charles Potter, Government Printer—1894.

Year.	Permanent Military Forces.	Volunteer Military Forces.	Expenditure upon Fortifications, Military Buildings, Repairs, Warlike Material, Stores, &c., from Revenue.	Expenditure upon Fortifications, Military Buildings, Repairs, Warlike Material, Stores, &c., from Loans.	Towards the support of the Imperial Troops in the Colony.	Ordnance and Barrack Department.	Naval Brigade, Naval Artillery, Torpedo Defence, Training Ship, &c.	Proportion payable by Colony of New South Wales, in terms of the "Australasian Naval Force Act of 1887."	Total.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1857...	28,985 5 2	538 1 10	2,301 7 6	28,000 17 6	.....	.....	537 14 5	.....	.....
1858...	17,853 2 0	.....	6,120 18 3	4,516 9 11	.....	.....	3,290 0 11	.....	.....
1859...	15,385 16 10	1,361 3 4	1,628 6 11	1,955 2 9	.....	.....	6,089 8 1	.....	.....
1860...	12,085 1 9	13,268 19 8	5,069 10 0	.....	.....	.....	2,909 18 9	.....	.....
1861...	28,302 10 5	10,451 2 0	29,331 19 1	181 5 0	.....	.....	2,274 13 2	.....	.....
1862...	13,263 2 11	5,510 0 8	5,414 15 7	.....	.....	.....	4,329 18 3	.....	.....
1863...	9,154 9 5	5,105 4 2	4,586 2 4	.....	.....	.....	1,942 12 11	.....	.....
1864...	7,805 9 0	2,061 8 7	15,022 10 2	149 0 0	.....	.....	1,053 11 10	.....	.....
1865...	9,573 19 5	3,878 1 2	1,069 8 6	.....	.....	.....	2,508 4 5	.....	.....
1866...	.....	6,286 0 6	2,079 2 3	9,123 9 5	9,801 11 3	.....	3,521 16 11	.....	.....
1867...	.....	5,563 17 1	3,008 17 8	.....	15,188 12 3	.....	3,771 10 3	.....	.....
1868...	.....	6,394 1 11	2,298 16 7	9,011 5 7	22,131 6 3	.....	4,096 2 0	.....	.....
1869...	.....	8,898 1 6	5,713 4 2	.....	16,666 12 9	.....	3,569 17 11	.....	.....
1870...	.....	7,463 11 10	1,480 15 6	.....	11,639 7 7	1,657 10 7	3,611 14 9	.....	.....
1871...	8,302 7 10	10,262 18 9	11,150 5 6	40,697 13 2	.....	2,236 10 10	3,964 6 1	.....	.....
1872...	23,628 9 4	11,285 1 4	5,414 19 0	24,465 4 8	.....	2,726 11 7	3,995 8 6	.....	.....
1873...	9,954 12 9	18,814 5 8	16,779 6 10	35,134 4 8	.....	2,978 11 2	4,886 2 0	.....	.....
1874...	10,824 4 8	18,280 4 3	45,246 18 4	21 11 3	.....	6,870 19 2	5,034 8 5	.....	.....
1875...	16,612 17 11	6,873 9 8	1,667 12 11	368 4 2	.....	13,937 11 1	5,213 1 9	.....	.....
1876...	21,830 1 11	14,309 13 5	8,917 13 0	4,506 1 7	.....	17,327 3 0	5,548 3 4	.....	.....
1877...	35,790 13 5	7,115 1 2	55,468 19 11	3,735 5 1	.....	18,887 10 0	5,565 6 11	.....	.....
1878...	40,544 19 9	23,009 17 0	4,136 11 5	33,266 12 11	.....	19,897 19 9	4,618 3 7	.....	.....
1879...	39,813 8 2	25,890 14 3	4,160 17 5	21,270 7 7	.....	22,320 10 1	5,219 2 9	.....	.....
1880...	31,965 6 1	29,841 19 2	4,281 1 0	14,581 13 3	.....	6,623 9 7	5,683 1 4	.....	.....
1881...	30,090 15 1	36,530 13 9	4,376 8 4	.....	.....	9,216 15 9	5,810 2 9	.....	.....
1882...	35,194 14 8	36,539 11 11	10,578 16 3	37,756 10 10	.....	14,074 1 0	12,857 18 9	.....	.....
1883...	36,196 8 8	38,810 10 6	24,627 15 8	24,811 7 7	.....	17,919 16 1	15,201 18 6	.....	.....
1884...	36,060 8 5	48,094 10 8	45,601 12 10	4,682 16 11	.....	17,968 13 3	14,960 4 10	.....	.....
1885...	42,917 1 1	144,952 4 1	12,783 16 11	54,728 14 8	.....	23,664 5 8	18,895 3 9	.....	.....
1886...	52,793 5 2	117,954 0 5	14,470 12 0	67,814 2 3	.....	15,270 5 11	18,695 18 9	.....	.....
1887...	47,674 5 9	80,904 14 4	11,334 1 7	8,350 7 11	.....	16,678 8 10	6,669 13 1	.....	.....
1888...	52,412 16 11	84,439 14 11	4,857 4 6	113,296 5 9	.....	16,769 7 8	9,210 1 7	.....	.....
1889...	70,496 3 8	101,546 0 6	7,738 1 5	56,439 19 6	.....	26,676 14 8	11,582 0 8	.....	.....
1890...	70,352 13 11	111,684 11 0	20,425 5 11	46,979 14 9	.....	21,889 18 5	11,194 12 1	.....	.....
1891...	78,290 10 9	126,632 3 11	35,036 19 3	105,896 19 9	.....	34,783 15 11	12,084 12 9	28,000 0 0	.....
1892...	90,429 10 9	100,550 0 11	18,081 16 5	53,019 4 5	.....	35,282 10 2	11,608 16 6	41,470 13 6	.....
	1,024,564 13 2	1,272,131 15 10	452,862 10 11	804,710 12 10	75,427 10 1	365,659 0 2	242,011 14 3	69,470 13 6	4,306,838 10 9
									Naval Station, Port Jackson 225,610 0 0
									Value of land alienated for Land Orders—Volunteers... .. 161,500 0 0
									£ 4,693,948 10 9

This return does not include cost of Soudan Contingent, £121,630.

866

12

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

NAVAL TORPEDO DEFENCE OF THE COLONY.
(RETURN RESPECTING PAY AND ALLOWANCES TO OFFICERS AND MEN OF.)

Ordered by the Legislative Assembly to be printed, 20 February, 1894.

[Laid upon the Table of this House in answer to Question No. 2, of 20 February, 1894.]

Question.

2. MR. TONKIN asked THE COLONIAL SECRETARY,—What is the pay and allowances that would be received by officers and men in the Royal Navy holding similar positions in England to the officers and men employed in the Naval Torpedo Defence of this Colony?

Answer.

It is not known exactly what pay and allowances would be received by officers and men in the Royal Navy holding similar positions in England to the officers and men employed in the Naval Torpedo Defence of the Colony; but it is believed that the attached scale of pay and allowances is in force there:—

THE Pay and Allowances that would be received by officers and men in the Royal Navy holding similar positions in England to the officers and men employed in the Naval Torpedo Defence of this Colony.

Position.	Full Pay.	Lodging allowance.	Allowance in lieu of provisions.	In charge of machinery and stores.	Total.
	£ s. d.	£ s. d.			£ s. d.
Officer-in-charge, with rank of Commander	365 0 0	50 0 0	1s. 6d. per diem	.....	442 7 6
Engineer	200 15 0	50 0 0	1s. 6d. „	1s. 6d. per diem	305 10 0
Artificer	118 12 6	1s. 6d. per diem	1s. 6d. „	.....	178 7 6
Stoker	36 0 0	1s. 1d. „	1s. 6d. „	.....	83 12 11

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

PERMANENT FORCES OF THE COLONY.
(PARTICULARS RESPECTING.)

Ordered by the Legislative Assembly to be printed, 14 March, 1894.

[Laid upon the Table of this House in answer to Question No. 12, of 14 March, 1894.]

Question.

12. MR. DANAHY asked THE COLONIAL SECRETARY,—
- (1.) Is it a fact that some of the officers of the Permanent Forces of the Colony have been, or are about to be, paid an extra amount of money, computed upon the basis of the 1894 Estimate, for their services during 1893?
 - (2.) If so, will he state whether it is intended to make the reductions in pay as well as the increases retrospective?
 - (3.) Will he also explain what is meant by "South African pay and Colonial allowances"?
 - (4.) Will he give the names of the officers who have or are about to receive such retrospective pay, and the amount to be paid to each officer?

Answer.

- (1.) No; the emoluments accorded to officers in the 1893 Estimates have been reconstructed upon the same basis as that laid down for 1894.
- (2.) The reconstruction proposed for 1893 has been made retrospective to the 1st January of that year.
- (3.) The reconstruction of pay and allowances to officers of the Permanent Forces required to be based upon some generally accepted basis, and that laid down in the Royal Warrant of Pay for officers, dated 1892, has been accepted as that which exactly meets the conditions of life, and the reductions in pay and allowances necessitated by the retrenchment required.
- (4.) Attached list gives the information required, showing the balance of reconstructed pay transferred to officers stated:—

Name of Officer.	Amount paid to each Officer as approved by Executive Council.	Name of Officer.	Amount paid to each Officer as approved by Executive Council.
	£ s. d.		£ s. d.
Mackenzie, Lieutenant-Colonel	167 19 11	Airey, H. P., Major, Permanent Artillery...	84 15 5
Taunton, Lieutenant-Colonel	191 1 8	Savage, Major, Brigade Major.....	109 0 9
Williams, Brigade Surgeon.....	112 0 0	Kyngdon, Captain, Garrison Artillery	58 2 7
Bridges, Major	55 14 11	Le Mesurier, Captain, Garrison Artillery	99 19 1
Bartlett, Major	49 10 0	Sandford, Captain, Garrison Artillery	108 1 5
Lee, Captain, Cavalry	109 19 4	Dangar, Captain, Field Artillery	192 0 6
Sparrow, Captain, Mounted Infantry.....	109 19 4	Close, Captain, Adjutant Permanent Artillery...	9 18 9
Morris, Captain, Adjutant, P.P. Artillery.....	70 19 3	Luscombe, Lieutenant, Permanent Artillery...	21 3 1
Bouverie, Captain, Adjutant, 1st Regiment	65 13 11	Lamb, Lieutenant, Permanent Artillery.....	50 4 7
Baily, Captain, Adjutant, 2nd Regiment	65 13 11	Taylor, Lieutenant, Permanent Artillery	25 0 11
Hill, Captain, Adjutant, 3rd Regt., to 30 Oct....	43 15 0	Owen, Lieutenant, Permanent Artillery.....	55 11 3
Boam, Captain, Adjutant, 4th Regiment	65 13 11	Bulmer, Lieutenant, Permanent Artillery	8 17 11
Lee, Captain, Adjutant, S.M. Miners.....	20 9 4	Antill, Lieutenant, Field Artillery	25 11 3
Solomon, Claude	79 8 9	Jenkins, Lieutenant, Field Artillery	89 11 3
Spalding, Colonel, O.C.A.F.* .....	.....	Spalding, Lieutenant, Field Artillery† .....	.....
Airey, Colonel, Permanent Artillery†.....	.....	Blanchard, Major, A.C.G. of O.....	118 0 0
Murray, Major, Permanent Artillery.....	6 11 7	Olpherts, Captain, D.A.C.G. of O.....	60 8 9
Baynes, Major, Permanent Artillery.....	21 7 9		

* £3 15s. overpaid to be recovered. † £3 5s. 3d. overpaid to be recovered. ‡ Temporarily attached.

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

MILITARY.

(MINUTE BY MAJOR-GENERAL HUTTON REGARDING PROVISION BEING MADE FOR SHORT PERIODS OF CONTINUOUS TRAINING.)

Ordered by the Legislative Assembly to be printed, 21 March, 1894.

Question.

5. Mr. McCOURT to ask THE COLONIAL SECRETARY,—

- (1.) Has Major-General Hutton, in a memorandum dated 7th March, 1894, recommended that the sum of £11,331, saved by reduction in pay of the Partially-paid Forces, should be applied to holding camps of five days' continuous training in various parts of the Colony, thus allowing each Volunteer private £7 12s. as his pay for the year?
- (2.) Has the Commandant, in same memorandum, practically stated that unless this or some similar scheme of continuous training is adopted the Volunteer Forces will be disintegrated?
- (3.) Has he come to any conclusion with regard to the Commandant's memorandum of 7th March, 1894?

Answer.

Major-General E. T. H. Hutton, A.D.C., Commanding Military Forces, to The Principal Under Secretary.
Subject:—Estimates, 1894.

Sir,

Military Staff Office, Head-quarters, 7 March, 1894.

Herewith I have the honor to forward a Minute for the Colonial Secretary on the subject of the Naval and Military Estimates for 1894, a copy of which I received yesterday.

I have, &c.,

EDW. T. H. HUTTON,

Major-General and A.D.C., Commanding Forces, New South Wales.

Major-General E. T. H. Hutton, A.D.C., Commanding Military Forces, to The Colonial Secretary.

Subject:—Military Estimates for 1894.

Head-quarters Staff Office, Victoria Barracks, Sydney, 7 March, 1894.

1. I HAVE to acknowledge the receipt of the copy of the Naval and Military Estimates forwarded to me yesterday.
2. I note that while my proposed reduction in pay to the Partially-paid Forces has been accepted, the pay and expenses for the complete period of continuous training in camps of instruction, upon which my proposal was based, has been omitted. I find that the total amount of pay which each private soldier therefore can earn in 1894 will only amount to £6, in place of £9 12s.
3. This sudden reduction of pay and emolument to the Partially-paid Force entailed by the existing curtailed Estimates will, in my opinion, result in a serious disintegration of the Force, upon which the Defence of the Colony must depend, and a feeling of discontent will undoubtedly be created in all ranks.
4. I have pointed out in a previous memorandum that the sum of £11,331 will be saved by the reduction in pay to the Partially-paid Force as proposed by me.
5. Having in view the continued financial depression in the Colony, and your wishes as to the strictest economy, I would suggest that this sum of £11,331 be placed on the Additional or Supplementary Estimates for 1894, and that I may be empowered to make use of the same for the purpose of giving as much continuous training to the Partially-paid Force as can be carried out for that sum. Each private soldier under this arrangement would be able to earn £7 12s., and I could hold camps of continuous training at various places in the Colony for short periods of five days at suitable times during the year.
6. The expenses of such local camps may be thus summarised:—

	£						£
Amount allowed—saving of reduction of pay on 1893	11,331						7,440
Expenses for small camps on 1894 Estimates	1,605						2,516
	£12,936						710
							1,621
							488
							150
							£12,925

EDW. T. H. HUTTON,

Major-General and A.D.C., Commanding Forces, New South Wales.

1894.

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

HYDRO-PNEUMATIC GUNS.

(RETURN RESPECTING.)

*Ordered by the Legislative Assembly to be printed, 23 May, 1894.**[Laid upon the Table of this House in answer to Question No. 4, of 23rd May, 1894.]*

Question.

4. MR. FEGAN asked THE COLONIAL SECRETARY,—

- (1.) Did the gun which burst on board H.M.S. "Cordelia" in any respect whatever resemble the gun with which an accident occurred at Fort Scratchley?
- (2.) Was the cause of the bursting of the gun on H.M.S. "Cordelia" ever ascertained?
- (3.) Was the bursting of that gun in any way attributable to the muzzle of the gun "drooping," as the result of repeated firing?
- (4.) Has any report ever been made relative to the 6-inch breech-loading guns in this Colony to the effect that they are liable to suffer from muzzle-drooping?
- (5.) Have any of the 6-inch breech-loading guns in this Colony been sent to England to be muzzle-chased, so as to strengthen them and guard against the possibility of their muzzles drooping?
- (6.) How many of the 6-inch breech-loading guns in this Colony have been sent to England to be muzzle-chased?
- (7.) Was the gun at Fort Scratchley one which had been so dealt with?
- (8.) How many 6-inch breech-loading guns are there in the Colony?
- (9.) Do experts consider that muzzle-drooping would cause a projectile or shell to become impacted in a gun, and that the bursting of the gun would follow?
- (10.) Are the 9-inch anti-bombardment breech-loading guns recently mounted on the coast liable to muzzle-drooping?
- (11.) Will he cause an inquiry to be made with a view to determining whether they require to be muzzle-chased, or strengthened in any other way?
- (12.) What is the cost of each 6-inch breech-loading gun, inclusive of emplacements, mounting, &c.?
- (13.) What is the cost of each 9-inch breech-loading gun, inclusive of emplacements, mounting, &c.?
- (14.) What is the cost per round, with projectile or shell, of firing the 6-inch breech-loading guns?
- (15.) What is the cost per round, with projectile or shell, of firing the 9-inch breech-loading guns?
- (16.) What is the life of a 6-inch breech-loading gun?
- (17.) What is the life of a 9-inch breech-loading gun?

Answer.

- (1.) The only point of resemblance is that the calibre is the same.
- (2.) Yes.
- (3 and 4.) No.
- (5.) They are being chase-hooped, but not by reason of any fear of the muzzles drooping.
- (6.) Six.
- (7.) No.
- (8.) Fourteen.
- (9.) It would depend on the amount of "droop." "Drooping" would not necessarily cause a gun to burst.
- (10.) No.
- (11.) An inquiry does not appear to be necessary.
- (12.) Cost of gun and mountings, &c., £2,675; emplacement, £2,200.
- (13.) Cost of gun and mounting, &c., £9,183; emplacement, £4,100.
- (14.) With common shell, cast iron, £4 1s. 3d.; with common shell, cast steel, £6 1s. 4d. With Shrapnell shell, cast iron, £4 11s. 1d.; with Shrapnell shell, cast steel, £6 16s. 1d.
- (15.) With common shell, steel, £17 17s. 8d.; with common shell, iron, £13 1s. 8d.
- (16.) Probable first life of 6" B.L. gun, before it ceases to properly rotate its projectile, 395 rounds (full charges); with reduced or practice charges, wear of bore about one-fourth that which would take place with full charges. At the end of first life the gun would be re-lined.
- (17.) 9.2" B.L. gun, first life, 196 rounds (full charges). The gun would then be re-lined.

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

REPORT FROM THE SELECT COMMITTEE

ON THE

CASE OF STAFF-SERGEANT W. JIFFKINS;

TOGETHER WITH THE

PROCEEDINGS OF THE COMMITTEE

AND

MINUTES OF EVIDENCE.

ORDERED BY THE LEGISLATIVE ASSEMBLY TO BE PRINTED,

9 *May*, 1894.

SYDNEY : CHARLES POTTER, GOVERNMENT PRINTER.

1894.

1894.

EXTRACTS FROM THE VOTES AND PROCEEDINGS OF THE
LEGISLATIVE ASSEMBLY.

VOTES NO. 40. TUESDAY, 24 APRIL, 1894.

10. CASE OF STAFF-SERGEANT W. JIFFKINS:—Mr. G. D. Clark moved, pursuant to Notice,—
- (1.) That a Select Committee be appointed, with power to send for persons and papers, to inquire into and report upon the case of Staff-sergeant W. Jiffkins.
- (2.) That such Committee consist of Mr. Bruncker, Mr. Chapman, Mr. Dawson, Mr. O'Sullivan, Mr. Waddell, Mr. McCourt, Mr. Fuller, Mr. Darnley, and the Mover.
- Debate ensued.
Question put.
The House divided.

Ayes, 30.

Mr. Sheldon,	Mr. Cann,
Mr. Fegan,	Mr. Cullen,
Mr. Neild,	Mr. G. D. Clark,
Mr. Murphy,	Mr. Darnley,
Mr. Nicoll,	Mr. Houghton,
Mr. Hindle,	Mr. Wise,
Mr. Gardiner,	Sir Henry Parkes,
Mr. Wall,	Mr. Perry,
Mr. Sharp,	Mr. Hutchinson,
Mr. Edden,	Mr. Parkes,
Mr. Joseph Abbott,	Mr. Cook,
Mr. Rae,	Mr. J. D. FitzGerald.
Mr. Scobie,	<i>Tellers,</i>
Mr. Black,	
Mr. Langwell,	Mr. Levien,
Mr. Cotton,	Mr. McCourt.

Noes, 12.

Mr. Kidd,
Mr. Young,
Mr. Suttor,
Mr. Copeland,
Mr. Slattery,
Sir George Dibbs,
Mr. Barbour,
Mr. Torpy,
Mr. E. M. Clark,
Mr. Garvan.

Tellers,

Mr. Hayes,
Mr. Hassall.

And so it was resolved in the affirmative.

VOTES NO. 41. WEDNESDAY, 25 APRIL, 1894.

4. CASE OF STAFF-SERGEANT W. JIFFKINS:—Mr. G. D. Clark (*by consent*) moved, without Notice, That the Return to Order "Suspension of Staff Colour-sergeant William Jiffkins, Volunteer "Permanent Staff," laid upon the Table of this House during the Session of 1892-3, be referred to the Select Committee now sitting on "Case of Staff-sergeant W. Jiffkins." Question put and passed.

VOTES NO. 47. WEDNESDAY, 9 MAY, 1894.

6. CASE OF STAFF-SERGEANT W. JIFFKINS:—Mr. G. D. Clark, as Chairman, brought up the Report from, and laid upon the Table the Minutes of Proceedings of, and Evidence taken before, the Select Committee for whose consideration and report this subject was referred on 24th April, 1894. Ordered to be printed.

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1894.

CASE OF STAFF-SERGEANT W. JIFFKINS.

REPORT.

THE SELECT COMMITTEE of the Legislative Assembly appointed on 24th April, 1894, "with power to send for persons and papers to inquire into and report upon the case of Staff-sergeant W. Jiffkins," and to whom was referred, on 25th April, 1894, The Return to Order of Session 1892-3, "Suspension of Staff Colour-sergeant William Jiffkins, Volunteer Permanent Staff," have agreed to the following Report :—

1. Your Committee having examined the witnesses named in the List* * See list, p. 4. (whose evidence will be found appended hereto), find—

- (1.) That the facts as disclosed in the evidence show that Staff-sergeant Jiffkins was dismissed from the service on the uncorroborated statement of Warrant-officer Barnwell, that he saw Jiffkins copying from an official register.
- (2.) That the official register referred to had been out of use for a number of years, and that at the time it was lying open in the lavatory, and consequently accessible to all persons in the Department.
- (3.) That for a considerable time prior to the date of dismissal, disagreements between Warrant-officer Barnwell and Staff-sergeant Jiffkins had been of frequent occurrence, and that a recommendation by minute had been made by Major-General Richardson for their separation, which minute was not given effect to.

2. In view of all the circumstances, and taking into consideration his long services, your Committee are of opinion that Staff-sergeant Jiffkins has been harshly treated; and that had the recommendation to separate the two officers been carried out, he would probably not have been dismissed; and they therefore recommend his case to the favourable consideration of the Government.

G. D. CLARK,
Chairman.

No. 2 Committee Room,
Sydney, 9th May, 1894.

PROCEEDINGS OF THE COMMITTEE.

 WEDNESDAY, 25 APRIL, 1894.

MEMBERS PRESENT:—

Mr. G. D. Clark.

[In the absence of a quorum the meeting called for this day lapsed.]

 THURSDAY, 26 APRIL, 1894.

MEMBERS PRESENT:—

Mr. G. D. Clark,
Mr. Darnley,Mr. Chapman,
Mr. O'Sullivan.

Mr. G. D. Clark called to the Chair.

Entries from Votes and Proceedings appointing the Committee, and *referring* the Return to Order "Suspension of Staff Colour-sergeant William Jiffkins, Volunteer Permanent Staff," of Session 1892-3, read by the Clerk.

Committee deliberated.

Ordered,—That William Jiffkins be summoned to give evidence next meeting.

[Adjourned till Tuesday next, at *Half-past Ten* o'clock.]

 TUESDAY, 1 MAY, 1894.

MEMBERS PRESENT:—

Mr. G. D. Clark in the Chair.

Mr. Darnley,

Mr. O'Sullivan.

Mr. McCourt,

William Jiffkins called in, sworn, and examined.

Witness withdrew.

Ordered,—That Warrant-officer Barnwell be summoned to give evidence next meeting.

[Adjourned till To-morrow, at *Half-past Ten* o'clock.]

 WEDNESDAY, 2 MAY, 1894.

MEMBERS PRESENT:—

Mr. G. D. Clark in the Chair.

Mr. Fuller,

Mr. McCourt.

Mr. Darnley,

William Barnwell (*Warrant-Officer, Volunteer Permanent Staff*) called in, sworn, and examined.
Witness withdrew.

Ordered,—That Colonel Roberts be summoned to give evidence next meeting.

[Adjourned till To-morrow, at *Half-past Ten* o'clock.]

 THURSDAY, 3 MAY, 1894.

MEMBERS PRESENT:—

Mr. G. D. Clark in the Chair.

Mr. Darnley,

Mr. McCourt.

Charles Fyshe Roberts (*Military Secretary*) called in, sworn, and examined.

Witness *produced* butt of railway-pass issued to Staff-sergeant T. Moyens, from West Maitland to Sydney, on 14th February, 1890.

Witness withdrew.

William Jiffkins further examined.

Witness withdrew.

Re-assembling of Committee to be arranged by the Chairman.

[Adjourned.]

 WEDNESDAY, 9 MAY, 1894.

MEMBERS PRESENT:—

Mr. G. D. Clark in the Chair.

Mr. Darnley,

Mr. McCourt.

Charles Fyshe Roberts called in and further examined.

Witness withdrew.

Chairman submitted Draft Report.

Same read, amended, and agreed to.

Chairman to report to the House.

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1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

MINUTES OF EVIDENCE

TAKEN BEFORE

THE SELECT COMMITTEE

ON THE

CASE OF STAFF-SERGEANT W. JIFFKINS.

TUESDAY, 1 MAY, 1894.

Present:—

MR. DARNLEY, | Mr. McCOURT,
MR. O'SULLIVAN.

G. D. CLARK, ESQ., IN THE CHAIR.

Mr. William Jiffkins called in, sworn, and examined:—

1. *Chairman.*] You are not in any occupation at present? No.
2. You were in the Military Service of this Colony for some time? Yes, nearly seven years.
3. On what date did you leave the Service? I was discharged on the 6th April, 1892.
4. Had you been in the Public Service of this Colony before joining the Military Department? Yes; Prison Department.
5. But you were in the military branch of the Imperial Service in the old country? Yes.
6. *Mr. O'Sullivan.*] What Force? Always in the Infantry.
7. What regiment? First, in the Royal Bucks Militia; second, in the 76th Foot; third, in the Commissariat Staff Corps during the New Zealand war; after that, I went back to the 76th Foot, and on my discharge from that regiment I joined the First Royal Militia, London.
8. What made you change your regiment so often? I first joined the Militia Force, and I volunteered from the Militia into the Regulars, the 76th Foot; and then when the Commissariat Staff Corps was formed, being a young man, I joined that corps and went to the New Zealand war. When the New Zealand war was over our services were not required in that branch any longer, and I was sent back to my regiment, the 76th Foot. After receiving my discharge from this regiment in India, I joined the First Royal Light Infantry Militia, in London, and served in that Force for twelve months and one day.
9. *Chairman.*] You were dismissed from the Service here, I believe, for making an alleged false statement, and for copying from an official register? Yes. After I was discharged they altered the charge, and said it was for tampering with official records.
10. The alleged false statement was that you had not copied from the official register? That is my contention.
11. Where was the book at the time? In the lavatory.
12. A public place, to all intents and purposes? Yes; a public place—never under lock and key.
13. Had you any business in the lavatory at the time? Yes.
14. Can you give the Committee any reason why you were there on the occasion referred to? I was ordered to make out this return [*produced*] and if you read that you will see that the book I had to make that return from was wrong; the two sides did not agree.
15. *Mr. McCourt.*] Does this statement appear in your defence? I was never asked to make a defence.
16. *Chairman.*] Had you to go to this particular book? No; I had not any particular occasion to go to it, but I had occasion to go to another book, and putting this other book into the place caused me to fall in with the register lying open in the lavatory.

Mr.
W. Jiffkins.
1 May, 1894.

- Mr. W. Jifkins.
1 May, 1894.
17. Was the register supposed to be a private document? No; not in the slightest degree.
 18. Was it in use in the Department at that particular time? No; it was left in the lavatory as a reference.
 19. Do you know how long it had been out of use? Four years.
 20. Any one going into the lavatory could, of course, have seen the book? Yes.
 21. Who was it that charged you with copying from this book? Colonel Roberts charged me with taking notes from the register.
 22. But was it Colonel Roberts who saw you? No.
 23. Who saw you? Warrant-officer Barnwell. He charged me with making a false statement. Half an hour afterwards I was placed under arrest.
 24. Were you placed upon trial in the barracks or before the military authorities in connection with this particular charge? Yes; this occurred on the 22nd, and I was brought before Colonel Roberts on the 25th.
 25. And Warrant-officer Barnwell then stated that he saw you copying from this document? No; Warrant-officer Barnwell on that occasion, to my knowledge, never opened his mouth.
 26. To testify to your having been seen copying from this book? As I said just now I was charged with making a false statement. That is what I was brought before Colonel Roberts for. In making the inquiry as to how this alleged false statement came about, it transpired in the evidence that Warrant-officer Barnwell said I was making notes from this book, and that I said I was not. That was the false statement. Then Colonel Roberts amended the charge to one of tampering with official records.
 27. But was there no proof furnished at this inquiry, or statement made, that you had been seen copying them? I put the question to Captain Bouverie. I was searched in the lavatory. Warrant-officer Barnwell said I had a paper in my possession, and pointed to one of the pockets of my coat. In that pocket I had some tram tickets, a knife, a little bit of pencil, and a very short bit of paper. Captain Bouverie said, "Pull out all the papers you have in your possession." I pulled them out, and Captain Bouverie took out of my hand the little bit of paper. After examining it in the best manner that his eyesight would allow he came to the conclusion that there were five figures on it, namely, 22, 4, 89. I believe that is what they said was on it. At any rate Warrant-officer Barnwell said, "That is not the paper." The consequence was that he gave me the paper back again and I put it in my pocket. Captain Bouverie said, "Take all the papers you have got out of your pockets, if you have got any." I pulled everything out of my different pockets; but they did not find the paper they wanted to find.
 28. Because you had not the paper upon you? I had not the paper. When before Colonel Roberts I asked Captain Bouverie, "Is that the paper?" (producing one) and he would not make any reply. I said, "Did not Mr. Barnwell say that was not the paper?" He said he had forgotten what Mr. Barnwell had said. The paper was then in my hands. I produce the remains of the paper, which I had torn up and chucked into the fire place. That was the whole of the conversation I had with Colonel Roberts on that occasion. When I put the question to Captain Bouverie as to what Barnwell said about the bit of paper—that that was not the paper—he said he had forgotten what Barnwell had said, and he gave me the paper back again, and I put it in my pocket.
 29. But did not Warrant-officer Barnwell appear at the Court of Inquiry? He did.
 30. And did he state that he saw you copying from the book? No; he never opened his mouth. No questions were put to him by any one to my knowledge. I never asked him any questions.
 31. But were you present during the whole time? Yes; and Molloy was present during the whole time.
 32. So that although Barnwell was the only man supposed to have seen you copying from this document, he gave no evidence before the court of inquiry? Not in my presence; neither he nor Molloy.
 33. What could have been the object of Warrant-officer Barnwell in charging you with this offence;—have you any reason to believe he had an object? He had an object for two years to get me dismissed—tried all he could.
 34. Mr. McCourt.] Before Barnwell reported you, did you not report him? No.
 35. Do not the papers show that you did? No; I do not think so.
 36. Did you never report Barnwell? Yes.
 37. Chairman.] As a matter of fact, you and Barnwell did not get on very well together in the Service? No; not for two years before he got me dismissed.
 38. There was friction between you while at Maitland? Yes.
 39. Mr. O'Sullivan.] What was the original cause of the disturbance between you and Barnwell—was there any personal difference? Not the slightest.
 40. What caused you and Barnwell to get at logger-heads? I do not know, I am sure, how it came about. I had served under Barnwell in the Northern District.
 41. Mr. McCourt.] According to paragraph 5, page 3, of the printed papers in your case, did you not, on the 4th June, 1889, and the 2nd November, 1889, report to Warrant-officer Barnwell alleged irregularities on the part of the late Quartermaster-sergeant Moyens? That was contained in a letter which the General told me to send to him, and in which I inserted complaints I had against Warrant-officer Barnwell.
 42. Mr. O'Sullivan.] Then you only reported Barnwell when you were called upon to do so? When it was in connection with my duty.
 43. This statement appears in your letter of 8th January, 1892, to the Major-General:—

On the 4th June, 1889, and 2nd November, 1889, Sergeant Jifkins reported to Warrant-officer Barnwell the irregularities carried on by the late Quartermaster-sergeant Moyens, and purchasing wood and coals, and charging the same to the Department for cooking purposes in the orderly-room (office), and the office being kept in a filthy condition. This filthy condition was owing to warrant officer getting the cleaning taken away from the usual woman, and giving it to his wife at 5s. per week, and no cleaning being done. The above reports are the outcome of the following.

On the 9th January, 1890, a report was made by the Quartermaster-sergeant and Warrant Officer to Officer Commanding the Northern District Reserves:—"We, the undersigned, protest against doing duty with Sergeant Jifkins, through his general disagreeable, cynical, underhanded, and *quid-nunc* manner being obnoxious to them in the extreme." (Signed) Warrant Officer and Quartermaster-sergeant.

What caused those two officers to make that protest? Barnwell was warrant-officer. Moyens was Quartermaster-sergeant. Moyens and Barnwell were together. I being the third party in the office they did not want me there. This Moyens was allowed to run wild in Maitland, and to get into debt everywhere. Eventually he had to come and live in the office—a little place for which the Government paid 12s.

ON THE CASE OF STAFF-SERGEANT W. JIFFKINS.

12s. 6d. a week. He was allowed to do his cooking in the office, and to sleep there, and because I spoke about it to Warrant-officer Barnwell, and reported it to that officer, then, through some word I made use of, Moyens threatened to knock my teeth down my throat; and at this time the two officers submitted this quarrelsome sort of report against me on purpose to get me out of their way.

Mr.
W. Jiffkins.
1 May, 1894.

44. *Mr. McCourt.*] Did Barnwell join in that? Yes.

45. I think you stated that you did not report Barnwell previous to your dismissal? Yes, I did; but not on the occasion mentioned in the paragraph just read.

46. Is it true that on the 8th November, 1891, you made a charge against Barnwell, as appears from this paragraph in your letter to the Major-General:—

With reference to a report made by me, dated 8th November, 1891, re errors made by the warrant officer in district order-book, dated 23rd October, 1891 (four telegrams were used in this one instance), I was brought to an account for, and informed by the Adjutant that at end of year whether the General Officer Commanding should not be advised to dispose of my service. The friction referred to was brought about by the warrant officer.

—? Yes; I made that report.

47. Before Barnwell reported you, you commenced by reporting him? No; I did not.

48. What is the date of Barnwell's first report against you? The 13th February, 1889, as shown on page 18 of the printed papers.

49. You stated that when brought before Colonel Roberts in reference to taking notes from the register, you were not called upon for any defence? I was not.

50. Was there not a full inquiry made? There was no full inquiry made.

51. Colonel Roberts states, page 31 of the printed papers:—

For these he was dealt with in the usual way, receiving frequent warnings; and eventually, after a final one, when he was informed that the next time he committed a crime it would be necessary to have him removed from further employment in the Military Forces, he was again brought before the military authorities, and, after a full inquiry, his dismissal was recommended, as he had been found guilty of making a false statement and taking notes from military records without proper authority.

You mean to say no opportunity was afforded you to make a defence on that charge? Exactly.

52. Then a full inquiry was not made? That is my complaint—that a full inquiry has not been made.

53. Was no inquiry at all made? There was such an inquiry as I have related.

54. Were you not present? I was present.

55. Did you, at that inquiry, offer to make any statement in your own defence? I offered a statement, but it would not be taken.

56. What statement did you offer? I was brought before Colonel Roberts for making a false statement. Warrant-officer Barnwell said that I was taking notes from the book, and I said that I was not. It came out in the evidence about taking the notes from the official record, and Colonel Roberts there and then amended the charge.

57. What to? To taking notes from the register. It was Colonel Roberts who made the charge of taking notes from the register.

58. *Chairman.*] The charge made against you by Barnwell was for taking notes from this official register? No; for making a false statement.

59. But Warrant-officer Barnwell was supposed to have seen you taking notes from the official register—he charged you with it? No; he did not.

60. Not at the time he saw you? No; he knew it was not a breach of discipline.

61. *Mr. McCourt.*] No matter what the charge was, or whether it was amended or not, had you not an opportunity at this inquiry of making your defence? No.

62. What prevented you from making it? At the time of the inquiry Colonel Roberts was acting for the General. I had written to the General a letter containing the complaints just referred to. Colonel Roberts finding that I had sent this letter to the General, accused me of writing to some one outside with reference to military matters. He considered that the General was outside when he was on leave, although the General gave me permission, as you will see by that letter. Colonel Roberts said, "If you were in the British Army, you would be tried by Court-martial. You have been writing to some one outside." I said, "Not outside the Department, sir." He said, "You are remanded until the return of the General, to a higher authority." No question was put either to Barnwell or to Molloy. The only question I asked was with reference to the bit of paper, when Captain Bouverie said he had forgotten what Barnwell had said about the paper, when I asked him if Barnwell had not said that it was not the paper.

63. Without allowing you to make any defence at all, he remanded you until the General came back—were those the words? Yes; until the General came back.

64. Were you ever tried before the General? No. The inquiry was on the 25th February. The General came back from leave of absence on the 8th March. From the 25th February I was waiting every day to be brought up, but I was kept for forty-five days, until the 6th April, under suspension. When the General was acquainted with the matter, he wrote, as you will see on page 2 of the printed papers, wanting to know the reason why I had been kept waiting so long. Then I was brought up before the General on the 6th April. I said to the General, "Before you decide either one way or the other, would you allow me to make a statement," and he said, "I cannot." "But," I said, "I have been officially informed that the charge against me has been added to since I was remanded. I was first charged with making a false statement, and then I was charged with taking notes from the register, which charge has never been inquired into." The General said, "It is no use, I cannot hear what you have to say in the matter. You have been dismissed by order of the Government, and entirely behind my back."

65. *Chairman.*] The false statement with which you were charged was simply a denial on your part that you had copied from the register? Yes.

66. When you were summoned before Colonel Roberts, and when Captain Bouverie said he had forgotten what Barnwell had said about the paper, was Barnwell present? Yes, and Molloy.

67. And was not Barnwell called upon to make a statement? No; not in my presence, nor Molloy either, and I was not allowed to put any question to either of them; and the only question I asked was about the paper that was found on me, which was admitted not to be the paper, Captain Bouverie having forgotten what was said.

Mr.
W. Jifkins.
1 May, 1894.

68. Have you any idea who was responsible for not separating you and Barnwell in the first instance. On the 28th January, 1892, page 4 of the printed papers, Major-General Richardson says :—

Seeing the long continued friction between W. O. Barnwell and this N. C. O., it would, perhaps, be well to transfer him, and thus give him a final chance of re-establishing himself.

Of course, that was subsequent to the Maitland affair? That was subsequent to this charge. It was written to Colonel Roberts on the 28th January. I was kept in the office until the 22nd February, on purpose to work this charge of tampering with the register, because I wrote that letter to General Richardson.

69. Warrant-officer Barnwell, Quartermaster-Sergeant Moyens, and yourself were altogether at Maitland, were you not? Yes.

70. There was a quarrel there? Yes.

71. You were all transferred from Maitland? We were.

72. And you were all placed together again in Sydney? We were.

73. Although Colonel Spalding had recommended that you should be separated? Yes. Not only Colonel Spalding, but also Colonel Wilkinson, wrote and wired to the effect that we should be separated.

74. Do you know who was responsible for keeping you together? The Assistant Adjutant-General—he was the head. Colonel Wilkinson as well as Colonel Spalding suggested that I should be away from Barnwell, but no notice was taken of the matter. That was twelve months before Barnwell got me dismissed. On two occasions also Colonel Eden recommended that I should be separated from Barnwell.

75. When you were transferred from Maitland to Sydney was it not the decision of the court that you should each pay your expenses down? Yes.

76. Did you pay your expenses? Yes, and never recovered the amount.

77. Did Moyens pay his passage down? A railway pass was made out for him by Barnwell.

78. And that was one of the things you reported to the General? Yes, and I reported it at the time he made the pass out; but he would not allow my report to be forwarded. He prevented my report from being forwarded to the Major-General.

79. *Mr. McCourt.*] You stated just now that Colonel Roberts said that your case was to stand over until the General came. Colonel Roberts states, page 29 of the printed papers :—

On the 22nd February, 1892, he again committed himself, and was charged with making notes from one of the regimental registers—a duty he was not called upon to perform. He was brought before the Acting-Commandant on the 25th February, and failing to clear himself of the charge, and taking into consideration the warning he had received only six weeks before, he was remanded under arrest until his case was decided by higher authority, viz., that of the Honorable the Colonial Secretary. His case was reported that day, in letter of 25th February, 1892, attached.

Sergeant Jifkins is therefore in error in saying his case was to stand over until the return of the Major-General from leave.

You say your case was ordered to stand over until the return of the Major-General? Yes.

80. And that Colonel Roberts never called upon you for any defence? No.

81. Nor did you volunteer any defence? I was not allowed. I was given the order to "Right turn; quick march." When a man is standing before his Commanding Officer, and receives such an order, there is no such a thing as a reply.

82. *Mr. Darnley.*] Had your quarrel with Moyens and Barnwell any connection with the fact that you had reported Moyens for purchasing wood and coal and charging the same to the Department? No.

83. *Chairman.*] What caused Moyens to threaten that he would knock your teeth down your throat? The time was the commencement of the year. We had to make out an annual return for the previous year.

We had twenty-nine companies on the northern side, and the returns were supposed to be in Sydney by the 6th January. About a fortnight before that date, seeing that the returns were not being pushed forward, I spoke to Moyens about having them done, and he said, "Don't bother your head about the returns, they will be done in time." Of course I said no more about it. The end of December came, and I could see that things were not being done. At any rate, on the 6th January, when the returns should have been in Sydney, they were in Maitland. I was doing the returns at this time. Warrant-officer Barnwell said to Moyens, "You might as well help Jifkins to make out these returns, as you know they should be in Sydney." I then said to the Warrant-officer, "If the Quartermaster-sergeant had allowed me to make out these returns before when I asked him, they would have been done now"; whereupon Moyens jumped up out of his chair, and threatened to knock my teeth down my throat.

84. *Mr. McCourt.*] You say that your case was remanded by Colonel Roberts until the General came back? Those were the words I understood him to use. He said, "You are remanded until the return of the General, to a higher authority."

85. On the 15th May, 1892, you wrote to Mr. Bradbury, of Picton, to this effect :—

I was dismissed by Colonel Roberts, and behind the back of General Richardson (who was on leave) on 6th April, on a groundless charge, made through spite.

So that you knew then that you were dismissed by Colonel Roberts? Dismissed through Colonel Roberts.

86. But you say dismissed by Colonel Roberts? It is all the same—dismissed by Colonel Roberts, or dismissed by the Government. I was dismissed. Of course, if the words are there, I suppose I must have used them; but you will see I was not dismissed by Colonel Roberts.

87. But you say so, and "behind the back of General Richardson"? That is right. That is the expression General Richardson made use of.

88. But when you wrote to Mr. Bradbury the words "I was dismissed by Colonel Roberts, and behind the back of General Richardson," you must have known that Colonel Roberts dismissed you? That letter was written a long time after I was dismissed. The General told me I was dismissed by order of the Government. I said in the letter I was dismissed by Colonel Roberts. He, of course, was the cause of it.

89. *Mr. Darnley.*] When you were brought up before Major-General Richardson, did he merely inform you that you had been dismissed by the Government or that he was there only as the mouth-piece of the Colonial Secretary? That is what the General said.

90. *Chairman.*] Do you remember the occasion of the first quarrel or difference which you had with Warrant-officer Barnwell? The first difference I had with him was when Moyens threatened to knock my teeth down my throat.

91. In consequence of that quarrel you were all three transferred to Sydney? Yes.
92. And to the same office? The three of us were in the one office, and with nobody else there for some days after we arrived in Sydney. Moyens was on one side of the table, I was on the other, and Barnwell was somewhere else at the table.
93. Were any orders supposed to be in existence to prevent anyone getting at the official register? No; neither written nor verbal.
94. There was no one in the room at the time but yourself and Barnwell? No one else.
95. Therefore it was simply his word against yours as to whether or not you were copying? That is so.
96. *Mr. McCourt.*] I think it was on the 22nd February when the case was inquired into by Colonel Roberts? That was the day when I was supposed to have told the lie. The date on which the case was before Colonel Roberts was the 25th February.
97. Colonel Mackenzie, on the 4th May, writes as follows:—

Mr.
W. Jiffkins.
1 May, 1894.

With reference to ex-Sergeant Jiffkins' statement as to the manner he was dealt with on 22nd February, 1892, I have the honor to state that Sergeant Jiffkins was brought before the Acting Commandant in the usual manner, on the charge of making a false statement. That upon evidence being adduced Colonel Roberts amended the charge in Jiffkins' presence to one of tampering with records, and this was then and there investigated. Sergeant Jiffkins not being in any way able to clear himself of the charge.

Were you prevented from making a statement? I was.

98. Then these words are not true "Sergeant Jiffkins not being in any way able to clear himself from the charge"? They are not true.

99. You made no attempt to clear yourself from the charge? I was prevented from doing so. I was ordered away.

100. Colonel Mackenzie goes on to say:—

Colonel Roberts thought the matter so serious, taken into consideration with previous reports, and history of this non-commissioned officer, that he forthwith, by letter, reported the circumstances to the Colonial Secretary.

You are emphatic in your statement that on the 25th February you were prevented from making any defence from the charge brought against you? Exactly. I have never been allowed yet to examine my accusers in this matter.

101. That boiled down is your complaint? And that I had permission to go to the register.

102. From whom did you get permission? I did not want permission.

103. How did you get authority—by general order, or what? By reason of my being a clerk in the office.

104. Had you permission to take notes from the register and copy from it on a piece of paper? Yes, if I thought it necessary—particularly this old register in the lavatory, which was not in use. If I have a return to make out, and the book I am supposed to get my information from is wrong, I must naturally go to another book to get the information.

105. *Mr. Darnley.*] You admit that you were looking at this register? No, I do not admit even looking at the register. I admit that the register was left open on the bath-stand. I hope the members of the Committee will visit the lavatory, because it is important that they should see the place. This old book was left wide open on a bath-stand at one end of the lavatory. Knowing it was out of its place, I closed it up and put it in the pigeon-hole. As I was closing it Barnwell came in and accused me of taking notes from it. If you go to the lavatory you will see that from the position of the bath behind the door it would have been impossible for Barnwell to have seen me do anything.

106. *Mr. McCourt.*] Was it simply on account of this last charge that you were dismissed, or were all charges taken into consideration? There is no such thing as taking all charges into consideration. They cannot do that. It is the last charge for which a man is dismissed.

107. No consideration is taken of any previous misconduct? It appears that they did so in this case; but I am willing to go into all of them for that matter.

108. Now, what defence do you make to the charge? That I told no lie in the first instance. Barnwell says he saw me taking notes; I say he did not, and there is no evidence to prove it. In the second place, Colonel Roberts says that I had no right at the register. I say that I had a right of access to the register by reason of my position in the office, and that my position in the office gave me the right to take notes from it. My next contention is that I have not yet been allowed to examine my accusers in the matter.

109. *Chairman.*] Were you suspended at once when Barnwell came in and saw you as you were picking up the book? Half an hour afterwards.

110. By Barnwell? No. When Captain Bouverie ordered me to take the papers, &c., out of my pocket, he said, "The matter resolves itself into this: Barnwell says you were taking notes from this book, and you say you were not. One of you is telling a lie. I am going down to the battery, and I shall report the matter to the Adjutant-General."

111. *Mr. Darnley.*] You stated a short time ago that when you were before the Major-General he, practically, did not investigate the charge—he said that the charge had been investigated, and that you had been dismissed by order of the Government behind his back? Yes.

112. If those were his remarks they would lead anyone to suppose that he knew nothing at all about the case, and did not desire to take any responsibility in the matter. But I see by his letter of 5th May, 1892, he says:—

His misbehaviour was duly investigated, with the result that a report was forwarded to the Minister, who approved of his discharge from the service. Mr. Jiffkins has been very troublesome, and I can see no reason to recommend a reconsideration of his case.

—? That was afterwards, and when I commenced to inquire what I was dismissed for.

113. But the Major-General said you had been very troublesome—taking into consideration, I suppose, all your misdeeds according to your defaulter's sheet—and he could see no reason to recommend any reconsideration of your case? It was not likely that he was going to fight against Colonel Roberts in the matter, or against Sir George Dibbs.

114. Possibly, if he had thought you unjustly dealt with, he would have recommended a reconsideration of your case? Well, he thought so when he wrote to the effect that owing to the continual friction it would be advisable to transfer the men and give me a final chance.

115. That was sometime before this letter? It was on 23th January, after I was suspended (22-2-92), that he wrote the letter.

116. When the letter was written in May, in what state of health was Major-General Richardson? It was directly afterwards that he took ill.

WEDNESDAY,

WEDNESDAY, 2 MAY, 1894.

Present:—

Mr. FULLER, | Mr. McCOURT,
Mr. DARNLEY.

G. D. CLARK, Esq., IN THE CHAIR.

Mr. William Barnwell sworn and examined:—

- Mr. W. Barnwell. 117. *Chairman.*] What position do you hold at present? I hold the position of warrant-officer on the Volunteer Permanent Staff, with the pay at present of colour-sergeant only, there being no vacancy as warrant-officer.
- 2 May, 1894. 118. For what length of time have you held that position? I have been on the staff ten years this year. I could not tell you the exact date of my promotion.
119. Had you any military experience before joining the forces here? Yes.
120. In the Imperial service? Yes; ten years in the Royal Marine Light Infantry.
121. You know ex-Staff-sergeant Jiffkins? Yes; I have known him for some years. I have known him ever since he has been on the staff.
122. You were over him in the service here, were you not? Yes, for some time. He has served at other places.
123. Do you remember his dismissal from the service? Yes; about two years ago.
124. And the cause of it? Yes, I remember the cause of it; but having dismissed the matter entirely from my mind, I should have to refer to the printed papers to give any evidence now.
125. Do you remember the charge which was made against him, and which led up to his dismissal? There were numerous charges. I remember the final charge.
126. I am asking you about the final charge? Yes; I remember.
127. He was charged with making a false statement and taking notes from an official register;—do you remember who made that charge against him? I made the original charge in the first instance, considering it my duty to do so.
128. What was the false statement with which you charged him? Sergeant Jiffkins said he was doing nothing, and afterwards prevaricated by producing a piece of paper upon which he was taking notes from this official register.
129. Did you see him taking notes from the book? I distinctly saw him taking notes from the book.
130. Where was the offence committed? In a room opposite the orderly-room used for a messenger and for lavatory purposes.
131. Was this book supposed to be private and confidential? Yes; all official registers are confidential, and only certain persons are allowed access to them.
132. Do you know if any orders were given either to Sergeant Jiffkins or anybody else who might be about, against touching or even taking notes from this particular official register? No, I do not.
133. Was the room in which this book was lying at the time a private room? It belonged to the offices of the Metropolitan, Western, and Southern Reserves. It formed part of the offices, and was used for the storage of old books and documents.
134. So that practically it was accessible to any of the persons about? Accessible to the whole of the staff.
135. Was it the lavatory that the book was in? It was used as a lavatory. It was used, in fact, for three purposes—for the storage of old documents and books, as a lavatory, and for the messenger to sit in.
136. Had Sergeant Jiffkins any right of entry to this room? He was ordered by Captain Bouverie to stay in there while he was under arrest.
137. Had he any right to be in the room at the time you say you saw him copying from this book? He had a right to be there. He was ordered to stay there, but he had no right to interfere with the books.
138. *Mr. Darnley.*] Do you mean to say he was under arrest when you saw him taking the notes? No.
139. Had he a right to be in the room at that time then? Yes, he had a right.
140. *Chairman.*] Do you know if the book was on the shelves, or if it was lying open, so that any one could look into it? I could not say where it was originally. When I first saw it the book was open, and Sergeant Jiffkins was taking notes from it. I went into the room promiscuously.
141. Was anyone else in the room at the time besides yourself and Sergeant Jiffkins? Not at that time.
142. Did you at once charge him with taking notes when you saw him with the book? No; he closed the book hurriedly, and went into the orderly-room. When I went in I asked him what he had been hunting up in the register.
143. What was his reply? His reply was, "Nothing."
144. Did you see the notes he took, or was supposed to have taken, from the book? I saw the piece of paper with a note on it.
145. But he denied having taken it from that book? He said he was hunting up nothing.
146. *Mr. Darnley.*] To what officer did you report the case? Captain Bouverie, Commanding Metropolitan, Western, and Southern Reserves.
147. Did Captain Bouverie investigate the charge? Yes.
148. Was the charge for taking notes, or for making a false statement? Both charges.
149. I mean the charge you made? Yes. Captain Bouverie investigated it at once.
150. I want to know what charge you laid against Sergeant Jiffkins—whether it was a charge of taking notes, or making a false statement? I told the Captain Commanding what I saw Jiffkins doing. It was for him to formulate the charge, not me.
151. *Chairman.*] Did you retain possession of the piece of paper he handed back to you? No; he did not hand it back to me.
152. But he showed it to you? After the case was referred to Captain Bouverie, Captain Bouverie ordered the whole of us into the lavatory; and after some prevarication and hesitation Sergeant Jiffkins produced this piece of paper. After saying he was doing nothing, he produced the piece of paper, which I recognised as the piece of paper on which he was taking notes.
153. But you could not be positive that he took these notes from the book that was lying there? I saw him writing on the book and putting down figures.

154. Was this register in use at the time? No; it was a back register.
155. About how long was it out of date? I could not say for certain; it must have been two or three years back—an old register.
156. Do you know what Sergeant Jiffkins was doing in this room at the time—was he sent there for any purpose? I do not know exactly.
157. Would there be any possibility of his having to refer to the register in fulfilment of any duties laid upon him? Not the slightest. He had nothing whatever to do with the correspondence contained in the register.
158. *Mr. Darnley.*] Did Sergeant Jiffkins ever have to make up a return which would necessitate his going to the book;—did his duty call upon him to do that at any time? I do not think so. I could not say at this length of time.
159. Was it a portion of his duty to make up returns? Not to make up returns—only to do ordinary official work, such as copying and the like of that; possibly to copy a return, or to do whatever he was told to do.
160. *Chairman.*] Is it not a fact that Sergeant Jiffkins had instructions to make out this particular return [*paper shown to witness*]. Do you recognise the figures? I could not say at this length of time; but I think Quartermaster-sergeant Molloy would be able to give information on the subject.
161. *Mr. McCourt.*] Is that a return such as Sergeant Jiffkins usually makes out? This is a return referring to arms.
162. *Chairman.*] Suppose he had instructions to make out a return of that kind, might he not, for the purpose of comparison, have occasion to refer to this register? All these records with regard to arms are kept in different books. He had no necessity whatever to refer to the register for that information.
163. Who was responsible for altering the charge against Sergeant Jiffkins from that of making a false statement to the charge of tampering with official records? That lies with my superior officer.
164. You simply charged him with making a false statement? I simply charged him with taking notes from the register, and also with making a false statement—the two charges. You will see in my report the words, “and afterwards prevaricated by producing a piece of paper.”
165. Who ordered Sergeant Jiffkins to turn out his pockets or to produce the papers? Captain Bouverie.
166. Was there any hesitation on his part to produce what he had? Yes. In the first instance he hesitated to produce the paper; but after considering the matter he pulled out the piece of paper and showed it to all present in the room.
167. Could you produce this register to the Committee? No. I am not certain whether the records are at the Barracks or not; it is so long since. The military authorities would be able to supply information on that point. The register is an official record of the military force.
168. *Mr. Darnley.*] On page 26 of the printed papers, Colonel Mackenzie, Assistant Adjutant-General, under date 4th May, 1892, says:—
- With reference to ex-Sergeant Jiffkins' statement as to the manner he was dealt with on 22nd February, 1892, I have the honor to state that Sergeant Jiffkins was brought before the Acting Commandant in the usual manner, on the charge of making a false statement.
- There is no reference there to the charge of taking notes? That is not for me to say anything about.
169. Then this memo. goes on to say:—
- That upon evidence being adduced, Colonel Roberts amended the charge in Jiffkins' presence to one of tampering with the records.
- ? That was on my evidence.
170. And it says “and this was then and there investigated”? Yes.
171. By Colonel Roberts? Yes.
172. Can you give us any information with reference to this investigation—as to how far it extended? Only what is in the printed papers.
173. *Chairman.*] Were you present at the investigation? I was present I believe.
174. And you gave evidence? I gave evidence.
175. Was Sergeant Jiffkins permitted to cross-question you in regard to the statements made? It is not military usage for one man to be allowed to cross-question another.
176. Is not it in accordance with military usage to give the accused an opportunity of stating his case? When you are brought up you are brought up together, and the Colonel, or whoever presides, asks one the reason for certain things, and then asks the other—each has an equal opportunity.
177. *Mr. Darnley.*] Did you produce the paper upon which Sergeant Jiffkins had taken the notes? The piece of paper was given back to Sergeant Jiffkins, and had been destroyed in the meantime.
178. When you were before Colonel Roberts at this investigation, it was practically your word against that of Sergeant Jiffkins? Not at all. Look at the evidence.
179. You had no material evidence to offer that he had been taking notes? The material evidence was taken by the Officer Commanding Metropolitan, Western, and Southern Reserves in the lavatory. That was the material evidence that was taken—immediately after the original report by me.
180. *Chairman.*] The evidence in substantiation of your assertion, that you had seen him copying from this register, was the piece of paper he produced? The evidence in substantiation was the fact of Captain Bouverie and Quartermaster-sergeant Molloy having seen the piece of paper.
181. You were the only person who saw him copying? Yes.
182. And the only evidence in corroboration of your statement was the paper he produced upon which certain figures were written? The only circumstantial evidence, of course, would be the piece of paper; but that was seen by Captain Bouverie, and recognised by him in his presence, and also that of Quartermaster-sergeant Molloy.
183. *Mr. McCourt.*] Did Sergeant Jiffkins give the piece of paper to Captain Bouverie? Sergeant Jiffkins handed it to Captain Bouverie, and Captain Bouverie handed it back to Sergeant Jiffkins, having viewed it.
184. What were you doing when you saw Jiffkins—were you watching him? No.
185. What were you doing in the lavatory? I could not say what I went into the room for. I went in quite casually.
186. Was it your duty to be there? It was my duty to be everywhere in the office.
187. You were not watching him then? Not at all.

Mr.
W. Barnwell.
2 May, 1894.

Mr. W. Barnwell, 2 May, 1894. 188. Had not you and Jiffkins disagreements previous to this occurrence? I had no disagreement with Sergeant Jiffkins—only what he made himself.

189. But had you any disagreement with him? None at all.

190. Did you not, on the 9th January, 1890, join in a memo. to this effect:—

We, the undersigned, protest against doing duty with Sergeant Jiffkins, through his general disagreeable, cynical, underhanded, and *quid-nunc* manner being obnoxious to them in the extreme.

—? Yes; but I had no personal disagreement. I objected to having him under me. If a man chooses to quarrel with you, you are not obliged to quarrel with him.

191. I ask you, had not you any disagreement with him previous to this? I had no disagreement with him.

192. Why did you report him? Because it was my duty.

193. But he must have done something to you? No; that is where it becomes personal. That is the difference between a personal matter and a military duty.

194. If he was a capable officer, and a nice officer to work with, why did you report him? Because it was my duty to do so in the interests of the service.

195. You say in the memo. just read:—

We, the undersigned, protest against doing duty with Sergeant Jiffkins, through his general disagreeable, cynical, underhanded, and *quid-nunc* manner being obnoxious to them in the extreme.

What was his underhand action referred to there? It is borne out in the evidence.

196. I want your answer? I cannot remember the circumstances after five years have passed.

197. Surely, having made this report, you can remember generally upon what it was based? I cannot remember things which occurred five years ago against any man in this world, and I must respectfully decline to answer a question unless I am certain.

198. You do not remember—is that it? After the lapse of time I do not remember.

199. That memo. may have been true, or it may not have been true? Not at all; it was perfectly true.

200. How can you say that it was perfectly true, if, after the lapse of five years, you do not remember the circumstances? Because I have documentary evidence which recalls the circumstances to my mind. I can call nothing to mind only what I see in print or in writing, and then I recognise the evidence. The matter has been dismissed from my mind for so long.

201. *Chairman.*] Is your memory fairly good? My memory is very good.

202. *Mr. McCourt.*] The printed papers, page 3, contain this statement:—

The Court of Inquiry held on 24th January, 1890, was of opinion that the quarrel might have been checked before reaching such a crisis by the exercise of more tact and firmness on the part of Warrant-officer Barnwell.

Was that the decision of the Court of Inquiry? Yes.

203. They blamed you for want of tact and firmness? I do not know about blaming; that was the decision.

204. Would that not carry a certain amount of blame? You can get that information from the military authorities.

205. I ask you if what I have just read was the finding of the Court? Yes.

206. Would not that carry a certain amount of blame? It might do.

207. All this time these military quarrels were going on between you and Sergeant Jiffkins? There was no quarrel between me and Sergeant Jiffkins.

208. In regard to neglect of military duty and disagreeableness? Notice the origin of the quarrel in that case. The quarrel originated not between me and Sergeant Jiffkins, but between Sergeant Jiffkins and Moyens.

209. You joined in saying that Sergeant Jiffkins, was disagreeable, cynical, and underhanded? I joined in that memo.; but as to joining in the quarrel, I object to that term.

210. Do you wish the Committee to understand this, that although you reported Sergeant Jiffkins for neglect of military duty you were still on friendly terms with him personally? Not friendly. I should not take him home and make a bosom friend of him at this time; but I had no ill-will or animosity against him. I gave him every chance to do his duty, but he would not leave me alone—he kept irritating me.

211. At the inquiry before Colonel Roberts, do you remember whether Sergeant Jiffkins was called upon to make any defence in reply to your evidence? He was given a good opportunity.

212. He was asked if he had anything to say in his defence? Yes.

213. Did he say anything, do you remember? I cannot remember the exact circumstances.

214. You are sure he was asked if he had anything to say in his defence—that is the usual thing, is it not? It is the usual thing. I could not say for certain now, after a lapse of two years, whether Colonel Roberts put it to him exactly in those words.

215. To the best of your belief was he called upon? To the best of my belief, he had an opportunity of defending himself.

216. *Mr. Darnley.*] It is stated on page 4 of the printed papers:—

On the 4th June, 1889, Sergeant Jiffkins reported to Warrant-officer Barnwell the irregularities carried on by the late Quartermaster-sergeant Moyens, and purchasing wood and coals, and charging the same to this Department for cooking purposes in the office (orderly room).

Would it be your duty to forward that report on to head-quarters? If I received a written report it would be my duty to forward it on.

217. At that time you were on duty in the same office with Jiffkins and Moyens? Yes.

218. And it would be your duty to forward that report on? Yes.

219. You recognise that that is a very serious charge against Moyens? Yes, but a groundless charge, I reckon.

220. An official minute signed "A.H.," referring to the paragraph just read, says:—

This matter has not been forwarded to Military Staff Office to be dealt with, though forming a grave charge apparently.

—? That minute is merely a *précis* of the papers. It is an explanation of their contents by a clerk.

221. But he says that this matter was not forwarded to the Military Staff Office to be dealt with;—if it was your duty to forward it, can you tell us why you did not send it on? I do not remember having seen

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seen the report in writing. No report was rendered in writing. It might have been a verbal report. In any case, it was a groundless charge.

222. At the end of paragraph 5, page 4 of the printed papers, in which Sergeant Jiffkins states that he reported to you the alleged irregularities on the part of Moyens in regard to the purchase of wood and coal, Sergeant Jiffkins states that the outcome of his action in thus reporting was the joint complaint by you and Moyens against him on the ground of his disagreeable and cynical manner; if that report were made by Sergeant Jiffkins in reference to Moyens purchasing wood and coal, and you failed to forward it to the proper authorities for investigation, and afterwards sent a joint protest against doing duty with Sergeant Jiffkins, do you not think that fact reflects very much upon your conduct and that of Moyens? It would if such were the case. One counterbalances the other; that is to say, it cuts both ways.

223. I notice that Sergeant Jiffkins reported this matter about the wood and coal on the 4th June, 1889, and the joint protest of yourself and Moyens was made on the 9th January, 1890—some six months afterwards? Does that not show a desire on the part of Sergeant Jiffkins to hunt up all these things—these false and groundless charges?

224. We are not in a position to judge, because this matter of the purchase of the wood and coal has not been investigated? That is not for me to give information upon.

225. But it is a matter as to which you might call to mind whether or not you forwarded that report? But if I had never received a written report. Perhaps there is documentary evidence. If Sergeant Jiffkins could show me a report or a copy it would recall to my mind whether I did receive it or not.

226. But if you did receive a report of that kind you would have sent it on? Yes; it would have been my duty, if there was any foundation in the report.

227. Is it at your discretion to suppress any report for which you think there is no foundation? Not to suppress it.

228. But is not that what it means;—you say it would be your duty, if there was any foundation for the report? If there was any foundation in the report.

229. Is it your duty to judge whether or not there is any foundation, or should you send it on to your superior officer? It is my duty to judge whether there is any foundation in the report, knowing personally the circumstances of the case.

230. Prior to forwarding it on? Yes; that is to say, as to whether it refers to military matters or not. Anything connected with a private matter, of course, I should not have authority to forward on to a military officer.

231. Would you consider a report of that character a private matter? I should.

232. When one officer charges another with purchasing wood and coal, and charging the same to the Department for cooking purposes, you do not think it necessary that such a matter should be investigated by your superior officers? I said before I did not remember ever having seen the report.

233. I am asking you whether you would consider it a private matter, or a military matter, to be investigated by your superior officer? If such a charge were brought by one member of the staff against another, it would be my duty then to forward it.

234. *Chairman.*] You say that there was no animus on your part against Sergeant Jiffkins, and that you had no personal feeling against him? No personal feeling whatever.

235. Is there any reason why it came about that you were so frequently charging him with offences of some kind? Because Sergeant Jiffkins would not do his duty in a proper manner without insulting me, and making all sorts of difficulties. Instead of assisting me in my duty, he put all sorts of difficulties in my way.

236. Do you remember the quarrel between Sergeant Jiffkins and Quartermaster-sergeant Moyens, at West Maitland? Yes.

237. According to the finding of the Court, Moyens was the chief offender—he threatened to knock Jiffkins' teeth down his throat? Yes; he was the chief offender on that occasion.

238. And you were reprimanded also, it being stated that you could have prevented a good deal of the trouble if you had been a little more firm? I was not reprimanded for that.

239. Is it not a fact that, as the outcome of that trial the three of you were transferred from West Maitland? That is a fact borne out in the evidence.

240. And that the three of you were supposed to come down to Sydney at your own expense? Those were the orders issued.

241. Is it not a fact that, in spite of that finding, you passed Moyens down in the ordinary way, at the expense of the country? It is not a fact, to my knowledge. I do not remember having done so. I had no authority to do that.

242. And you do not know whether you did it or not? I could not say at this time. I am of opinion I did not do it. It is five years since the occurrence of all these little details.

243. What did you mean by writing this letter of the 25th January, 1890, page 14, of the printed papers:—

I have the honour to respectfully request that the General Officer Commanding will be so kind as to allow me to withdraw my letters of 20th and 21st instant, on the subject of "Charges against Staff-sergeant Jiffkins," evidence at Court of Inquiry, &c.

—? I had committed a breach of military discipline. It was for that that I was reprimanded.

244. Although you have said that you did not quarrel with Sergeant Jiffkins, does it not abundantly appear that something very much like quarrelling was constantly taking place between you? In the military service a subordinate is not supposed to quarrel with a superior, when he is given an order.

245. After the recommendation was made that you should be separated, do you know who was responsible for the three of you being transferred to Sydney together? I presume the General Officer Commanding. He is in charge of the whole Military Force, and I suppose he would be responsible.

246. *Mr. Darnley.*] Was Colonel Roberts at that time in command? No; I think Major-General Richardson. Colonel Roberts only assumed command in the absence of Major-General Richardson.

247. *Chairman.*] In reference to the occurrence at West Maitland, in which you admit that Moyens was the aggressor, you presented a railway pass for Moyens to the staff-sergeant for signature? I do not think I did. I could not say for certain. The pass would have to be accounted for, and in that way it would be brought to the knowledge of the military authorities, who would settle the question at once as to the correctness of the matter. Returns of railway passes are always rendered to the authorities, and compared with the railway record. There would not be the slightest chance of my giving a railway pass and the fact not being found out.

- Mr. W. Barnwell.
2 May, 1894.
248. *Mr. Darnley.*] In your letter of the 25th January, just referred to by the Chairman, you say that you were greatly excited by the proceedings of Staff-sergeant Jifkins in hunting up outside evidence for the Court of Inquiry. What had you to fear? Having seen him about the town with private individuals, and having been given information about the inquiry—that he was travelling all over the district hunting up evidence as to the private character of this deceased non-commissioned officer.
249. You were not afraid of Sergeant Jifkins hunting up evidence against yourself? Not at all.
250. Only against Moyens? I did not care to be dragged into the quarrel. I wanted to be kept out of the matter as far as the private part of the business was concerned.
251. You were evidently aware of something which would not be very creditable to all parties concerned, had it been brought forward? It did not refer to me; and Moyens' private life, as far as it has no regard to military duties, does not, or should not, trouble anyone in the military service.
252. If it did not trouble you what had you to fear? Being brought in to give evidence, and one thing and another. I wanted to have nothing to do with any private quarrel between Jifkins and Moyens in regard to private matters that I knew nothing about. My concern was for military duty only.
253. I understand that your concern was in military matters, and that is the reason I have asked the question why you were so greatly excited about these other matters; because if it did not come within your duty to consider them, you should not have had any fear whatever? On the Volunteer Permanent Staff we have a dual capacity, as it were. We have a military capacity, and we are allowed to go to our homes and become private citizens. We have both interests to consider, and that renders it rather difficult sometimes.
254. *Chairman.*] It comes right back to this then, that Staff-sergeant Jifkins was discharged from the service simply, according to your evidence, for making a false statement in regard to having copied from this official register? Not necessarily. Sergeant Jifkins was discharged for general behaviour since his coming on the Staff—during the whole time of his being on the Staff. You will notice that in some of the General's letters. There are so many papers that you do not know where to refer to.
255. Do you know what the third entry in Sergeant Jifkin's defaulter's sheet, on page 2 of the printed papers, "Insolence to Warrant-officer Barnwell," refers to? There should be some evidence concerning it in the papers.
256. But surely if this matter has been so notorious and there has been so much correspondence passing, your recollection would not fail you in all these particulars? Has my recollection failed. Could you keep all that is contained in these papers in your head for five years, and at the same time attend properly to your ordinary military duties? Is such a thing to be expected?
257. *Mr. Fuller.*] The question is whether you remember yourself, not whether the Chairman could remember? I ask is it possible?
258. *Chairman.*] And you do not remember anything about this charge against Sergeant Jifkins of insolence to yourself? I do not remember after the lapse of time.
259. *Mr. McCourt.*] In a letter by you to the Adjutant-General dated the 1st December, 1891, you say:—
I had previously received orders from Captain Bouverie to point out errors to instructors, and warn them to initial all alterations in scoring-book. Sergeant Jifkins being present, I transmitted the Adjutant's orders in the words, "In future, Sergeant Jifkins, all alterations in scoring-books are to be initialled." He replied, "I do do it." Considering the reply unnecessary, I took Sergeant Jifkins before the Adjutant.
- Do you consider it a breach of duty to make that reply? If you had evidence in your hands of a thing not having been done and one of your subordinates said, "I do do it," meaning that he had never failed in doing it, would you consider that that was a proper way to answer?
260. Your reply is that you had evidence before you that he had not initialled the book? Yes; or else why is the book sent out?
261. That was the reason you took him before the Adjutant? That was the reason—the answer was not necessary.
262. The answer was not true? The answer was not true. He could not have done it if there was evidence there that it had not been done.
263. *Chairman.*] You said that when Sergeant Jifkins took the piece of paper out of his pocket and handed it to Captain Bouverie, Captain Bouverie handed it back again to him; do you remember making any remark then about Sergeant Jifkins. Did you make any direct reflection upon him in any way? I do not think it would have been possible for me to make any remark to Sergeant Jifkins in the presence of a superior officer.
264. Do you know why Colonel Roberts amended the charge? It would not be possible for me to know that.
265. Do you remember what Colonel Roberts said to Sergeant Jifkins at the time he remanded him. Do you know if he was remanded to appear before Major-General Richardson? I remember Colonel Roberts saying something about Jifkins having written over his head to a superior authority.
266. But was not Sergeant Jifkins remanded that the case might go before Major-General Richardson for his decision? He was remanded to superior authority. That meant Major-General Richardson.
267. *Mr. Darnley.*] The occasion of the quarrel between Moyens and Jifkins which you reported on the 6th and 10th January, 1890, was the first time that you had occasion to report Sergeant Jifkins according to the defaulters' sheet, which, I suppose, is a correct record—that would be the first charge you brought against Sergeant Jifkins? Yes.
268. That was subsequent to the charge being made by Jifkins against Moyens in reference to the purchase of wood and coal, &c. You also reported the "insolence to Warrant-officer Barnwell," on the 17th April, I suppose? Yes, I must have done that.
269. You also reported the cavilling at orders on the 17th December? Yes.
270. And the neglect of duty on the 12th January, 1892? Yes.
271. So that you reported five charges between January, 1890, and February, 1892? Yes.
272. *Mr. McCourt.*] If you had been on friendly terms with Sergeant Jifkins at the time when he said "I do do it," would you have considered it your duty to have brought him up? Perhaps, if he had been a non-commissioned officer whom I could have trusted, I might have said, "Here is evidence that you did not do it."
273. You would have done that instead of taking him before the Adjutant? Perhaps. I might have considered the circumstances anyhow.

274. But you could not trust Jiffkins—is that it? At that time I could not trust him.

275. *Chairman.*] Sergeant Jiffkins in his letter to the Major-General, paragraph 8, page 4, of the printed papers, says:—

Mr.
W. Barnwell.
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The awards of above Court of Inquiry were, Warrant-officer and late Quartermaster-sergeant Moyens and self to be transferred to Sydney from Maitland, at own expense (see General Order No. 26, paragraph 1, of 12th January, 1890), but, nevertheless, Warrant-officer Barnwell, on the 14th February, 1890, made out a railway order for late Quartermaster-sergeant Moyens to travel to Sydney on duty; and, further, prevented a report on the same being forwarded from me, 18th February, 1890, to Assistant Adjutant-General for the information of the General Officer Commanding.

Do you say you have no recollection of making out this railway order for Moyens? I have no recollection at the present time of having done so. If I had made out the pass it would have been certain to have come under the notice of the military authorities through the railway pass return. Therefore, if I had had the mind to give him a railway pass with the intention of his escaping the punishment and getting his passage free, there would have been no means of preventing the military authorities from finding it out.

276. So you can say that you are almost certain you did not make it out? I have no recollection whatever of the circumstance having come under my notice as regards the railway pass.

277. How do you account for this passage in the "Minute Paper," page—

C, 7, and 8.—Proceedings of Court of Inquiry attached, on which General Officer Commanding decided. A free pass should not have been issued.

Is not that evidence that the free pass had been issued to this man? There is no evidence to show that the pass was issued.

278. But is it not assumed there that the pass was issued? That lies with the military authorities. If that pass was issued they could have deducted the cost of the pass. There is really nothing in that matter at all. If the man made out a pass himself and came down on a railway pass, and the authorities would not allow it, they could easily stop his pay for that amount. There was nothing in that even if the pass was made out.

279. There is a good deal in it for this reason: Here are two men quarrelling, and according to the decision of the Court one of them is the aggressor and chief offender; and you yourself have admitted that to be so. Although those two men, as well as yourself, who were blamed as well for not stopping the quarrel more quickly, were ordered to come down to Sydney at their own expense, according to the statement made by Sergeant Jiffkins, which you cannot deny, and which in this minute is presumed to be true, you made out a pass for the man who had been the chief offender? I did not say that I made it out, and there is nothing to prove that I did.

280. Do you deny it? I say I have no recollection. It is not necessary for me to deny a thing which did not happen—that I have no recollection of.

281. But what could this minute mean unless you had made out the pass? It does not follow that I made out the pass.

282. Could anyone else have made it out? In any case the Commanding Officer of the district would have to sign it.

283. But whose duty would it have been to make out a pass? Anyone in the office requiring a pass makes one out by taking a blank form and filling in the stations, and the Commanding Officer has to initial it.

284. The records of the office would show whether or not a pass was issued? I do not know.

285. Is it a fact that Sergeant Jiffkins himself made out the pass under your instructions? I could not say. If I have no recollection of the circumstance, how can I say anything about it?

286. Do you desire to make any statement in addition to your evidence already given? I would like to point out some discrepancies in the printed papers.

287. *Mr. McCourt.*] Do the facts to which you desire to refer already appear in the printed papers? Yes.

THURSDAY, 3 MAY, 1894.

Present:—

MR. McCOURT, | MR. DARNLEY.

G. D. CLARK, Esq., IN THE CHAIR.

Charles Fyshe Roberts called in, sworn, and examined:—

288. *Chairman.*] What position do you occupy in the Public Service? I am Military Secretary.

289. You knew Sergeant Jiffkins? I have seen Sergeant Jiffkins several times. To the best of my recollection the first time I saw him was some time in 1892.

Colonel
C. F. Roberts.
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290. You remember the circumstance of his dismissal from the service? I do not know that he was dismissed until some time after I recommended his dismissal. His dismissal was carried out by General Richardson.

291. Do you remember what charge led to his dismissal? He was up before me on a charge, and I cautioned him that it would be his last chance if he was brought up again. That arose from some disagreement, if I remember rightly. Afterwards he was brought up before me for making a false statement to Captain Bouverie, I think it was; and while that charge was being investigated it transpired that he had been looking at some books that he was really not entitled to look at, or it was not his duty to look at.

292. He was charged with making a false statement. He was accused by Warrant-officer Barnwell with taking notes from an official register, and he denied having taken any notes from the book? That was partly it; but I think the false statement had reference to something else before that. I cannot remember exactly, not having had the papers before me to refresh my memory. To the best of my recollection, he was brought up before me for making a false statement, and during the examination it turned out that he had been found looking at one of these registers. That is distinctly against the rules. A man should not do that unless he is ordered to do it, and it is part of his duty. That was added as part of the crime.

293. But was not the false statement a denial of having copied anything from the book? I think it was something of that sort, as well as I remember. I know Captain Bouverie brought him up for making a false statement to him.

- Colonel
C. F. Roberts,
3 May, 1894.
294. You have no knowledge personally of his having copied from this book? No; it took place in quite another office. It took place in Phillip-street, and he was brought up before me at Dawes' Battery. He was brought up before me because I was Acting Commandant.
295. The statement was made by Warrant-officer Barnwell? Warrant-officer Barnwell was one of the witnesses, and there was somebody else. I remember Captain Bouverie and Warrant-officer Barnwell, and, I think, another witness was Garrison Sergeant-major Tideswell.
296. Was the official register in use at the time? I suppose it would be at that time. It might have been, but I do not know. The reserves offices were down in Phillip-street, quite distinct from the headquarters office, and any work they had would be done in their own offices under Captain Bouverie.
297. Do you know if the register was of a private and confidential character? I would not say that it was private and confidential, but it was a Service register, not supposed to be looked into unless by order. For instance, if you wanted to look up anything, you might give direct instructions to a sergeant or somebody—generally a confidential clerk—to look up in the register so-and-so, or so-and-so.
298. Do you know where the register was at the time? From what I remember from the evidence, it was in a sort of an out-office they had, or a part of their offices—a place that was being used as an office, I think, or a lavatory.
299. Was the book lying open in the lavatory? I think the lavatory at that time was being used as part of the office; at least to the best of my recollection the evidence before me proved that.
300. But you are not sure about that? No, I cannot be certain; but to the best of my recollection one of the sergeants said he had been himself using the book in that place, and had left it open at the middle or beginning and when he came back it was open at a totally distinct and different place.
301. Had Jiffkins any right to go into that room? He might have had for all I know. I do not know exactly what his duties were.
302. Did you see the paper upon which he had written what was supposed to have been copied from the book? There was a small piece of paper produced at the inquiry which was said to be the piece. I cannot remember whether it was the particular piece of paper itself with the writing on, or a corresponding piece of the envelope—one of the two. What I do remember is this, that there was a date on this piece of paper, or so it was stated in the evidence, some five or six years back. I think it was eighty something.
303. *Mr. McCourt.*] Is this anything like the paper [*Paper handed to witness*]? No.
304. *Chairman.*] Is that a return that Sergeant Jiffkins received instructions to make out in the very room where this book was lying? I cannot tell you that, because I had nothing to do with the reserves. The only way that I remember anything about this matter is that Jiffkins being a staff-sergeant his case had to be referred to the Commandant, and as the Commandant was on leave, and I was acting for him, Jiffkins was brought up before me, as any other staff-sergeant would have been for having committed a crime of some sort. This paper I know nothing about.
305. You could not tell whether, in making out this return, Jiffkins might possibly have had to refer to this particular register? He might or he might not, that is a thing I could not say anything about. This paper does not look a bit like an official document. The person who might give the best evidence in regard to this paper would be either Warrant-officer Barnwell or Sergeant-major Tideswell, who would understand more about these things than I do, because this is purely Rifle Reserve Company business. I may say that I gave no instructions in reference to this return.
306. Sergeant Jiffkins was charged with this offence of making a false statement and brought before the proper authorities? Yes. First of all he was brought before Captain Bouverie, as would naturally be the case, and Captain Bouverie brought the case on to the headquarters' office.
307. When he was brought before the proper officers was Sergeant Jiffkins permitted to make his defence? He was allowed to say all he could before me; but it was not very much that he could say in his defence.
308. *Mr. McCourt.*] You called upon him? Yes; he could say as much as he desired. In fact, he talked so much that we were obliged to put an end to it.
309. *Chairman.*] He was allowed to cross-question his accusers? He was allowed to ask them any questions. I can remember one question distinctly. He asked, "Can you produce the piece of paper that I wrote upon?" I remember that distinctly. Some three-cornered bit of paper was brought out which I think one of them said they had taken out of his pocket.
310. *Mr. McCourt.*] He had ample opportunity of clearing himself—you are distinct upon that? As far as I am concerned, I let him ask all the questions I thought were necessary. When I had made up my mind about the case, there was no further necessity to go on.
311. *Chairman.*] All your knowledge of this particular case was based upon a statement by Captain Bouverie? I think there were three witnesses against him.
312. *Mr. Darnley.*] Was not Quartermaster-sergeant Molloy one of the witnesses? Yes. I remember now it was Quartermaster-sergeant Molloy.
313. *Chairman.*] Captain Bouverie's knowledge must have been based upon the statement of Warrant-officer Barnwell, who has himself admitted that he was the only person present in the room at the time Jiffkins was said to have been copying from the register? To the best of my recollection Captain Bouverie said he went into this charge, and Sergeant Jiffkins denied ever having done anything of the sort, and eventually, before Captain Bouverie, they took the piece of paper out of his pocket.
- 314-15. Do you know why the charge was altered from one of making a false statement to the charge of tampering with official documents? I altered that myself, because the latter was, in fact, an additional misdemeanour. When Jiffkins was brought before me, it was proved that he had no business there. Barnwell and Molloy said they knew he had no business there. I think it was Molloy who was taking the extract from the book, so that he would be the only person who ought to have had charge of it at that time.
316. Is it possible that the register that Jiffkins was supposed to have copied from was not the book that it was represented to you to be? That I could not say. They told me most distinctly it was the book that Jiffkins had no right to. In fact, as far as I remember, Molloy said, "I was using that book during the day, and had left it open at a certain place, and when I went back I found the book turned up in another place"; and one of them saw Jiffkins taking notes, whereupon, I think they went on to say, he hurriedly shut up the book.
317. Are you aware of any personal animus between Barnwell and Jiffkins? According to the evidence produced before me they had several disagreements. To the best of my recollection Jiffkins said he could not serve or could not work under Barnwell.

318. After the trouble at West Maitland the three men were transferred to Sydney. The Major-General recommended that they should be separated, and wrote this minute :—

Colonel
C. F. Roberts.

Seeing the long-continued friction between W.-O. Barnwell and this N.C.O., it would perhaps be well to transfer him, and thus give him a final chance of re-establishing himself.—J.S.R., M.-G., 28/1/92.

3 May, 1894.

They were all three sent to Sydney and kept together in the same office. Do you know who was responsible for keeping them together after it had become apparent to the superior officers in the service that they could not get on together? I should say either the Reserves Staff or the Headquarters Staff. I should think the Adjutant-General would be the only person who could direct that they should be separated.

319. I suppose, in your judgment, Captain Bouverie was a thoroughly reliable man? Oh, yes, I think so, from all I have known of him—and I have known him a good many years.

320. If you will look at the bottom of page 23 of the printed papers you will find that Captain Bouverie states in a memo., "Whilst I was taking this down Mr. Barnwell called S.G.S. Jiffkins a mischief-making cur. He also called him a thing." You would hardly think that was proper language for a superior officer to address to one of his staff? I should certainly say not; it would be most improper language.

321. And it is hardly likely that very cordial relations should subsist between those two officers if that kind of thing were indulged in? This seems to have taken place some time after Sergeant Jiffkins was before me.

322. I suppose that if an officer in the position of Warrant-officer Barnwell had a personal animus against a man under him, he could not only make things very uncomfortable for that man, but he could frequently find opportunities of bringing complaints against him? If he were a man of unworthy motives like that, of course he could. It would be easy enough to make a small crime into a big one if he could get sufficient evidence.

323. On page 12 of the printed papers, Colonel Mackenzie says :—

Warrant-officer Barnwell, of the Permanent Staff, and attached to the Northern Reserves, has seen fit to interfere with instructions, evince undue animus, cavil at decisions, and finally ignore his Commanding Officer.

If that is the case, do you not think it is just possible that in these frequent charges against Jiffkins, Barnwell may have been actuated more by personal feeling than from any desire to uphold proper discipline in the service? I do not think it would be to the benefit of the service to retain a man of that disposition.

324. In a letter by you to the Principal Under Secretary, dated the 5th June, 1892, speaking of Sergeant Jiffkins, you say :—

On the 12th January, 1892, he was brought up for neglect of duty. The case was a serious one, connected with non-delivery and posting of letters, and for this he was reduced to a lower grade of pay.

Was it the duty of Sergeant Jiffkins to attend to the delivery of letters, and so on, neglect in respect of which is here complained of? In that case, I remember the evidence proved to me that he had been distinctly told to deliver certain letters that day.

325. And he had failed to do so? Yes; he was told to deliver the letters by a certain hour, or by a certain day? I know there was a failure to perform the duty, and he went away. He was absent for a considerable time. Instead of delivering the letters he failed to do so.

326. Had you any evidence of the incompetence of Sergeant Jiffkins during the time he was in the service? No; I was only acting as Commandant from the 1st of January to the end of February, while General Richardson was away. In fact, the first time I saw Jiffkins was on the occasion of the inquiry of the 12th January, 1892.

327. You are aware that he had a long military experience in the Imperial service? I was not aware of that at the time. I knew he had been placed in the position, and having been placed there by the General I supposed he ought to be a fit person. With regard to this charge, I say in my letter, to which reference has just been made, that Captain Bouverie had given him notice that if he continued to go on in the way he was going on, it might be necessary to recommend his dismissal. It was because he had been cautioned so recently that I cautioned him that the next time he came before me after January it must be his last chance.

328. Were you annoyed at Jiffkins at the time when the case came before you, in consequence of his having written direct to the Major-General? I was not annoyed. I pointed out to him that he had written a letter to the officer commanding the garrison, and at the same time he had written a similar letter to the General, who was on leave, which was not a correct thing to do.

329. Had he not permission to write direct to the General? That I know nothing about. He afterwards told me had, but that would make no difference to me. Jiffkins, with his long knowledge of the service, ought to have known that the proper way to forward any grievance was through the proper authorities. As far as I can recollect, his letter to the Major-General did not go through the Adjutant-General.

330. At the inquiry at which you presided—the last inquiry—was not Jiffkins given to understand that no final decision would be come to until the General returned? No, distinctly not. I have a most distinct recollection of saying that I would report the matter to a higher authority. For the time being, I was the highest authority, and it could only go to one other authority, and that was the Chief Secretary, and, as well as I remember, on the very day that Jiffkins was before me, I wrote the letter to the Chief Secretary.

331. *Mr. McCourt.*] Do you know whether Sergeant Jiffkins was, generally, a good officer? I had not sufficient knowledge of him to say. The whole of my knowledge of Jiffkins was from the middle of January to the end of February.

332. In one of his letters, on page 27 of the printed papers, Sergeant Jiffkins says :—

On 2nd April, 1892, Sergeant Jiffkins was informed unofficially that the charge upon which he had last been dealt with (paragraph 6) had been added to by charges of "taking notes from a register," and "furnishing information outside to someone."

Sergeant Jiffkins has never been officially informed that any such charges were against him, and if they exist he has never been given an opportunity of replying thereto.

Is that true, or is it not true? It is it not true. The charge itself disproves the statement. The charge is entered in these words, "making a false statement and taking notes from an official register."

333. Then it is not true that he had not an opportunity of defending himself? I do not know whether he had before the General afterwards.

334.

- Colonel C. F. Roberts. 334. But before you? He had every opportunity of clearing himself from the charge of taking notes from the official register. I added that charge after I had heard the evidence of Captain Bouverie—that, in addition to making a false statement, he had done this.
- 3 May, 1894. 335. In recommending his dismissal did you take into consideration the previous charges against him? Certainly; as far as I was concerned. Within three months there had been three cases against him, as far as I knew.
336. If the last charge against him of 22nd February had stood alone, would you have considered it so serious that you would have recommended his dismissal? Well, no. I might possibly have said, "I really cannot stand this; you can have another chance; the next time you will be dismissed."
337. Would you have taken the extreme course of recommending his dismissal if that charge had stood alone against the man? I most likely would have reported it. I might not have recommended dismissal, but I would have requested that some special notice might be taken of the matter.
338. But you would not have gone so far, if that charge had stood alone, as to dismiss the man for it? No.
339. Therefore, you considered the previous charges for which he had suffered? I considered that his previous conduct had been so bad, and there having been three distinct charges against him three months running, namely, December, January, and February, I thought it was of no use having a man of that sort in the Service.
340. Did it occur to you that these officers—Moyens, Barnwell, and Jiffkins—having been quarrelling and fighting for a long while, one was as bad as another? That could not occur to me. All I knew from Jiffkins was that he could not serve with one of these men. All this previous knowledge in reference to his quarrelling came out through the rest of the staff. I knew nothing of my own personal knowledge, except what I heard from these people. As to his fighting and quarrelling with Barnwell, and these other things, they occurred previously.
341. Have you looked through these printed papers? I have only glanced over them now. I remember seeing them when they first came out.
342. Did you look over them then? I did.
343. In view of what you have seen in the papers, do you not think Barnwell, Molloy, and the others were all to blame to a certain extent, having been fighting one with the other? I do not know so much about Molloy, but—perhaps I have no right to make this remark—I do not think Barnwell has done his work as he should have done it.
344. Having had a quarrel with Jiffkins, and Jiffkins being a quarrelsome man, do you not think that perhaps Barnwell was a little more strict towards him than he might have been? That might have been the case. If you find a man always giving you trouble, you naturally keep your eyes specially upon him. If you do not I do not consider that you are doing your duty.
345. One of the charges brought against Jiffkins was something to this effect—that Barnwell gave him instructions that when there was an alteration made in the book he should initial it, and Jiffkins in reply said, "I do do it";—on that Barnwell immediately had him arrested and brought up on a charge of cavilling at orders;—if these men had been working harmoniously together, do you think a charge would have been laid on such a slight statement as that? It depends upon the tone in which the remark was made. You can say a thing nicely, and you can say a thing insolently if you like.
346. When Jiffkins was brought up on a charge of taking notes from the register the only defence he could possibly offer would be a simple denial;—he had no witnesses, and it was simply his word against that of Barnwell's? Yes; and there was the fact that they did find something in his pocket—some extract or some paper.
347. To the best of your recollection, was there anything on the piece of paper that was taken from the book? That was a matter which could have only been decided by reference to the book which was kept in Phillip-street, and the charge was investigated at Dawes' Battery. The date on the piece of paper may or may not have been in the book.
348. But was not the piece of paper taken as corroborative evidence of his guilt? Certainly; they declared that that was the piece of paper upon which he had taken the notes, and that it was found in his hand. When we investigated the case it was very clear to me, from the evidence produced, that some extract had been taken from the book, or at any rate that the book had been searched by an unauthorised person.
349. Were the records in the book of a private nature? All military matters are more or less confidential, and, as I said before, only an authorised person should go and take extracts.
350. Do you produce the butt of a railway pass-book in which there is an entry dated 14th February, 1890, of what purports to be a second-class railway pass from West Maitland to Sydney, granted to Staff-Sergeant J. Moyens on duty? Yes. There is a blank for the signature of the Lieut.-Colonel Commanding the Reserves, and across the butt is written the word "cancelled" with the initials "A.W.," which are probably the initials of Colonel Wilkinson.
351. Do you know the handwriting in the butt? No.
352. *Mr. McCourt.*] Do you remember the nature of any of the questions put by Jiffkins to Captain Bouverie when you held the inquiry? I think Jiffkins proved that Captain Bouverie had not seen him taking notes from the book. I think he asked the question "Did you see me do it?"
353. In the printed papers there is a report of the proceedings of a Court of Inquiry concerning a charge against Warrant-officer Barnwell, and the evidence is given exactly as it was taken by the Court;—in the case against Jiffkins, was not the evidence taken down in the same way? No; the two inquiries were very different. In the case referred to, the Court of Inquiry sat for the purpose of taking evidence to be forwarded to the Commandant to enable him to arrive at a decision. Where a case occurs in Sydney, if it is sufficiently serious to be brought before the Commandant, he hears the case personally.
354. Is the evidence then taken down? No; the examination is *viva voce*. It is very much like Police Court evidence.
355. At the inquiry did Jiffkins produce any return which he said he had been ordered by Barnwell to make out? Not to the best of my recollection.
356. He may have done so without your recollecting it? I do not think he did, because he never gave any reasons why he should have been at the register

357. You did not feel any pique or offence at Jiffkins writing to General Richardson when he was on leave? It was immaterial to me what he did, except that he was doing wrong.
358. One of the main points in Sergeant Jiffkins' case was that he had not a chance to clear himself—that he was dismissed on a charge of which he had no knowledge until after he received notice of dismissal;—are you clear upon the point that he had ample opportunity of clearing himself if he wished? When I altered the charge I read it to him. The whole thing was gone into. He said all he could say for himself with regard to taking notes, and the other witnesses proved as much as they could against him. It was clear, to my mind, that he had been at the book which he really had no right to.
359. And he had ample opportunity of proving otherwise if he could? Yes. I think Jiffkins' complaint is, that when he was finally told that he was to be discharged, he had not the opportunity of explaining himself. That is the impression in my mind—that when he was sent for in April and told that he was to be dismissed, he had no opportunity of saying anything in defence.
360. When you decided the case, did you inform Jiffkins what your decision was? I could not. I said, "This case will be referred to a higher authority."
361. You did not intimate to him the nature of your decision? He should have known, from his having been up before me previously, when I told him it would be his last chance, what the decision must be. In fact, to the best of my recollection, I did tell him he would be discharged; but it is now two years ago, and I cannot speak positively.

Colonel
C. F. Roberts.
3 May, 1894.

Mr. William Jiffkins recalled, and further examined:—

362. *Chairman.*] Is the butt of the railway pass produced the record of the railway pass stated in your evidence as having been made out by Warrant-officer Barnwell in favour of Quartermaster-sergeant Moyens? Yes.
363. Is it in Barnwell's handwriting? It is.
364. The word "cancelled" is written across it;—do you know if it was cancelled without being used, or if it was used on the understanding that Moyens would have to repay the amount? There was no understanding about Moyens having to pay it afterwards.
365. Are you sure Moyens used it to come to Sydney? I could not say that. I will swear that the pass was taken out between the hour of 4 o'clock that afternoon and 10 o'clock next morning. Moyens travelled to Sydney that night.
366. *Mr. McCourt.*] The first charge against you in these papers is one of general laxity and want of zeal, reported by Major MacDonald, Cavalry Brigade? I never knew of the charge until I saw it in print in these papers. I was brought up for something, but what it was I do not know.
367. Were you not informed of it? "Laxity and want of zeal," I never heard expressed until I saw it in writing.
368. The entry in the defaulters' sheet says, "Return to duty with Infantry Reserve"? Yes.
369. What did you say in answer to the charge? When I was brought up the charge was for irregularities, or, as I understood, some deficiency in spelling; something in connection with the horse equipment. At that time I was Acting Quartermaster-sergeant in the Cavalry Brigade, Phillip-street.
370. It was something in regard to your writing or spelling? Yes. They afterwards altered the charge, but I was never questioned about it, and never saw it, until I read it in this paper as laxity and want of zeal.
371. *Mr. Darnley.*] What happened was that you were taken from the Cavalry to the Infantry Reserve? Yes.
372. *Mr. McCourt.*] You are a drill-instructor, are you not? Yes.
373. In regard to the performance of your actual duty as drill-instructor, has there ever been any charge brought against you by any of the officers of the Department? You will see something in the papers in reference to a charge of disrespect, rudeness, and offensiveness, at Inverell.
374. Generally speaking, so far as your actual duty of drill-instructor was concerned, your service was good and was not objected to by any officer in the Department? It was never objected to before nor since. There was only one paltry case at Bombala, in reference to which they have a letter in the office complaining that I would not allow certain men to shoot and fire away just as they thought fit—a letter from a solicitor named Loveridge, and a Mr. Dawson, of Bombala. That is the only complaint against me as a drill sergeant.
375. None of the officers who have inspected your work ever complained? I got the highest praise.
376. For doing your actual duty? Yes.
377. Do you attribute your dismissal from the Service practically to trivial quarrels that arose between you and other officers connected with you? Practically through Barnwell.
378. But owing to little petty disagreements? Yes; that should not be on paper at all.
379. If you had been separated from Barnwell when you were ordered to be separated, do you think you would have continued to do your duty to the satisfaction of your superior officers? I do. Perhaps I may be allowed to explain in reference to an entry in the defaulters' sheet, of "Insolence to Warrant-officer Barnwell." That occurred in this way: In the room in which we were working my table was close to the edge of the door when it was open, and I sat writing at the end of the table. Barnwell sat up in a corner, as it were. The table he had was crossways, with another man at the other end. Captain Nathan came to the door, where he could almost touch my elbow, and turned round and said, "Have you seen the messenger lately?" He being close to me, I said, "He was here half a second ago, sir." Barnwell in the same breath said, "He was here half a minute ago." I think I said half a second and Barnwell said half a minute; but it may have been the other way. At any rate, Captain Nathan was satisfied with the reply and went away. Immediately he had gone, Barnwell jumped up and said, "I do not see, Sergeant Jiffkins, what business you have to make a reply when an officer comes in and asks a question." I said, "Well, I thought really that you were not prepared—that you did not know where the messenger had gone." He said, "Consider yourself a prisoner; I will not stand any more of your insolence." That is every word that was said, and I lost 6d. a day through that—that was in April—from the time I was dismissed, besides having to sit in the wash-house through Barnwell's orders—in this lavatory.
380. *Mr. McCourt.*] Did you ever give any information that you ought not to have given to any newspaper or newspaper reporter? Never, knowing as I did the serious consequences of it in the Service.
381. What is your age? Fifty-seven.

Mr.
W. Jiffkins.
3 May, 1894.

MINUTES OF EVIDENCE ON THE CASE OF STAFF-SERGEANT W. JEFFKINS.

WEDNESDAY, 9 MAY, 1894.

Present:—

MR. DARNLEY, | MR. McCOURT.

G. D. CLARK, Esq., IN THE CHAIR.

Charles Fyshe Roberts recalled and further examined:—

Colonel C. F. Roberts. 382. *Chairman.*] In reference to that pass, dated 14th February, 1890, on which Sergeant Moyens was supposed to have come from West Maitland to Sydney, do you recognise the handwriting? From a comparison made between the writing on the pass and a return made out by Staff-sergeant Barnwell, I am convinced that the handwriting is that of Barnwell.

9 May, 1894.

1894.

NEW SOUTH WALES.

PROTECTION OF THE ABORIGINES.

(REPORT OF BOARD FOR, 1893.)

Presented to Parliament by Command.

The Aborigines Protection Board to The Principal Under Secretary.

Sir, Office of the Board for the Protection of the Aborigines, Sydney, 1 March, 1894.

In accordance with the usual practice, we have the honor to furnish, for the Chief Secretary's information, a report of the operations of the Board during the year 1893, together with particulars regarding the present condition of the Aborigines of the Colony, and a statement in detail of the expenditure of the funds voted by Parliament for their relief.

The census returns of the Aboriginal population of the Colony [*Appendix A*], compiled from information collected by the police on the 15th October last, show that during the twelve months ended that date there was a decrease of 230 in the number of full-bloods, and an increase of 136 half-castes, or a net decrease of 94. The total now stands as 7,255, as against 7,349 in 1892.

In the case of the full-bloods, the reported deaths exceeded the reported births by 43, the numbers being 150 and 107 respectively. The number of deaths, however, was 57 less than the average for the five previous years, indicating the probable result of increased care and comfort administered to the race. The deficiency unaccounted for is probably due to the difficulty of taking a correct census, owing to the migratory habits of the Aborigines in the remote districts, and by the Border tribes crossing into the other Colonies. The Aborigines on the Paroo and other rivers are continually moving between stations in this Colony and others in Southern Queensland. A number have also returned to the Coranderrk Mission Station, Victoria, which place they were induced to leave some years back to take up their residence at Maloga, in the Moama district.

The increase by births over deaths amongst the half-castes was 74, the numbers being 136 and 62 respectively, which figures are about the general averages.

A total sum of £15,253 14s. 1d. was expended by the Government during the year for the benefit of the Aborigines. [*See Appendix C.*] This includes an expenditure of £7,809 3s. 1d. by the Board on Aborigines generally, £826 0s. 8d. for the fares of Aborigines travelling on the Government Railway lines, and £2,189 11s. 3d. in liquidating claims incurred by the Aborigines Protection Association in connection with the Mission Stations at Cumeroogunga, Warangesda, and Brewarrina; £822 3s. 2d. by the Medical Adviser to the Government; £1,157 16s. 9d. by the Minister of Public Instruction; £2,378 19s. 2d. by the Controller-General of Stores; and £70 by the Principal Under Secretary.

For purposes of comparison, it may be remarked that in the neighbouring Colony of Victoria, where the total number of Aborigines is 732, the sum voted by Parliament on their behalf for the current year is £5,600, or £7 13s. per head, against an actual expenditure of £15,253 14s. 1d., or £2 2s. per head, in New South Wales last year.

A statement in detail is given of the expenditure by the Board. [*See Appendix D.*] On the last day of the year 1,614 Aborigines were being supported by the Board. Of this number 727 were children, and of the remainder 2 were over the estimated age of 90 years, 16 over 80, 72 over 70, 212 over 60, 180 over 50, and 405 between 20 and 40. Of the total, 453 were classed as too old and feeble to earn a living for themselves, 17 as blind, 54 sick or recently sick, and 46 crippled or of weak intellect. Forty-eight families

families were being temporarily assisted whilst cultivating Government Reserves, and 41 men and 194 women were unable to procure employment. Of the children, some were orphans, others were the children of destitute Aborigines, whilst a large number were receiving rations as an inducement to attend school.

During the year ten additional reserves, aggregating an area of 791 acres, have been set apart for the use of Aborigines at Currowan, Parkes, Ingalba, Oban, Terembone, Glenorchy, Tingha, Booligal, Shark Islands, and Spencer Creek. Extensions of the reserves at Grafton, St. Clair, Cumeroogunga, and Blakeney Creek have been granted, the increased area totalling 640 acres, and the Minister for Lands has approved of the Aborigines being allowed to retain the use of Cabbage-tree Island, Richmond River, which they themselves took possession of a few years back. The reserves at Brewarrina and Tathra have been reduced in area 600 and 45 acres respectively, and those at Mongarlowe (9 acres) and Cargo (40 acres) have been revoked.

On the 31st December last there were ninety-four reserves in different parts of the Colony, with a total area of 23,894 acres.

The following are extracts from district reports regarding the new reservations, showing the uses to which they are being put:—

Currowan.—Area, 60 acres. A fair quantity of timber has been felled to fence in the land, and 3 acres have been enclosed for the cultivation of maize. The tools and farming implements supplied by the Board have proved very acceptable, and are being made good use of. The Aborigines are cultivating wattle, and also purpose growing maize, potatoes, &c. They have built themselves good, substantial dwellings, and it is probable they will soon be independent of Government aid.

Parkes.—Area, 85 acres. A number of families intend residing on the reserve on Coobang Creek, and the use they purpose making of it is principally as a run for their horses.

Ingalba.—Area, 107 acres. This reserve is the general camping-ground for the Aborigines of the Walcha district. As a rule there are from thirty to fifty residing upon it. They are improving it a good deal by clearing, ringbarking, fencing, and making vegetable-gardens. The land is of good quality, situated in a nice bend of the M'Donald River, in which fish abound. They are all very well sheltered, having good slab huts.

Oban.—Area, 200 acres. Thirty Aborigines in all camp on the reserve. The old and infirm are comfortably housed in the three dwellings recently erected for them by the Board. The dwellings are kept clean and tidy. A little clearing has already been done around them, and small vegetable-gardens made.

Terembone.—Area, 15 acres. Used merely as a camping-ground, Aborigines to the number of thirty usually residing upon it. The able-bodied are employed on neighbouring sheep-stations, and the old and infirm receive rations from the Board.

Glenorchy.—Area, 23 acres. The land is used as a camping-ground. The men are generally employed on stations. Comfortable dwellings have been erected for the old and infirm, who are in receipt of rations from the Government.

Tingha.—Area, 20 acres. This reserve is occupied by an old half-caste woman and some of her children. She has cattle of her own, keeps bees, &c., and with a little assistance from three of her daughters, who are out at service, is independent of Government aid.

Booligal.—Area, 250 acres. About twenty Aborigines who reside in the neighbourhood of Booligal intend making use of the reserve as a camping-ground, and to graze their horses upon. The land has a good frontage to the Lachlan River.

Shark Islands and Spencer Creek.—These reserves, with an area of 25 and 6 acres, respectively, are situated in the Macleay district. They are both occupied and being prepared for the cultivation of maize.

St. Clair.—This reserve, the area of which has been increased from 58 to 82 acres, is now occupied by fourteen Aborigines (six men, four women, and four children), all full-blood. They have enclosed for cultivation purposes about 20 acres, and good crops of maize, tobacco, vegetables, and fruit are expected. They are also the owners of horses, pigs, and poultry, and have erected comfortable dwellings for themselves. The leader is an excellent farmer, and his portion of the reserve can compare favourably with his white neighbours' places.

Cabbage-tree Island.—This island, which contains an area of about 200 acres, is situated in the Richmond River, about 2 miles from Wardell. Seven men, with their wives and children, and two single men reside thereon. The land has been measured off into 10-acre blocks, and one allotted to each family. The Aborigines have cleared 40 acres, one-half of which have been planted with sugarcane, the remainder with maize, vegetables, &c. They all work well, and are in a fair way of making comfortable homes for themselves. Their dwellings are now being made more weatherproof, a quantity of roofing-iron having been supplied by the Board. A suitable building has been erected and furnished for the education of the Aboriginal children residing on the island. A teacher was appointed, and the school brought into operation in October last. At the end of the year the enrolment of the pupils was 24.

As instances of the improvement which has been effected by Aborigines on reserves which have been in use for some years past, the following extracts from a few district reports will be read with gratification:—

"Nearly the whole of the Pelican Island Reserve, Macleay River, is now under cultivation, 55 acres being under maize."

"At Belmore River a full-blooded Aboriginal woman and her children have erected a neat weather-board cottage for themselves, and they keep it exceedingly clean. The reserve is all fenced and under crop."

"There

"There is every indication of a prosperous season in the Macleay district, and the police are making arrangements with the Aborigines to ship their produce to the Sydney market."

"The Aborigines at Gulargambone have enclosed the whole of their reserve with a six-wire fence, have 4 acres grubbed and cleared ready for the plough, and are now erecting a drop-fence around that portion."

"The reserves in the Port Stephens district are now again occupied by the Aborigines. Several comfortable huts have been erected by them, and a fair start has been made in the way of preparing the land for cultivation."

The total number of children now receiving instruction is 640—607 at schools, and 33 privately.

Schools have been established during the year in connection with the Home for Aborigines near Grafton, and at the Aboriginal settlements at Mulyan, near Cowra, and Cabbage-tree Island, near Wardell. The school at Pelican Island, Macleay River, was closed towards the end of the year, in consequence of the diminished attendance of pupils. A number of the children, however, have since been induced to attend the Public School in the neighbourhood.

There are now twelve schools in operation specially for the instruction of Aboriginal children, viz., at Barrington, Brewarrina, Brungle, Cabbage Tree Island, Cowra, Cumerogunga, Forstor, Grafton, Rollands Plains, Walaga Lake, Warangesda, and Wauchope. These schools are inspected periodically by the district school inspectors, and satisfactory reports are received as to the progress made by the pupils. The usual standard for Public Schools being scarcely applicable for schools for Aboriginal children, at the suggestion of the Board, the subjects now taught are confined to reading, writing, dictation, and arithmetic.

The police succeeded in obtaining twenty convictions during the year against persons for supplying Aborigines with intoxicating liquor, heavy fines being inflicted by the Benches in the majority of the cases.

A marked improvement is noticeable in the habits of the Aborigines, which is chiefly due to the efforts of the police to keep them from the towns away from temptation.

On the 11th August last a tribe of Aborigines was discovered in a wild state by some civilised half-castes in the south-western corner of the Colony, at a place known as Scotia Blocks, or "No Man's Country," about 100 miles in a northerly direction from Tareena, and in a space of country between Lake Victoria and Popiltah Stations. The tribe, consisting of 12 men, 8 women, and 10 children, are the progeny of an old man who, after committing a depredation some thirty years ago, escaped from Popiltah Run with another Aboriginal's wife. The Board requested the police at Wentworth to see that the Aborigines were in no way molested, and have applied to the Minister for Lands to have an area at Travellers' Lake, on which they are now camped, set apart as a reserve for their use. The site is isolated, and marsupials and game are plentiful in the locality.

The Aborigines, and more especially those of the inland districts, still cling to their old traditions and superstitions. An unusually large number congregated in August last at a place known as the Mole, on Bulregar Creek, about 85 miles from Warren, for the purpose of carrying out the rites known as "Bora," or "making of young men." Ninety-eight Aborigines in all assembled, some going from places as far distant as Cobar and Wilcannia. As the number included children, also aged men and women, by instructions from the Board, where any cases of destitution existed they were relieved by the issue of weekly rations of food, while the ceremonies were going on. The Barwon River tribes are now gathering at Goondooblue, near Mogil Mogil, for the performance of similar rites.

There are now fifty Aborigines in residence at the "Home," near Grafton. The health generally has been good during the year. Measles and influenza went through the settlement, but all the patients recovered, though several died of the same complaints in camps in other parts of the Clarence district. The site has been extended by taking in 105 acres of the adjoining Temporary Common, bringing the total area up to 305 acres. During the year 15 additional acres of forest land have been cleared and burnt off, 160 yards of permanent and a mile of temporary fencing erected, as also six huts and a number of other buildings. A bridge has also been constructed across the creek dividing the reserve, and the roadway improved. Floods in January and June covered the cultivation area, destroying nearly seventeen acres of crops. During the last few months of the year a fair quantity of potatoes, oaten hay, lucerne, sorghum, and buckwheat was raised. The total value of all improvements standing at the Home, and of stock and other property, on the 31st December, was estimated at £800. The expenditure during the year, including wages to Aborigines, was £500, or £300 less than in 1892.

The number of Aborigines at the settlement at Brungle, Tumut District, on the 31st December was 96, of whom 43 were full-bloods. Nearly half of the reserve is now under cultivation, principally wheat. The men are beginning to appreciate the advantage of having small portions of the reserve to cultivate for themselves, and additional blocks are now being allotted. The general condition of the

Aborigines

Aborigines has greatly improved, and their dwellings are comfortable and cleanly kept. Twenty children attend the school, and on inspection the classes obtained the requisite number of marks for a pass. This is all the more satisfactory when it is considered that a few years back not one of the children knew the alphabet. Sickness has been prevalent during the year, especially measles and pulmonary diseases. Deaths numbered six, and births five.

No change has yet been effected in the control of the Mission Stations at Cumeroounga, Warangesda, and Browarrina.

The donations to the Aborigines Protection Association reached a total of £326 0s. 11d., or £157 19s. 1d. more than in 1892. This, however, was chiefly the result of the appointment of a collector, who, with two Aborigines, visited several country districts during the first six months of the year, holding special meetings for the purpose of enlisting increased support from the public.

The cost of collecting the subscriptions (salary and commission to collector, travelling expenses, &c.) amounted to £119 2s. 4d., or 36 per centum of the total sum received. The net amount of subscriptions was, therefore, £206 18s. 7d.

The experiment of taking Aborigines about the country for the purpose of enlisting sympathy in their behalf, to which the Board were strongly opposed at the outset, was not accompanied by the success the Association anticipated, the expenses of collection being altogether out of proportion to the amount of subscriptions received, and the Aborigines were in consequence returned to the Mission Station at Warangesda.

The amount expended during the year on the three Mission Stations from the vote of Parliament was £2,189 11s. 3d., which, with a sum of £1,233 4s. 9d. expended by the Association from revenue received by them, makes a total of £3,422 16s. Claims for the last quarter of the year for payment by the Government, amounting in all to £436, were also outstanding on the 31st December.

In concluding their Report, the Board desire to acknowledge their appreciation of the liberality of Parliament—but which may admit of even further extension; of the valuable assistance rendered them by the several District Boards of Advice; and of the kindly feelings and sympathies exhibited by the members of the Police Force generally in assisting the Board to ameliorate the condition of the race, the result, we venture to think, in the interests of the Aborigines, eminently satisfactory.

We have, &c.,

EDMUND FOSBERY, Chairman.

RICHARD HILL,

PHILIP GIDLEY KING,

S. BURDEKIN,

A. M. HUTCHINSON,

W. H. SUTTON,

THOS. COLLS,

R. H. D. WHITE,

Members
of
Board.

APPENDICES.

APPENDIX A.

CENSUS RETURNS, 1893.

Locality.	Full-bloods.							Half-castes.							Grand Total.				
	Men.			Women.				Children.	Total.	Men.			Women.				Children.	Total.	
	Between 20 & 40 years.	Between 40 & 60 years.	Over 60 years.	Between 20 & 40 years.	Between 40 & 60 years.	Over 60 years.	Between 20 & 40 years.			Between 40 & 60 years.	Over 60 years.	Between 20 & 40 years.	Between 40 & 60 years.	Over 60 years.					
Animbo							7		1								1	58	
Arakoon	6	6	4	9	4	1		37	1	4	2						21	1	
Araluen					1			1										1	
Armidale	8			4			8	20	6							12	20	40	
Ashford	6	3	1	1	4			15		1						2	5	23	
Ballina	4	3	2	2	2	1	4	18	2							1	5	31	
Balranald	1	7	2	2	3	2	9	26	2							1	5	67	
Baradine						1		1	8	6			11	1		40	66	19	
Barraba									3				4	1		11	19	61	
Barrington and Enngonia	12	9	3	10	5	4	9	52	2				4			3	9	3	
Bathurst	1							1					1			1	1	4	
Bega	1							3					1				1	42	
Bellingen and Fernmount	8	4	3	6	7	2	6	36					1			5	6	2	
Berrina	1							1										6	
Blackville	2			1	1			3	2	1							3	8	
Blick's River	2			1	1			5	1				4			1	21	62	
Boggabilla	15	1		11	4		10	41	6	2			2			9	9	13	
Boggabri	3						1	4	3				2			4	2	24	
Booilgal	6	5		4		2	5	22	2				3			3	7	18	
Bourke and Byeroak	4			2			5	11	1				4	6	2	14	31	152	
Brewarrina and Gongolgon	13	9	15	20	14	7	43	121	5				4					18	
Broadwater	2	2	1	5	1		7	18										3	
Broke	2	1						3										1	
Broken Hill	1							1											
Brungle	9	3	3	7	3	1	15	41	8	6	2	10	4		29	59	100		
Brushgrove	5	4	1		3		3	16	3			2			1	6	22	6	
Buckley's Crossing		1		1			3	5	1								1	6	
Bundarra	2	1	2	1	1		10	17				1			4	5	22	7	
Bungwall Flat									2	2		2	1			10	16	16	
Camden									2		1		2	1		6	14	38	
Cannonbar	3	4	5	2	1	3	6	24	3			4	1		1	3	5	2	
Canowindra	1						1	2		1			1					2	
Carathool		1		1				1	2		1	2	1		7	13	14		
Carroll					1			1				2	1						
Casino	34	44	7	35	27	6	68	221	14			13	2		34	63	284	2	
Cassillis	1	1						2											
Cobar	3	4	2	9	3	3	18	42	1			2			3	6	48		
Cobargo	9	6	3	5	2	4	3	32	11	4	2	26	4	2	40	89	121		
Condobolin	8	4	2	5	4	1	5	29	3			3	1		4	11	40		
Coolaman	1			1			2	4				1				1	5		
Cooma							1	1		1			1			3	4		
Coonabarabran									13	2		9	3		31	58	58		
Coonamble	13	9	4	7	5	1	23	62	3	1		3			10	17	79		
Copeland	4	1	1	2			11	19		2		2			16	20	39		
Copmanhurst	7	14	3	13	6	3	24	70	3			6			22	31	101		
Coraki	5	5	2	5	2		15	34	4			1			13	18	52		
Corowa		4			3		3	10							2	2	12		
Cowra	3	2		1			4	10	3	3		4	1		25	36	46		
Cudgellico	1	2	1		2		3	9	2	1		1			10	14	23		
Cudgen	1	1					1	3				1			6	7	10		
Dandaloo	6	5		3	2		5	21	4			4			19	27	48		
Darlington Point (including Warangesda)	7	13	2	8	4		17	51	22	3		16	2		40	83	134		
Delegate	4	3	1	2			3	13							3	3	16		
Deniliquin	1	5		1	2			9	2							2	11		
Denison Town		1		1			7	9									9		
Drake	12	14	5	14	4		18	67	3	1		3	1		10	18	85		
Dubbo	2	4		2			3	11	3	3		4	3		17	30	41		
Dungog							4			1					4	5	5		
Eden	1	2		1				8									8		
Emu Flat	1						2	1	1						1	2	3		
Euabalong			1	1	1			5	4	1		1			27	33	38		
Eugowra		1						1	2	2		3	1		5	13	14		
Euriowie	1		2	2		2		7									7		
Eurobodalla							1	1		2		1	2		4	9	10		
Euston	1	1			1			3	2							2	5		
Forbes	10	2	5	1	1	1	2	22	6			6	3		27	41	63		
Forster	3		3	2	3		3	14	5	2		6	1		36	51	65		
Garah	9	2	5	4	3	5	13	41	5	5	1	7	3	1	22	44	85		
Gilgunnia	1		1	1		2		5									5		
Gladstone	2			2			4	10		1		2	2		10	17	27		
Glenn Innes	10	8	3	5			11	37	2	1		2	1		10	16	53		
Goodooga, Angledool, and Tatalla	14	20	18	8	17	23	64	164	4	1		3	1		16	25	189		
Grafton	6	5		2	4	3	4	24	4			6			25	35	59		

APPENDIX A—continued.

Locality.	Full-bloods.							Half-castes.							Grand Total.				
	Men.			Women.			Children.	Total.	Men.			Women.				Children.	Total.		
	Between 20 & 40 years.	Between 40 & 60 years.	Over 60 years.	Between 20 & 40 years.	Between 40 & 60 years.	Over 60 years.			Between 20 & 40 years.	Between 40 & 60 years.	Over 60 years.	Between 20 & 40 years.	Between 40 & 60 years.	Over 60 years.					
Grafton, South	9	12	4	9	12	...	23	69	3	1	...	1	1	...	4	10	79		
Grenfell	1	...	...	...	...	...	...	1	1	1	...	1	1	...	2	5	6	
Gresford	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	
Gulargambone	4	6	3	4	1	2	13	33	3	...	...	3	...	17	23	56		
Gunnedah	1	1	1	...	...	...	1	4	2	...	...	4	2	...	8	12	7	
Hargraves	...	...	...	...	...	...	...	...	...	...	...	1	1	...	6	7	7	
Hartley Vale	...	1	...	1	...	...	...	2	4	1	1	2	2	...	5	15	17	
Harwood	3	5	...	2	4	...	3	17	...	...	...	2	2	...	2	2	19	
Hay	4	1	...	...	...	...	2	7	...	...	...	...	...	5	5	12		
Hill End	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	1	1	
Hillgrove	2	...	...	2	...	1	4	9	1	1	...	...	...	...	2	2	11	
Hillston	10	3	...	5	1	...	21	40	2	...	...	3	1	...	5	7	47	
Inverell	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	4	4
Ivanhoe	...	2	3	1	2	4	4	16	...	...	...	3	1	...	1	1	17	
Kerrangby	3	2	2	3	2	1	5	18	3	2	...	3	1	...	7	16	34		
Kiama	...	1	...	1	1	...	5	8	10	1	1	3	...	15	35	43			
La Perouse	5	...	1	2	1	...	...	9	7	2	1	9	4	...	23	46	55	
Lawrence	10	1	...	14	...	...	11	36	1	...	...	1	...	2	4	40	40	
Lismore	18	12	6	4	6	3	10	59	5	2	...	4	...	8	19	78	78		
Liverpool	...	...	...	...	1	...	...	1	4	...	...	2	...	3	9	10	10	
Louth	17	9	...	14	...	1	19	60	3	...	...	...	1	4	8	8	68	
Macksville	7	5	14	5	7	10	18	66	10	3	...	10	8	...	49	80	146		
Macleay River	59	23	12	48	19	11	82	254	26	12	3	21	12	1	68	143	397		
Maitland East	...	...	...	...	...	...	...	...	...	...	...	2	...	...	1	3	3	3
Do West	...	...	...	...	...	...	2	2	...	...	...	...	...	...	...	...	2	2
Manilla	2	...	...	...	...	...	1	3	2	...	...	2	...	18	22	25	25	
Marsden	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Menindie	13	...	2	6	...	...	3	24	1	...	...	...	...	...	1	...	25	25
Meroe	11	5	2	6	1	2	3	30	1	...	...	1	...	...	2	3	32	32
Merriwa	1	...	...	1	...	...	...	2	...	...	...	1	...	...	1	1	3	3
Milparinka	30	14	...	23	1	...	16	84	2	1	...	2	...	10	15	99	99		
Milton	4	2	1	4	2	1	8	22	10	3	...	8	5	...	19	45	67	67	
Moama (including Cumerogunga)	6	3	2	4	2	2	24	43	26	9	...	24	2	...	68	129	172	172	
Mogil Mogil, Mungindi, & Collarendabri	15	8	9	10	15	1	26	84	7	1	...	5	1	...	23	37	121	121	
Molong	...	...	...	...	...	...	...	...	...	...	...	3	1	...	4	8	8	8
Mongarlowe	...	...	...	...	...	...	...	...	...	1	...	...	1	...	2	2	2	2
Moonbi	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	1	1	1
Moree	11	12	...	8	4	...	33	68	...	3	...	7	1	...	22	33	101	101	
Morpeth	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	1	1
Moruya	1	4	...	1	...	...	3	9	5	...	...	5	2	...	15	27	36	36
Mossgiel	20	11	5	19	6	4	15	80	4	...	...	2	...	10	16	96	96	
Moulamein	2	13	1	4	7	...	1	28	6	1	...	3	1	...	18	29	57	57	
Mount M'Donald	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	1
Murrurundi	1	...	...	...	...	...	3	4	6	...	...	3	1	...	4	14	18	18
Murwillumbah	10	6	...	4	3	...	5	28	1	...	...	3	...	8	12	40	40	
Narrabri	5	6	1	4	3	2	1	19	6	4	...	6	2	...	10	28	47	47	
Narrandera	6	4	4	6	3	...	3	26	7	4	...	9	2	...	21	43	69	69	
Narromine	...	1	...	1	1	...	2	5	...	1	...	...	...	...	1	6	6	6
Nelligen	...	...	...	...	...	...	...	...	2	...	1	1	...	2	6	6	6	6
Nimitybelle	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	1
Nundie	...	...	...	...	...	...	2	2	2	...	...	3	1	...	21	27	29	29
Nyngan	...	1	...	...	2	...	3	3	...	...	...	...	...	...	...	...	3	3
Obley	3	2	...	3	1	...	3	12	4	1	...	3	3	...	15	26	38	38	
Orange	1	1	...	2	...	...	...	4	2	...	...	...	...	1	3	7	7	7
Oxley	5	1	...	1	...	...	...	7	1	...	...	...	...	...	1	8	8	8
Pallamallawa	...	...	...	...	...	...	...	...	1	...	...	...	...	1	2	2	2	2
Palmer's Island	1	1	...	1	1	...	1	6	...	...	...	...	...	...	...	5	5	5
Parkes	...	4	...	1	1	...	8	14	5	2	...	7	2	...	25	41	65	65	
Parramatta	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	1	1
Penk Hill	11	...	2	3	4	1	14	35	...	...	...	3	...	2	5	40	40	40
Penrith	1	...	...	...	1	...	2	4	...	...	...	1	...	...	1	6	6	6
Pieton	1	...	...	...	...	...	...	1	10	...	1	3	4	...	29	47	48	48
Pilliga	10	6	2	9	2	2	8	39	11	1	...	7	1	...	9	29	68	68	
Pooncarie	10	9	1	3	7	...	12	42	1	...	...	1	...	2	4	46	46	46
Port Macquarie	5	8	4	4	6	1	11	39	15	4	1	12	5	1	44	82	121	121	
Quambone	2	24	2	2	9	1	15	55	2	...	...	1	...	7	10	65	65	65
Queanbeyan	...	...	...	1	...	...	...	1	1	...	...	1	...	9	11	12	12	12
Rose Bay	5	1	...	2	...	...	...	8	1	...	...	...	...	...	1	9	9	9
Rylstone	1	...	...	...	2	...	...	3	3	...	...	4	...	13	20	23	23	23
Sans Souci	...	1	1	1	1	1	1
Scone	3	1	1	2	1	...	1	9	...	2	2	11	11	11	11
Shoalhaven	1	4	...	1	3	...	...	9	14	3	2	13	3	2	68	105	114	114
Silverton	5	4	...	5	2	...	11	27	1	...	...	...	...	2	3	30	30	30
Singleton	12	5	1	4	4	3	11	40	5	...	...	3	1	1	11	21	61	61
Somerton	1	...	...	...	1	...	...	2	5	...	...	1	...	11	17	19	19	19
Stroud	1	...	...	...	...	...	...	1	...	...	...	...	...	2	2	3	3	3
Stuart Town	1	1	1	1	1	1
Swansea	...	...	...	...	1	...	...	1	1	1	1	1	...	1	5	6	6	6
Tamworth	1	1	2	2	2	2	2
Taree	5	1	5	2	2	...	6	21	6	2	...	5	3	...	10	27	48	48	
Tarcena	...	2	1	1	1	5	1	1	6	6	6	6
Tea Gardens	2	1	4	...	3	...	5	15	2	1	...	4	1	...	6	15	30	30	

APPENDIX A—continued.

Locality.	Full-bloods.						Half-castes.						Grand Total.				
	Men.			Women.			Children.	Total.	Men.			Women.			Children.	Total.	
	Between 20 & 40 years.	Between 40 & 60 years.	Over 60 years.	Between 20 & 40 years.	Between 40 & 60 years.	Over 60 years.			Between 20 & 40 years.	Between 40 & 60 years.	Over 60 years.	Between 20 & 40 years.		Between 40 & 60 years.			Over 60 years.
Tenterfield	...	1	...	...	1	...	...	2	1	...	...	1	...	...	4	6	8
Thackaringa	...	...	...	...	...	...	2	2	...	...	...	...	...	...	...	...	2
Tibooburra	30	7	1	27	...	...	21	86	...	...	...	3	...	...	15	18	104
Tingha	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	1	1
Torrowangee	5	4	3	3	5	...	3	23	...	2	...	...	...	...	...	2	25
Trunkey	...	...	...	...	1	...	...	1	1	...	...	1	...	...	3	5	6
Tucna	1	...	...	...	...	...	...	1	...	1	...	...	...	...	1	2	3
Tumbarumba	...	...	...	...	...	...	...	...	...	2	...	...	...	...	2	2	2
Tumblgum	...	1	1	...	...	...	2	4	...	...	...	...	...	1	1	5	5
Uralla	1	2	...	...	1	...	1	5	2	2	...	2	2	15	23	28	
Walbundrie	...	...	...	1	...	...	1	2	...	...	...	...	...	...	...	...	2
Walcha	10	7	1	10	2	...	29	59	6	4	...	4	3	23	40	99	
Walgett, Grawin, and Carinda	17	11	4	20	9	1	11	73	9	4	...	10	2	48	73	146	
Wanaaring and Yantabulla	53	14	4	36	6	1	11	125	2	...	...	...	...	4	6	131	
Wardell	6	1	1	3	2	...	8	21	4	1	...	7	...	20	32	53	
Warialda	3	1	...	1	...	...	2	7	2	1	...	2	1	13	19	26	
Warren	7	5	3	2	4	1	7	29	7	2	1	3	2	14	29	58	
Weo Waa	9	3	1	9	4	...	15	41	8	2	...	5	2	18	35	76	
Wellington	3	4	...	1	...	...	3	11	2	6	...	6	2	13	29	40	
Werris Creek	...	1	...	2	...	...	...	3	6	4	1	8	4	28	51	54	
Wentworth	7	1	1	8	3	...	19	39	1	...	...	...	...	...	1	40	40
Wilcannia	3	2	...	8	...	...	2	15	...	...	...	...	...	3	3	18	
Wilson's Downfall	4	7	...	3	2	...	3	19	...	...	...	2	...	5	7	26	
Windsor	1	1	2	2	...	2	...	8	9	7	...	10	6	23	55	63	
Wingham	4	1	4	2	...	2	...	5	18	4	1	6	...	19	30	48	
Wollar	...	1	...	1	3	...	4	9	2	...	...	...	...	4	6	15	
Wollongong	...	...	...	...	...	...	...	...	1	1	...	...	1	...	3	3	3
Woodburn	2	2	...	...	...	...	...	4	...	...	...	...	...	...	...	4	4
Woodenbong	7	4	5	5	4	4	12	41	3	...	3	1	...	4	11	52	
Woolgoolga	2	2	1	2	2	...	2	11	2	1	...	...	...	1	4	15	15
Yamba	1	...	...	1	...	...	2	4	...	...	...	...	...	...	...	4	4
Yass	3	1	...	...	1	...	...	5	12	7	...	22	6	77	124	129	
Yetman	2	4	1	2	1	...	3	13	2	...	2	...	...	1	5	18	18
	858	589	243	642	357	149	1,144	3,982	549	180	23	531	167	12	1,811	3,273	7,255

APPENDIX B.

CENSUS RETURNS, 1892 AND 1893.

Comparison.

	Full-bloods.					Half-castes.					Grand Total.
	Adults.			Children.	Total.	Adults.			Children.	Total.	
	Males.	Females.	Total.			Males.	Females.	Total.			
By return, 1892	1,766	1,257	3,023	1,189	4,212	723	664	1,387	1,750	3,137	7,349
Do 1893	1,690	1,148	2,838	1,144	3,982	752	710	1,462	1,811	3,273	7,255
Decrease	76	109	185	45	230	...	...	...	...	...	94
Increase	...	...	...	...	...	29	46	74	61	136	...

BIRTHS and DEATHS, 1893.

Full-bloods.		Half-castes.	
Births reported	107	Births reported	136
Deaths reported	150	Deaths reported	62
Decrease by Deaths over Births	43	Increase by Births over Deaths	74

APPENDIX C.

EXPENDITURE by the Government on behalf of the Aborigines, 1893.

Department.	Particulars.	Amount expended.						
		£	s.	d.	£	s.	d.	
Aborigines Protection Board.....	Rations, clothing, farming-implements, seed, erection of dwellings, boats and gear, fencing-wire, fishing nets and tackle, medical comforts, &c., &c. (Aborigines generally).....	7,211	17	6				
	Expenses in connection with the Home for Aborigines, Grafton—Salary of Manager, wages of Aborigines, seed, stock, rations, clothing	507	5	7				
	Office-rent	90	0	0				
	Salary of Secretary to Board	826	0	8				
	Conveyance of Aborigines on the railway lines of the Colony							
	Claims incurred by the Aborigines Protection Association in connection with the Cumeroounga, Warangsdra, and Brewarrina Mission Stations—Salaries, rations, clothing, medicine, building-material, farming-implements, stock, seed, freight, labour, &c., &c.	2,189	11	3				
					10,824	15	0	
Colonial Secretary	Burial expenses—Aborigines					70	0	0
Medical Adviser to the Government	Medical attendance and medicine					822	3	2
Government Stores	Blankets, clothing, stationery, &c.					2,378	19	2
Public Instruction	Repairs to buildings, erection of new buildings, school-books, fuel and cleaning, and salaries of teachers ...					1,157	16	9
	Total	£				15,253	14	1

APPENDIX D.

EXPENDITURE by the Board on Aborigines generally, 1893.

Locality.	Average monthly number receiving aid.		Period.	Nature of aid.	Amount expended during the year.
	Adults.	Children.			
Albury	1	3	1 month	Rations	£ s. d. 0 17 6
Angledool	13	9	12 months..	"	134 10 3
Ballina	1		1 week	"	0 3 11
Balranald	4	1	12 months...	Rations and clothing	43 10 11
Baradine	1		1 month ..	"	1 6 9
Barrington	6	18	12 months...	"	100 19 4
Bellingen and Fernmount.	14	3	12 "	"	34 3 5
Bonshaw	1	5	12 "	Rations	32 1 9
Boggabilla	7	8	12 "	Rations, clothing, fencing, and improvements to dwellings.	120 19 0
Booligal	5	1	12 "	Rations and clothing	37 19 4
Bowraville	22	1	12 "	"	59 12 5
Braidwood	1		12 "	Rations, clothing, and fuel	6 5 4
Breeza	3	8	12 "	Rations	30 17 5
Brungle	30	31	12 "	Rations, medical comforts, timber, tools, roofing-iron, seed, harness, forage, smithing a/c, sundries, allowance to Superintendent, and wages of Aborigines.	509 12 0
Brushgrove	1		12 "	Rations	5 14 9
Bungawalbyn	1		12 "	"	6 2 1
Bunalbo	3		12 "	"	25 12 6
Burrier	1		12 "	"	11 2 3
Bushfield	7	9	12 "	"	52 14 4
Burraborang	9	17	12 "	"	105 3 4
Cabbage-tree Island and Broadwater.	5	4	12 "	Rations and seed	43 7 3
Camira	3		12 "	Rations	20 3 9
Cobar	2		12 "	"	8 4 1
Colane	8	4	12 "	"	48 17 9
Collarendabri	1	1	12 "	"	9 12 6
Coolangatta and Greenwell Point.	7	30	12 "	Rations and clothing	107 6 10
Copmanhurst	2		12 "	Rations	10 8 9
Coraki	1		12 "	"	5 17 2
Cowra	4	17	12 "	Rations, and erection of school-room	99 11 10
Cox's River	7	1	12 "	Rations	50 14 7
Crudine Creek	2	5	12 "	"	24 0 8
Cudgen	1		12 "	"	6 0 5
Coonamble	2	3	9 "	"	30 13 7
Dandaloo	7		6 "	"	13 5 10
Delegate	16	3	12 "	Rations, erection of huts and fencing.....	144 8 1
Denison Town	2	4	12 "	and clothing	41 14 0
Drake	1		12 "	"	5 15 1
Dubbo	8	9	12 "	and clothing	73 4 8
Dungalar	11	17	2 "	"	15 9 10
Dyraaba	1		12 "	"	8 13 6
Eden	2	4	12 "	paint for boat	20 18 8

APPENDIX D—continued.

Locality.	Average monthly number receiving aid.		Period.	Nature of aid.	Amount expended during the year.
	Adults.	Children.			
Eugowra.....	4	6	12 months..	Rations	£ s. d. 34 8 1
Forbes.....	11	5	12 "	"	63 15 10
Forster	5	12	12 "	Rations, clothing, paint for boat	50 7 8
Gerringong	5	8	12 "	Rations, clothing, and roofing iron	38 11 5
Gilgunnia	3	.....	12 "	Rations	40 10 0
Glen Innes.....	1	6	12 "	"	18 15 2
Glenorehy	4	6	12 "	Rations, erection of hut	57 9 7
Glen Ugie	2	.....	12 "	Rations	11 15 4
Goodooga	7	.....	12 "	"	27 9 4
Goonal	5	.....	12 "	"	38 1 11
Grafton .....	.....	.....	12 "	Expenses in connection with "Home for Aborigines."	507 5 7
Gresford	1	.....	12 "	Rations	4 13 0
Gulargambone	11	8	12 "	Rations, fencing material, tools, &c.	134 13 11
Gunnedah	3	.....	12 "	Rations and clothing	20 5 5
Harwood	2	.....	12 "	Rations	10 14 3
Ingalba	6	7	12 "	"	41 18 10
Jervis Bay.....	3	6	12 "	Rations, repairs to boat, new boat-gear, and fishing tackle.	43 17 11
Kajuligah	2	1	12 "	Rations	16 12 11
Kangaroo Valley	1	1	12 "	"	13 12 1
Kyogle	2	.....	12 "	"	17 7 4
Kunopia	16	5	12 "	"	163 10 10
Keewong	3	1	12 "	Rations and clothing	18 19 5
La Prouse.....	9	8	12 "	Rations, medical comforts, repairs to boat	115 11 2
Lawrence	1	.....	12 "	Rations	7 6 10
Lionsville	3	.....	12 "	"	24 19 2
Lismore	3	.....	12 "	"	14 1 3
Macksville and Namucca Heads.	37	5	12 "	Rations, clothing, and medical comforts	154 4 7
Macleay River	88	56	12 "	Rations, clothing, medical comforts, and fencing material.	417 17 8
Marfield	7	5	12 "	Rations and clothing	35 11 9
Millera	1	.....	12 "	Rations	7 11 0
Milparinka.....	24	.....	.....	Clothing	18 0 0
Mogil Mogil	15	12	12 months..	Rations	129 1 1
Moongeee	8	.....	12 "	"	40 15 10
Moolah	4	1	12 "	Rations and clothing	31 18 1
Moolpa	1	.....	9 "	Rations	5 4 0
Moree	6	2	12 "	Rations and clothing	42 6 4
Mungindi	14	5	12 "	"	149 1 7
Murwillumbah	4	.....	12 "	Rations	8 16 8
Narrabri	5	7	12 "	Rations and clothing	48 7 8
Narrandera	5	2	12 "	Rations	18 13 11
Neligen	1	2	12 "	Rations and seed	11 5 11
Nymboida	1	.....	9 "	Rations	2 14 7
Nyngan	3	.....	12 "	"	13 11 8
Oban	15	3	12 "	Rations and erection of huts	175 5 0
Palmer's Island	2	.....	6 "	Rations	1 6 2
Parke	2	7	12 "	Rations and tools	25 4 8
Peak Hill	9	9	12 "	Rations	78 5 7
Penrith	1	1	9 "	Rations and clothing	3 18 6
Pilliga.....	13	2	12 "	Rations	49 0 5
Poolamacca	12	.....	3 "	Rations and clothing	3 1 2
Port Macquarie, Wauchope, and Rolland's Plains.	30	35	12 "	Rations, clothing, boat, building material, fishing-net, and seed.	253 18 1
Port Stephens	9	8	12 "	Rations, clothing, boat, fishing tackle, tools, and seed.	118 9 4
Quambone	38	12	12 "	Rations	200 14 2
Queanbeyan	1	.....	12 "	Rations and clothing	8 18 3
Raymond Terrace.....	1	.....	1 week	Rations	0 2 0
Rylstone	1	9	12 months..	"	28 1 6
Singleton	26	22	12 "	Rations, clothing, building material, medical comforts, tents, fishing tackle, cooking utensils, gunpowder, shot, &c.	184 19 9
Stuart Town	1	.....	12 "	Rations	4 12 0
Swansea	2	1	12 "	Rations, clothing, and erection of huts	42 18 5
Tabulam	5	.....	12 "	Rations	33 1 11
Taree	14	14	12 "	Rations and medical comforts	84 9 0
Tatalla	6	.....	12 "	Rations	61 8 6
Terembone.....	15	13	12 "	"	233 12 9
Terry-lite-lie... ..	11	8	12 "	"	98 12 3
Tooloom	2	9	12 "	"	12 16 9
Tooloon	2	5	12 "	"	40 5 6
Tumbulgum	1	1	9 "	"	4 9 6
Turlingah	8	13	12 "	Rations, seed, paint for boat	63 12 6
Ulladulla	13	22	12 "	Rations, repairs to boats, and new boat-gear	148 8 2
Unungar	2	.....	3 "	Rations	4 1 4
Uralla	3	5	4 "	"	4 15 1
Walcha	1	.....	12 "	"	5 7 1
Wallaga Lako	57	26	12 "	Rations, allowance to Superintendent	335 18 4
Warren	6	4	12 "	Rations	41 4 4
Wanaaring.....	3	.....	12 "	"	18 15 4
Wee Wee	2	4	12 "	"	22 19 8
Weilmoringle	2	.....	12 "	"	20 9 6

APPENDIX D—continued.

Locality.	Average monthly number receiving aid.		Period.	Nature of aid.	Amount expended during the year.
	Adults.	Children.			
Wellington	7	10	12 months...	Rations, bark for huts	£ s. d. 94 2 6
Wilson's Downfall ..	4	1	12 " ..	Rations	28 2 4
Windsor	29	29	12 " ..	"	82 1 3
Wingham	9	5	12 " ..	Rations and tools	38 16 0
Wollar	5	3	12 " ..	Rations	31 2 7
Wollomombi	2	.....	12 " ..	"	15 14 4
Woogoolga	2	.....	12 " ..	"	10 13 11
Wyangarie	2	.....	12 " ..	"	15 14 5
Wyrallah	6	.....	12 " ..	"	36 1 7
Yass and Pudman Creek.	13	37	12 " ..	Rations, clothing, fuel for school-room	127 12 8
Railway fares (Aborigines).	.....	.....	.....	.....	826 0 8
Salary of Secretary ..	.....	.....	.....	.....	90 0 0
Sundries .....	.....	.....	.....	.....	16 5 0
Total					£ 8,635 3 9

APPENDIX E.

AMOUNTS paid for Medical Attendance, 1893.

Locality.	Amount.	Locality.	Amount.
	£ s. d.		£ s. d.
Armidale	2 0 0	Brought forward	427 3 0
Ballina	0 15 0	Macleay	0 10 0
Barrington	12 4 0	Moree	5 0 0
Boggabilla	5 3 0	Mungindi	15 0 0
Bourke	0 10 0	Nambucca Heads ..	1 0 0
Brewarrina	1 1 0	Narrabri	16 1 0
Brungle	46 3 0	Narrandera	44 10 0
Bundarra	3 3 0	Nyngan	26 17 0
Casino	20 7 0	Parkes	1 10 0
Cowra	34 5 0	Port Macquarie	14 14 0
Cumerooogunga	59 9 0	Shoalhaven	18 1 0
Dubbo	4 0 0	Singleton	50 8 0
Fernmount	6 15 0	Tamworth	0 10 0
Forbes	16 5 0	Taree	40 0 0
Forster	9 10 0	Turlingah	5 0 0
Grafton	28 13 0	Ulladulla	6 0 0
Gunnedah	1 10 0	Wallaga Lake	21 3 8
Hillgrove	1 0 0	Wardell	13 17 6
Kempsey	50 0 0	Warialda	2 0 0
Kiama	58 9 0	Wellington	27 17 0
La Perouse	50 0 0	Wingham	25 0 0
Lismore	16 1 0	Yass	60 1 0
Carried forward	£ 427 3 0	Total	822 3 2

N.B.—These charges were defrayed from the Medical Vote.

APPENDIX E.

LIST of Articles supplied Aborigines from the Government Stores, 1893.

Locality.	No. receiving aid.		Nature of aid.	Locality.	No. receiving aid.		Nature of aid.
	Adults.	Children.			Adults.	Children.	
Ashford	5	14	Clothing.	Grafton, South	12	.....	Clothing.
Ballina	4	.....	"	Harwood	6	.....	"
Bendemeer	2	.....	"	Hillgrove	5	.....	"
Bluck's River	8	5	"	Kookabookra	11	3	"
Broadwater	2	.....	"	Lawrence	5	.....	"
Brungle .....	.....	.....	Medicine.	Lismore	10	.....	"
Brunswick	1	.....	Clothing.	Murwillumbah	7	6	"
Brushgrove	2	2	"	Nelligen .....	.....	.....	Tools.
Bundarra	8	8	"	Palmer's Island	2	.....	Clothing.
Byron Bay	1	.....	"	Sydney .....	.....	.....	Stationery.
Casino	8	7	"	Tenterfield	2	.....	Clothing.
Copmanhurst	15	4	"	Tambulgum	2	3	"
Coraki	3	.....	"	Ulladulla	1	.....	"
Cudgen	1	1	"	Walcha	5	9	"
Drake	19	.....	"	Wardell	4	11	"
Glen Innes	1	4	"	Wilson's Downfall ..	9	4	"
Grafton .....	.....	.....	Clothing, paint, medicine, cook- ing-utensils, tools, &c.	Woodenbong	16	2	"
				Woogoolga	2	.....	"
				Throughout the Colony .....	.....	.....	Blankets.

N.B.—The cost of these articles and their transit (£2,378 19s. 2d.) was defrayed from the Vote for Government Stores.

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APPENDIX G.

STATEMENT of Expenditure on account of Aborigines during the year 1893 by the Department of Public Instruction.

Name of School.	Salaries.*			Books and apparatus.			Fuel and cleaning.			Buildings, repairs, rent, furniture.			Total.		
	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
Barrington	82	2	6	1	6	2	3	11	6	14	11	9	101	11	11
Brewarrina	89	12	6	3	0	5							92	12	11
Brungle	93	10	0	2	7	6	1	4	0	1	1	2	98	2	8
Cabbage-tree Island	16	17	7	2	14	1				37	13	0	57	4	8
Cowra	64	19	3	4	5	0	2	2	0	6	2	6	77	8	9
Cumeroogunga	155	15	0	3	10	4	3	5	0	40	11	6	203	1	10
Forster	88	10	0	1	13	11				15	12	0	105	15	11
Grafton	30	6	8	3	17	1							34	3	9
Pelican Island	53	0	0										53	0	0
Rolland's Plains	46	15	0	0	17	9	5	0	0	0	2	6	52	15	3
Wallaga Lake	93	10	0				2	11	10				96	1	10
Warangesda	128	10	0	1	6	1	3	6	0				133	2	1
Wauchope	46	15	0	0	17	8	5	0	0	0	2	6	52	15	2
Total	990	3	6	25	16	0	26	0	4	115	16	11	1,157	16	0

APPENDIX H.

Census Returns, Aboriginal Mission Stations under control of the Aborigines Protection Association, 1893.

Mission Stations.	Population, 31st December, 1893.							Daily average population throughout the year.						
	Full-bloods.			Half-castes.			Grand Total.	Full-bloods.			Half-castes.			Grand Total.
	Adults.	Children.	Total.	Adults.	Children.	Total.		Adults.	Children.	Total.	Adults.	Children.	Total.	
Cumeroogunga	13	24	37	40	57	97	134	14	23	37	44	65	109	146
Warangesda ...	36	15	51	35	36	71	122	24	11	35	29	34	63	98
Brewarrina ...	39	10	49	4	17	21	70	32	10	42	3	17	20	62
Total.....	88	49	137	79	110	189	326	70	44	114	76	116	192	306

APPENDIX I.

BOARD for Protection of Aborigines, 31st December, 1893.

		Date of Appointment.
Chairman.....	Edmund Fosbery, Inspector-General of Police.....	5 June, 1883.
Members.....	Hon. Richard Hill, M.L.C.	"
	Hon. Philip Gidley King, M.L.C.	"
	Sydney Burdekin, M.L.A.	27 May, 1887.
	A. M. Hutchinson, J.P.	26 August, 1887.
	G. O'Malley Clarke	24 April, 1889.
	Hon. W. H. Suttor, M.L.C.	25 July, 1890.
Secretary	Thomas Colls, M.L.A.	11 November, 1891.
	A. Berckelman	30 April, 1888.

1894.

NEW SOUTH WALES.

INSPECTOR-GENERAL OF THE INSANE.

(REPORT FOR 1893.)

Presented to Parliament, pursuant to Act 42 Vic., No. 7, sec. 73.

The Inspector-General of the Insane to The Chief Secretary.

Sir, Lunacy Department, Inspector-General's Office, Gladesville, 17 March, 1894.

In accordance with the 73rd section of the Lunacy Act of 1878, I do myself the honor to submit for your information a report on the state and condition of the Hospitals and other Institutions for the Insane for the year ending 31st December, 1893. In appendices will be found reports on the Hospitals by the Medical Superintendents, together with the statistics of each Institution.

I have, &c.,

F. NORTON MANNING,
Inspector-General.

On 31st December, 1893, the number of insane persons on the official registers was 3,425, and their distribution was as follows:—

Institution.	Number on Register.			Number on Leave.		
	Male.	Female.	Total.	Male.	Female.	Total.
Hospital for the Insane, Gladesville.....	523	322	845	13	25	38
Do Parramatta (Free)	642	385	1,027	6	7	13
Do do (Criminal)	41	8	49	.....	.....	.....
Do Callan Park	442	395	837	6	6	12
Do Newcastle	153	142	295	.....	1	1
Do Rydalmere	272	.....	272	1	.....	1
Licensed House for the Insane, Cook's River.....	19	79	98	2	4	6
Licensed Houses do Picton .....	.....	2	2	.....	.....	.....
Total.....	2,092	1,333	3,425	28	43	71

The number on 31st December, 1892, was 3,312 (2,031 males and 1,281 females), so that the increase for the year was 113 (61 males and 52 females). This increase is in excess of the average for the last ten years by 13, as is shown in the following return:—

Year.	Increase.	Year.	Increase.
1883	96	1888	76
1884	121	1889	76
1885	119	1890	128
1886	74	1891	32
1887	104	1892	178

Total for 10 years, 1,004, or an average of 100 a year.

The increase for the year 1892 was 178, so that the two years, 1892 and 1893, have added 291 patients to the registers. As explained in my report for last year, this large increase has been due almost entirely to the general commercial depression, acting, in the first place, directly by causing insanity; in the second, by compelling persons to part with imbecile and demented relatives who they supported at home in more prosperous times; and, in the third, by driving into the Institutions for the Insane the somewhat weak-minded folks who can obtain work when work is plentiful, but who are handicapped when it is scarce, and who, in the absence of employment and the consequent distress, become the subjects of increased mental disability. That the somewhat mentally weak and unstable of the community have been thus affected is shown by the large number of readmissions—that is, the admission of those at some prior time under Hospital care and treatment. In 1892 these numbered 81, and in 1893 106, whilst the average number for the ten years, 1882 to 1891 inclusive, was 50 only.

239—A

The

[1165 copies—Approximate Cost of Printing (labour and material), £53 18s. 8d.]

The proportion of insane to population has risen from 1 in 361, or 2·77 per thousand, at the end of 1892 to 1 in 357, or 2·80 per thousand, at the end of 1893, which is the highest proportion in any year since 1882.

The proportion of insane to population in New South Wales for the last twenty years, and also the proportion in England for the same period, and the proportion in Scotland and Ireland for each year from 1881 to 1892 is shown in the following return:—

Year.	Population of New South Wales.	Total Number of Insane in New South Wales on 31 Dec.	Proportion of Insane to Population in New South Wales.	Proportion of Insane to Population in England.	Proportion of Insane to Population in Scotland.	Proportion of Insane to Population in Ireland.
			Per M.	Per M.	Per M.	Per M.
1873	560,275	1,526	1 in 367 or 2·72	1 in 381 or 2·62	.....	.....
1874	584,278	1,588	1 in 367 or 2·72	1 in 375 or 2·66	.....	.....
1875	606,652	1,697	1 in 357 or 2·80	1 in 373 or 2·68	.....	.....
1876	629,776	1,740	1 in 361 or 2·77	1 in 368 or 2·71	.....	.....
1877	662,212	1,829	1 in 362 or 2·76	1 in 363 or 2·75	.....	.....
1878	693,743	1,916	1 in 362 or 2·76	1 in 360 or 2·77	.....	.....
1879	734,282	2,011	1 in 365 or 2·74	1 in 363 or 2·75	.....	.....
1880	770,524	2,099	1 in 367 or 2·72	1 in 353 or 2·83	.....	.....
1881	781,265	2,218	1 in 352 or 2·84	1 in 352 or 2·84	1 in 370 or 2·70	1 in 386 or 2·59
1882	817,468	2,307	1 in 354 or 2·82	1 in 348 or 2·87	1 in 369 or 2·71	1 in 372 or 2·68
1883	869,310	2,403	1 in 361 or 2·77	1 in 345 or 2·89	1 in 365 or 2·73	1 in 358 or 2·78
1884	921,129	2,524	1 in 364 or 2·74	1 in 345 or 2·89	1 in 363 or 2·75	1 in 350 or 2·85
1885	980,573	2,643	1 in 374 or 2·67	1 in 348 or 2·87	1 in 358 or 2·79	1 in 344 or 2·90
1886	1,030,762	2,717	1 in 379 or 2·63	1 in 349 or 2·86	1 in 358 or 2·79	1 in 335 or 2·98
1887	1,042,919	2,821	1 in 369 or 2·71	1 in 346 or 2·88	1 in 352 or 2·84	1 in 319 or 2·13
1888	1,085,740	2,898	1 in 374 or 2·67	1 in 344 or 2·90	1 in 345 or 2·89	1 in 307 or 3·25
1889	1,122,200	2,974	1 in 377 or 2·65	1 in 341 or 2·92	1 in 339 or 2·94	1 in 295 or 3·38
1890	1,170,000	3,102	1 in 377 or 2·65	1 in 343 or 2·91	1 in 335 or 2·98	1 in 288 or 3·46
1891	1,165,300	3,134	1 in 371 or 2·69	1 in 335 or 2·98	1 in 315 or 3·47	1 in 281 or 3·55
1892	1,197,050	3,312	1 in 361 or 2·77	1 in 330 or 3·02	1 in 311 or 3·21	1 in 270 or 3·69
1893	1,223,370	3,425	1 in 357 or 2·80	.....	.....	.....

It will be seen—1st, that the proportion of insane to population in New South Wales is still decidedly below that in England and Scotland, and very greatly below that in Ireland; and, 2nd, that notwithstanding the very large increase in the number of registered insane in this Colony, the proportion to population has increased very little, and is only a trifle in excess of what it was in 1873—twenty years ago—and exactly the same as in 1875. Of the number on the registers at the close of the year (3,354), 2,064 males and 1,290 females were in the institutions and 71 (28 males and 43 females) were absent on leave, under the provisions of the Lunacy Act. The returns from the institutions show an increase of 28 at Parramatta (Free), 25 at Callan Park, 32 at Newcastle, and 47 at Rydalmere; whilst there has been a decrease of 7 at Gladsville, 8 at Parramatta (Criminal), and 4 at Cook's River.

The increase at Rydalmere and at Newcastle was due almost entirely to the transfer of chronic cases from Gladsville and Callan Park to relieve the over-crowded condition of the wards at these hospitals, which receive all the new cases from the Metropolitan, Coast, and Southern districts of the Colony.

The following tables show the number of admissions, discharges, and deaths, the proportion of recoveries, the rate of mortality, the causes of insanity in those admitted, those who recovered, and those who died; the causes of death, the length of residence in those who recovered and those who died, and also the ages, condition as to marriage, religious profession, nationality, and previous occupation of those admitted and of all under care, as well as the form of mental disorder in those admitted, those who recovered, and those who died during the year:—

TABLE I.

SHOWING the Admissions, Readmissions, Discharges, and Deaths in the Hospitals and Licensed Houses for the Insane during the year 1893.

In Hospital on 31st December, 1892	Male.	Female.	Total.
.....	2,031	1,281	3,312
Admitted for the first time during the year	Male.	Female.	Total.
.....	355	227	582
Readmitted during the year	55	51	106
Transferred during the year	104	61	165
.....	514	339	853
Total under care during the year 1893.....	2,545	1,620	4,165
Discharged or removed—			
Recovered	156	130	286
Relieved	21	21	42
Transferred	104	61	165
Escaped (and not recaptured) .....	.....	1	1
Died	172	74	246
Total discharged or died during the year 1893	453	287	740
Remaining	2,092	1,333	3,425
Average number resident during the year	2,054	1,258	3,312
* Persons under care during the year†	2,541	1,611	4,152
* Persons admitted during the year.....	514	339	853
* Persons recovered during the year	157	128	285

* Persons, *i.e.*, separate persons in contradistinction to "cases," which may include the same individual more than once.
† Total cases minus readmission of patients discharged during the current year.

TABLE 2.

SHOWING the Admissions, Readmissions, Discharges, and Deaths, with the Mean Annual Mortality, and the Proportion of Recoveries, &c., per cent., in the Hospitals for the Insane, for the years 1876 to 1893 inclusive, and including the Licensed Houses, from the year 1882.

Year.	Admitted.			Transferred from other Hospitals, &c.			Discharged.			Transferred to other Hospitals, &c.			Escaped and not recaptured within 28 days			Died.			Remaining in Hospital 31st December in each year.			Average number resident.			Percentage of recoveries on admissions and readmissions.			Percentage of recoveries on admissions and readmissions for Quinquennial periods.			Percentage of patients relieved on admissions and readmissions.			Percentage of patients relieved on admissions and readmissions for Quinquennial periods.			Percentage of deaths on average numbers resident.			Percentage of deaths on average numbers resident for Quinquennial periods.																											
	Admitted for the first time.		Readmitted.	M.		F.	M.		F.	M.		F.	M.		F.	M.		F.	M.		F.	M.		F.	M.		F.	M.		F.	M.		F.	M.		F.	M.		F.																												
	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.																															
1876	182	111	293	33	27	60	101	12	113	88	70	158	17	19	36	100	45	145	78	29	107	1072	533	1605	1052	536	1588	40	90	50	72	44	75	7	90	13	76	10	19	7	41	5	41	6	73																			
1877	262	100	362	62	24	86	133	14	147	137	64	201	17	18	35	130	21	151	97	20	117	1147	548	1695	1130	529	1659	42	28	51	61	44	86	4	97	14	51	7	81	8	58	3	78	7	05																			
1878	212	126	338	40	38	78	112	36	148	108	46	154	17	20	37	113	45	158	99	28	127	1174	609	1783	1175	579	1754	42	85	28	05	37	01	42	28	39	36	41	42	6	75	12	19	8	89	6	80	13	77	9	28	8	42	4	33	7	24	7	95	4	88	6	92	
1879	241	128	369	40	26	66	98	12	110	112	58	170	21	28	49	97	17	114	91	26	117	1232	646	1878	1188	620	1808	39	86	37	66	39	08	7	47	18	18	11	26	7	66	4	19	6	47																			
1880	267	145	412	28	30	58	42	24	66	133	63	190	21	19	40	40	35	75	3	96	40	136	1276	688	1964	1249	665	1914	45	08	36	00	41	70	7	11	10	85	8	51	7	08	6	01	7	10																			
1881	284	134	418	35	27	62	31	9	40	133	73	206	16	14	30	34	19	53	5	84	26	110	1354	726	2080	1314	700	2014	41	69	45	34	42	91	5	01	8	69	6	25	6	39	3	71	5	46																			
1882	286	142	428	20	25	45	38	14	52	118	84	202	22	16	38	38	14	52	3	93	48	141	1430	877	2307	1392	854	2246	38	56	50	29	42	70	7	18	9	58	8	03	6	68	5	62	6	27																			
1883	272	161	433	21	22	43	29	145	174	119	75	194	19	11	30	29	145	174	111	45	156	1474	929	2403	1443	904	2347	40	61	40	98	40	75	40	07	42	27	40	89	6	48	6	01	6	30	5	65	8	36	6	66	7	09	4	98	6	64	7	34	5	16	6	52	
1884	281	159	440	20	33	53	130	42	172	103	79	182	16	12	28	107	42	149	4	4	123	58	181	1552	972	2524	1503	932	2435	34	21	41	14	36	91	5	31	6	25	5	67	8	18	6	22	7	43																		
1885	318	205	523	20	24	44	29	83	112	151	83	234	15	25	40	29	83	112	7	7	118	49	167	1599	1044	2643	1550	985	2535	44	67	36	24	41	26	4	43	10	91	7	05	7	61	4	97	6	58																		
1886	345	196	541	18	8	26	27	88	115	174	99	273	16	10	26	27	88	115	7	7	121	66	187	1644	1073	2717	1604	1035	2639	47	93	48	52	48	14	4	40	4	90	4	58	7	54	6	37	7	08																		
1887	302	179	481	30	21	51	19	10	29	115	99	214	11	14	25	19	10	29	4	4	111	74	185	1735	1086	2821	1670	1052	2722	34	63	49	50	40	22	3	31	7	00	4	69	6	64	7	03	6	79																		
1888	333	196	529	32	27	59	37	14	51	167	108	275	20	11	31	37	14	51	5	5	132	68	200	1776	1122	2898	1738	1077	2815	45	75	48	43	46	76	41	33	49	30	44	34	5	47	4	93	5	27	4	29	4	36	4	31	7	59	6	31	7	10	7	30	6	36	6	94
1889	294	186	480	41	29	70	37	12	49	135	109	244	8	4	12	37	12	40	8	1	...	9	138	71	209	1822	1152	2974	1785	1104	2889	40	29	50	69	44	36	2	38	1	86	2	18	7	73	6	43	7	23																		
1890	341	215	556	35	20	55	41	33	74	141	116	257	21	8	29	41	33	74	2	4	128	65	193	1906	1196	3102	1827	1133	2960	37	50	49	36	42	06	5	58	3	40	4	74	7	00	5	73	6	52																		
1891	327	212	539	31	26	57	227	34	261	168	129	297	11	17	28	227	34	261	6	6	167	66	233	1912	1222	3134	1982	1167	3149	46	92	54	20	49	83	3	07	7	14	4	69	8	42	5	65	7	39																		
1892	377	208	585	39	42	81	125	41	166	154	107	261	17	14	31	125	41	166	4	1	...	5	122	69	191	2031	1281	3312	1946	1205	3151	37	01	42	80	39	18	4	08	5	60	4	65	6	26	5	72	6	06																		
1893	355	227	582	55	51	106	104	61	165	156	130	286	21	21	42	104	61	165	1	172	74	246	2092	1333	3425	2054	1258	3312	38	04	46	93	41	63	5	12	7	58	6	11	8	37	5	88	7	42																		

	Males.	Females.	Total
Average percentage of recoveries on admissions and readmissions for ten years, 1884-1893	40.73	46.79	43.07
Average percentage of patients relieved on admissions and readmissions for ten years, 1884-1893	4.34	6.00	4.98
Average percentage of deaths on average numbers resident for ten years, 1884-1893	7.54	6.02	6.96

TABLE 3.

SHOWING the Causes of Insanity*, apparent or assigned, in the admissions and readmissions in the Hospitals and Licensed Houses for the Insane, during the year 1893.

Causes of Insanity:	Number of Instances in which each cause was assigned.								
	As predisposing cause.†			As exciting cause.†			Total.‡		
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
MORAL—									
Domestic trouble (including loss of relatives and friends)	...	4	4	6	23	29	6	27	33
Adverse circumstances (including business anxiety and pecuniary difficulties)	...	...	...	42	11	53	42	11	53
Mental anxiety and "worry" (not included under above two heads), and overwork	...	...	...	8	8	16	8	8	16
Religious excitement	...	...	...	6	7	13	6	7	13
Love affairs (including seduction)	...	...	...	2	4	6	2	4	6
Fright and nervous shock	...	...	...	6	6	12	6	6	12
Isolation	...	...	...	4	2	6	4	2	6
Nostalgia	...	...	...	...	...	...	...	...	...
PHYSICAL—									
Intemperance in drink	2	1	3	61	20	81	63	21	84
Do (sexual)	...	1	1	2	2	4	2	3	5
Veneral disease	3	...	3	6	...	6	9	...	9
Self-abuse (sexual)	5	...	5	6	...	6	11	...	11
Sunstroke	...	...	...	5	2	7	5	2	7
Accident or injury	5	...	5	10	1	11	15	1	16
Pregnancy	...	...	...	...	4	4	...	4	4
Parturition and the puerperal state	...	1	1	...	27	27	...	28	28
Lactation	...	1	1	...	1	1	...	2	2
Uterine and ovarian disorders	...	1	1	...	9	9	...	10	10
Puberty	1	...	1	1	1	2	2	1	3
Change of life	...	4	4	...	10	10	...	14	14
Fevers	...	...	...	...	3	3	...	3	3
Plumbism	1	...	1	...	...	...	1	...	1
Privation and overwork	4	2	6	5	1	6	9	3	12
Phthisis	1	1	2	3	...	3	4	1	5
Epilepsy	6	3	9	19	6	25	25	9	34
Disease of skull and brain	2	1	3	14	...	14	16	1	17
Locomotor Ataxy	...	...	...	...	...	...	...	...	...
Old age	10	13	23	7	6	13	17	19	36
Other bodily diseases and disorders and chronic ill health	5	7	12	14	20	34	19	27	46
Excess of opium	1	...	1	...	1	1	1	1	2
PREVIOUS ATTACKS	41	30	71	15	5	20	56	35	91
HEREDITARY INFLUENCE ASCERTAINED	25	28	53	3	5	8	28	33	61
CONGENITAL DEFECT ASCERTAINED	26	18	44	6	6	12	32	24	56
OTHER ASCERTAINED CAUSES	...	...	...	...	...	...	...	...	...
UNKNOWN	...	...	...	...	...	...	104	43	147

* These "causes" are taken from the statements in the papers received with the patients on admission, and are verified or corrected as far as possible by the Medical Officers.

† No cause is enumerated more than once in the case of any patient.

‡ The aggregate of the totals exceeds the whole number of patients admitted, the excess being due to the combinations.

TABLE 4.

SHOWING the Causes of Death in the Hospitals and Licensed Houses for the Insane during the year 1893.

	Male.	Female.	Total.
CEREBRAL DISEASES—			
Apoplexy and paralysis	9	3	12
Epilepsy and convulsions	12	14	26
General paralysis	43	1	44
Maniacal and melancholic exhaustion and decay	8	4	12
Inflammation and other diseases of the brain, softening, tumour, &c.	36	3	39
THORACIC DISEASES—			
Inflammation of lungs, pleura, and bronchi	16	9	25
Pulmonary consumption	10	7	17
Carcinoma of lung	...	1	1
Disease of the heart and blood-vessels	4	7	11
ABDOMINAL DISEASES—			
Inflammation and ulceration of stomach, intestines, and peritoneum	1	...	1
Dysentery and diarrhoea	7	2	9
Albuminuria	...	2	2
Disease of ovaries	...	1	1
Disease of liver	1	1	2
Diabetes	...	...	...
ERYSIPELAS	...	...	...
PUERPERAL SEPTICÆMIA	...	1	1
MALIGNANT DISEASE (TUMOURS)	2	1	3
CARBUNCLE	1	...	1
MARASMUS	2	1	3
GENERAL DEBILITY AND OLD AGE	18	15	33
ACCIDENT	...	1	1
SUICIDE	2	...	2
Total	172	74	246

TABLE 5.

SHOWING the Length of Residence in those discharged recovered, and in those who have died in the Hospitals and Licensed Houses for the Insane during the year 1893.

	Recovered.			Died.		
	Male.	Female.	Total.	Male.	Female.	Total.
Under 1 month	2	.....	2	10	7	17
From 1 to 3 months.....	30	32	62	15	4	19
„ 3 to 6 months.....	49	34	83	21	5	26
„ 6 to 9 months.....	27	17	44	16	4	20
„ 9 to 12 months.....	15	12	27	14	2	16
„ 1 to 2 years.....	19	20	39	38	3	41
„ 2 to 3 years.....	8	7	15	11	8	19
„ 3 to 5 years.....	2	4	6	8	5	13
„ 5 to 7 years.....	4	1	5	7	8	15
„ 7 to 10 years.....	.....	1	1	8	11	19
„ 10 to 12 years.....	.....	.....	.....	.....	3	3
„ 12 to 15 years.....	.....	1	1	4	3	7
Over 15 years .....	.....	1	1	20	11	31
Total	156	130	286	172	74	246

TABLE 6.

SHOWING the Ages of Admissions and Readmissions, Discharges, and Deaths, and also the Ages of all Patients under care, during the year 1892, in the Hospitals and Licensed Houses for the Insane.

	Admitted and readmitted.			Recovered.			Removed, relieved, &c.			Died.			Patients under care during 1893.		
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
1 to 5 years	3	2	5	.....	.....	.....	.....	1	1	2	1	3	6	4	9
5 to 10 years	7	1	8	.....	.....	.....	.....	1	1	1	1	2	17	11	28
10 to 15 years	6	2	8	.....	.....	.....	3	1	4	2	2	4	32	21	53
15 to 20 years	20	14	34	8	9	17	12	1	13	2	.....	2	77	59	136
20 to 30 years	75	93	168	32	40	72	17	23	40	11	12	23	351	304	655
30 to 40 years	116	74	190	51	39	90	28	29	57	34	10	44	622	369	991
40 to 50 years	72	50	122	28	16	44	23	17	40	44	11	55	594	389	983
50 to 60 years	76	25	101	26	18	44	20	5	25	37	11	48	512	291	803
60 to 70 years	20	9	29	8	6	14	20	4	24	20	12	32	240	114	354
70 to 80 years	11	6	17	1	2	3	2	1	3	16	11	27	80	50	130
80 to 90 years	3	2	5	2	.....	2	.....	.....	.....	3	2	5	14	7	21
90 and upwards	1	.....	1	.....	.....	.....	.....	.....	.....	.....	1	1	1	1	2
Total.....	410	273	688	156	130	286	125	83	208	172	74	246	2,545	1,620	4,165

TABLE 7.

SHOWING Conditions as to Marriage in those admitted and readmitted, and those under care in the Hospitals and Licensed Houses for the Insane during the year 1893.

	Admissions and readmissions.			Under care during 1893.		
	Male.	Female.	Total.	Male.	Female.	Total.
Single	225	104	329	1,667	674	2,341
Married	136	145	281	556	697	1,253
Widowed.....	23	28	51	113	172	285
Unascertained.....	26	1	27	209	77	286
Total.....	410	278	688	2,545	1,620	4,165

TABLE 8.

SHOWING the Religious Profession of those admitted and readmitted, and those under care in the Hospitals and Licensed Houses for the Insane during the year 1893.

Religious Profession.	Admissions and readmissions.			Under care during 1893.		
	Male.	Female.	Total	Male.	Female.	Total
Protestant—						
Church of England	163	121	284	1,069	638	1,707
Presbyterian	39	17	56	181	107	288
Wesleyan	20	12	32	87	54	141
Lutheran	13	.....	13	72	10	82
Other Protestant Denominations	24	11	35	117	65	182
Roman Catholic	131	113	244	847	709	1,556
Pagan	8	.....	8	78	.....	78
Hebrew	5	3	8	19	8	27
Mahomedan	2	.....	2	6	.....	6
Unascertained	5	1	6	69	29	98
Total	410	278	688	2,545	1,620	4,165

TABLE 9.

SHOWING the Native Countries of those admitted and readmitted, and those under care in the Hospitals and Licensed Houses for the Insane during the year 1893.

	Admitted and readmitted during 1893.			Under care during 1893.		
	Male.	Female.	Total.	Male.	Female.	Total.
British Colonies { New South Wales	126	127	253	740	648	1,388
{ Other Colonies	27	25	52	143	80	223
Great Britain... { England	115	58	173	651	295	946
{ Scotland	26	9	35	143	74	217
{ Ireland	58	54	112	509	470	979
France	3	1	4	17	6	23
Germany	8	.....	8	72	17	89
China	9	.....	9	84	.....	84
Other Countries	38	4	42	186	30	216
Total	410	278	688	2,545	1,620	4,165

TABLE 10.

SHOWING the Form of Mental Disorder in the Admissions, Readmissions, Recoveries, and Deaths of the year 1893, and of Inmates in Hospitals and Licensed Houses for the Insane, on 31st December, 1893.

Form of Mental Disorder.	Admissions and readmissions.			Recoveries.			Deaths.			Remaining in Hospital 31st Dec., 1893.		
	Male.	Female.	Total	Male.	Female.	Total	Male.	Female.	Total	Male.	Female.	Total
CONGENITAL OR INFANTILE MENTAL DEFICIENCY—												
Do (a) with Epilepsy	8	6	14	1	.....	1	5	8	13	83	59	142
Do (b) without Epilepsy	24	16	40	.....	.....	.....	6	5	11	211	143	354
Epileptic Insanity	13	9	22	2	2	4	10	6	16	79	50	129
General Paralysis of the Insane	50	1	51	.....	.....	.....	40	2	42	51	4	55
MANIA—												
Acute	35	33	68	28	28	56	6	5	11	69	59	128
Chronic	2	4	6	2	.....	2	11	8	19	218	192	410
Recurrent	16	15	31	4	4	8	2	.....	2	51	53	104
Delusional	106	50	156	51	23	74	28	7	35	525	223	748
A Potu	16	4	20	8	2	10	1	.....	1	38	5	43
Puerperal .....	.....	16	16	.....	7	7	.....	1	1	.....	35	35
Senile	4	4	8	1	.....	1	1	.....	1	14	9	23
MELANCHOLIA—												
Acute	8	19	27	7	10	17	3	4	7	11	21	32
Chronic .....	.....	1	1	1	.....	1	1	1	2	73	58	131
Recurrent	7	7	14	2	2	4	.....	.....	.....	11	14	25
Delusional	78	65	143	41	43	84	11	6	17	243	179	422
Puerperal .....	.....	6	6	.....	4	4	.....	.....	.....	.....	9	9
Senile	1	.....	1	.....	1	1	.....	1	1	11	3	14
A Potu .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
DEMENTIA—												
Primary	20	13	33	3	3	6	15	3	18	118	45	163
Secondary	6	4	10	3	1	4	15	6	21	171	136	307
Senile	15	5	20	2	.....	2	11	11	22	105	31	136
Organic (i.e., from Tumours, coarse Brain Disease, &c.)	1	.....	1	.....	.....	.....	6	.....	6	10	5	15
Total	410	278	688	156	130	286	172	74	246	2092	1333	3425

TABLE 11.

SHOWING the Occupations of those admitted and readmitted, and those under care, in the Hospitals and Licensed Houses for the Insane, during the year 1893.

Occupations.	Admitted and readmitted during 1893.			Under care during 1893.		
	Male.	Female.	Total.	Male.	Female.	Total.
Professional	17	.....	17	54	.....	54
Commercial	55	.....	55	204	.....	204
Agricultural and pastoral	27	.....	27	142	1	143
Mechanics, tradesmen, &c., actively employed, and in out-door avocations	50	.....	50	278	.....	278
Mechanics, tradesmen, &c., employed at sedentary or indoor occupation	16	.....	16	149	.....	149
Domestic service.....	18	1	19	88	37	125
Educational and higher domestic duties	191	.....	191	1,282	1	1,283
Ordinary domestic work .....	.....	6	6	2	20	22
Commercial — actively employed .....	.....	76	76	.....	429	429
Commercial — employed in sedentary occupations .....	.....	2	2	.....	63	63
Wives of professional men .....	.....	14	14	.....	51	51
Wives of commercial men .....	.....	6	6	.....	22	22
Wives of tradesmen, mechanics, &c.....	.....	27	27	.....	87	87
Wives of agricultural and pastoral men .....	.....	28	28	.....	78	78
Wives of .....	.....	21	21	.....	82	82
No occupation .....	.....	55	55	.....	220	220
Unknown	31	29	60	205	271	476
Total.....	5	18	18	141	258	399
	410	278	688	2,545	1,620	4,165

Admissions.

The number of patients admitted during the year was 668—410 males and 278 females—and of these 582 were admitted for the first time and 106 were re-admitted, having been at some previous time under care in one of the Hospitals for the Insane in this Colony. The number of admissions was the largest in any one year, and was 22 in excess of the number for 1892. The ratio of admissions to the general population, or what is denominated the "occurring insanity," was a very high one, being 1 in 1,778.

The following return shows the ratio of admissions to population, or the proportion of "occurring insanity" for the last 20 years:—

Year.	Admissions.	Population.	Proportion to Population	Year.	Admissions.	Population.	Proportion to Population.
1874	330	584,278	1 in 1,770	1884.....	493	921,129	1 in 1,868
1875	356	606,652	1 in 1,704	1885.....	567	980,573	1 in 1,729
1876	360	629,776	1 in 1,749	1886.....	567	1,030,762	1 in 1,817
1877	457	662,212	1 in 1,449	1887.....	532	1,042,919	1 in 1,960
1878	424	693,743	1 in 1,636	1888.....	588	1,085,740	1 in 1,846
1879	440	734,282	1 in 1,668	1889.....	550	1,122,200	1 in 2,040
1880	476	770,524	1 in 1,618	1890.....	611	1,170,000	1 in 1,914
1881	494	781,265	1 in 1,581	1891.....	596	1,165,300	1 in 1,955
1882	473	817,468	1 in 1,728	1892.....	666	1,197,050	1 in 1,797
1883	476	869,310	1 in 1,826	1893.....	688	1,223,370	1 in 1,778

Under the provisions of the 9th section of the Lunacy Act Amendment Act, which was assented to on June 8, 1893, the Order, Request, Medical Certificates, or other documents by which an insane person has been received into an Hospital for the Insane may be amended under process much more simple than was provided for by the original Lunacy Act, so that it is not now necessary to reject the documents and delay the admission of the patient.

Under

Under the provisions of this section 67 medical certificates, 13 orders and statements, and 4 requests and statements have been amended during the half year from June 30th to December 31st, and in addition to this 5 certificates and 1 request have been rejected and new papers procured. In all these cases the patients were insane when presented at the hospital and fit subjects for admission, but care had not been taken to fill in the formal papers in accordance with the provisions of the Lunacy Statutes, although the marginal notes on all of them are full and explicit. The certifying medical practitioners and the officials concerned in completing these papers do not appear to have realised the importance of an accurate compliance with the provisions of the Lunacy Act, or that the documents may at any time be subjected to examination in a Court of Law.

For many years there has been an influx to the Institution for the Insane in this Colony of insane persons who were insane on arrival in the Colony by sea, or became insane shortly after, and this influx has of late years been greater by reason of enactments in neighbouring colonies, which prevented the landing of such cases therein. In the Act to amend the law relating to the insane, which was assented to on the 8th of June last, there is a section rendering the owner, charterer, agent, or master liable for the maintenance of any insane person landed in the Colony. This section, which is as follows, will no doubt prevent in a great degree the importation of insane persons:—

4. (i) If the Health Officer, or the Immigration Officer, or the Inspector-General of Police, or the Inspector-General of the Insane certifies to the Master within sixty days after the arrival of any ship at any port in New South Wales, that a passenger or seaman arriving by that ship is insane, imbecile, or idiotic, and has become, or is likely to become, a charge upon the public as an inmate of a reception house or hospital for the insane, it shall be lawful for the Master thereupon to require the owner, charterer, agent, or master of that ship to execute, with two sufficient sureties, jointly and severally, a bond to Her Majesty in such a sum as the Master may determine not exceeding five hundred pounds, conditioned to pay to the Master the maintenance of that passenger or seaman in such reception house or hospital at such rate and for such term as may be determined by the Master; or at the option of the owner, charterer, agent, or master, subject to the approval of the Master, to return such passenger or seaman to the place whence he was shipped.
- (ii.) The sureties shall justify before or to the satisfaction of the Master, and shall by their oaths or affirmations satisfy him that they are respectively resident in New South Wales, and worth treble the amount of the penalty of the bond over and above all liabilities.
- (iii.) Provided that no bond shall be required when the passenger or seaman is, at the date of the arrival of the ship, domiciled in New South Wales; but the onus of proving such domicile as aforesaid shall be upon the said owner, charterer, agent, or master.

Under its provisions 10 cases have been reported since June 8th, of these 7 soon recovered and were discharged, 2 were returned by the steamship companies to the ports from which they were shipped, and 1 remains in hospital at the charge of the owners of the ship in which he arrived.

Of the patients admitted during the year 55 were under 20 and 52 upwards of 60 years of age. The former were for the most part congenitally weak intellect and the latter chiefly demented. These figures go to bear out the remarks previously made with regard to adverse circumstances compelling relatives to part with imbecile and demented relatives heretofore supported at home.

Perhaps the most striking feature in the returns is the large increase in the number of admissions of patients suffering from General Paralysis. During the 10 years, 1882 to 1891 inclusive, the average number of general paralytics admitted was 19, and the highest number in any one year 29. In 1892 the number rose to 42, and in 1893 to 56, or about one-twelfth or 8 per cent. of the total number of admissions. General paralysis is a comparatively new disease, is admittedly due to living at "high pressure," and is a product of urban as opposed to country life. Of the 56 cases admitted in 1893, 44 were admitted to Callan Park which receives patients from the Metropolitan districts; 9 to Gladesville, the majority of these being from Newcastle and the surrounding district, and only 2 or 3 from the Coastal and Southern districts; whilst at Parramatta, which receives the whole of the patients from the Western district of the Colony, 3 cases only of this disease were received.

As this disease is, so far as is at present known, incurable, the subjects living on an average only between two and three years from the appearance of the early symptoms, the increase of the malady is not only a serious matter from a social point of view, but will tend to affect hospital statistics by diminishing the recovery and increasing the death rate.

There does not appear to be any decided increase in the number of epileptic patients admitted, and at the end of the year they numbered 274, or exactly 8 per cent. of the total number under care at the close of the year, a percentage which differs very little from that of ten years ago.

Transfers.

The number of patients transferred from one institution to another under the provisions of section 80 of the Lunacy Act was 165—104 males and 61 females. Of these 117 were chronic cases sent from Gladesville and Callan Park to Newcastle and Rydalmere to relieve overcrowding. 13 were transferred from the Hospital for the Criminal Insane at Parramatta when no longer subject to Criminal process, and the residences of the remainder were changed either at the request of friends or of the Medical Superintendent in charge, or of the patients themselves.

In some of these cases the change was followed by recovery, in others by improved mental or physical health, and in the greater number by increased contentment and tranquility.

Discharges.

The number of patients discharged during the year was 328, and of these 286 had recovered and 42 were relieved, being so far well as to admit of discharge to the care of relatives or friends. The recoveries give a percentage of 41.63, and the cases relieved a percentage of 6.11 on the admissions, so that a percentage of 46.74 so far recovered under Hospital care and treatment as to admit of discharge.

Escapes.

Escapes.

The number of escapes was 36 and in all except one instance the patients were returned to Hospital within a short period.

The following return shows the Number of Escapes during the last ten years:—

Year.	Number of Escapes.	Returned to Hospital.	Not Returned.	Year.	Number of Escapes.	Returned to Hospital.	Not Returned.
1884	34	30	4	1889	42	33	9
1885	43	36	7	1890	45	41	4
1886	37	30	7	1891	45	39	6
1887	34	30	4	1892	29	24	5
1888	47	42	5	1893	36	35	1

Considerable liberty within the Hospital grounds is allowed to convalescents and to quiet and harmless patients—whilst a number of those usefully employed are necessarily from time to time beyond the immediate supervision of attendants. It is from among these classes that escapes for the most part take place, and nothing has occurred for some years which seems to render necessary an alteration of the system pursued in dealing with them.

Deaths.

The number of deaths was 246, and the percentage to the daily average number resident was 7.42, the death-rate for males being 8.37 and for females 5.88. The death-rate was higher than usual, indeed it was higher even than during the year 1891 when influenza appeared in all the hospitals except Newcastle and added to the average percentage, which has been 6.96 for the last ten years.

The death-rate at the different Hospitals was as follows:—Gladesville, 6.44; Parramatta Free, 6.25; Parramatta Criminal, 6.00; Callan Park, 9.14; Newcastle, 8.51; Rydalmere, 8.66; and Cook's River, 8.00. The death-rate, as in former years, has been highest in the Hospital at Callan Park where the number of acute and recent cases has been largest, and at Newcastle and Rydalmere where many of the patients are in feeble bodily condition.

In Table 4 the causes of death are shown. Of the total number 113 were due directly to disease of the brain, and of these no less than 44 were caused by general paralysis, and 26 by epilepsy. The deaths from inflammatory and other diseases of the lungs, and from pulmonary consumption numbered 43, and those from disease of the heart and blood vessels 11. There were 83 deaths from general debility and old age, and some patients who had been resident in the Hospitals for many years were among the number who died from these causes. There was no death from typhoid fever or other epidemic ailment.

Total number under care, &c.

The total number of patients under care was 4,465—2,545 males and 1,620 females, and the daily average number resident 3,312.

Leave of Absence on Probation.

The following return shows particulars as to leave of absence during the year 1893:—

RETURN showing particulars as to Leave of Absence during the year 1893.

Institution.	Remaining on leave 31st December, 1892.			Number granted leave during the year 1893.			Discharged—Recovered, &c.			Returned to Hospital.			Died whilst on leave.			Remaining on leave 31st December, 1893.		
	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.
Gladesville	14	34	48	14	31	45	8	17	25	7	23	30	...	...	...	13	25	38
Parramatta	7	4	11	9	19	28	5	13	18	5	3	8	...	...	...	6	7	13
Callan Park	3	10	13	14	13	27	5	8	13	6	9	15	...	...	...	6	6	12
Newcastle	2	...	2	1	2	3	1	...	1	1	1	2	1	...	1	1	1	1
Rydalmere .....	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	1	...	1
Cook's River	2	6	8	4	11	15	2	8	10	2	5	7	...	...	...	2	4	6
Total	28	54	82	43	76	119	21	46	67	21	41	62	1	...	1	28	43	71

It will be seen that 82 patients were absent on 31st December, 1892, and that leave was granted to 119 during the year, making a total of 201 coming under the provisions of section 82 of the Lunacy Act. Of these, 67 were discharged recovered, 62 returned to Hospital, 1 died whilst on leave, and 71 were still on leave at the close of the year. Several of those returned to Hospital had been absent for long periods, and some of those now on leave have been away from the Hospitals for several years, the leave being renewed from time to time, generally at intervals of three months, when the patient visits the Hospital, and sees the Medical Superintendent, or forwards a recommendation from a Medical Practitioner for an extension of the term. The system works satisfactorily in all respects.

Accidents, &c.

Two cases of suicide and one case of accidental poisoning occurred during the year. A man at the Hospital for the Insane, Parramatta, who had for a long time been convalescent, had never shown any tendency to suicide, and was allowed a considerable degree of liberty as a preliminary to discharge, cut his throat with a knife which he had surreptitiously obtained, and a Chinaman at Gladesville, who was employed in the kitchen, found his way into an unfinished laundry building, still in the hands of the contractors,

contractors, where he hanged himself with a rope left by workmen. He had, it appeared, displayed no symptoms of depression for several weeks and worked industriously. Inquests were held in both these cases, and no blame was imputed to the officers in charge. After an inquiry into the circumstances in each case, I saw no reason to dissent from the opinion expressed at the inquest. The case of accidental poisoning occurred at the Licensed House at Cook's River, and death resulted to a female patient from an overdose of chloral and bromide of potassium administered by mistake by one of the nurses. The Jury in this case added a rider to their verdict censuring the Medical Superintendent for allowing the medicine to leave the dispensary in a concentrated form, and subsequent inquiry showed such serious irregularity on the part of the matron and a nurse in this case as led to their dismissal. The other accidents were 2 cases of intracapsular fracture of the neck of thigh-bone caused by falls in aged patients; 3 fractures of the leg due to falls, one of which was during an epileptic fit; 1 fracture of the arm in an epileptic; 2 fractures of the radius, and 3 of the ulna, all the result of accident; 1 of the both bones of the forearm caused by a fall when climbing through a window; 1 of the olecranon by a fall from a step-ladder; 2 of the clavicle, the sufferers having been pushed down by fellow patients; and 1 of the finger during a quarrel. One patient under religious delusions injured himself by tearing his scrotum, and another removed the end of one finger. Two patients wounded themselves with suicidal intent, but did not cause serious injury, and one received a severe cut on the foot which he thrust through the glass panel of a door. One of the patients at Gladesville, who was employed in cleaning in the ward, and had not previously displayed aggressive or dangerous propensities, struck an attendant with a broom handle causing a somewhat severe scalp wound. On the whole the number of accidents was smaller than usual, and, considering that 4,152 patients were under care, all insane and irresponsible, many violent, a considerable proportion suicidal or prone to self injury, and no less than 313 epileptics, the care and supervision exercised would appear to have, on the whole, been close and satisfactory.

Changes in the Staff.

The only change among the officers was caused by the resignation of Miss Frances G. Spencer, who was appointed to the position of Matron in charge of the Walker Convalescent Hospital at its opening, and who was succeeded by Miss Mary T. Cooke, who has had experience in English hospitals. Miss Spencer had only been a short time in this Department, but the special aptitude and tact she displayed in the performance of her duties made her resignation a matter of considerable regret.

The changes among the attendants and nurses have been few, and the following return, giving the length of service of attendants and nurses, shows that the general staff possess considerable experience in the performance of their special duties.

RETURN showing length of service of Attendants and Nurses at Hospitals for the Insane on the 31st December, 1893.

Hospital.	Number of Attendants.									Number of Nurses.								
	Above 20 years.	15 years.	10 years.	7 years.	5 years.	3 years.	2 years.	1 year.	Under 1 year.	Above 20 years.	15 years.	10 years.	7 years.	5 years.	3 years.	2 years.	1 year.	Under 1 year.
Gladesville ...	5	4	8	4	1	5	9	5	6	...	2	3	4	2	2	6	13	2
Parramatta ...	10	6	8	5	7	6	5	1	1	1	...	5	5	4	5	4	2	4
Callan Park ...	...	4	5	11	4	7	6	7	4	...	...	...	4	6	5	6	5	8
Newcastle ...	1	2	3	...	2	...	1	...	...	...	1	1	1	...	3	2	...	4
Rydalmere ...	...	2	...	1	1	2	4	4	4	...	...	...	...	...	...	...	...	...
Total	16	18	24	21	15	20	25	17	15	1	3	9	14	12	15	18	20	18

Training of Attendants and Nurses.

The special training of attendants and nurses, which has for several years been carried out by the medical officers at Gladesville, and for the last three or four years at Newcastle, has now been commenced at Callan Park, Parramatta, and Rydalmere. This training consists of lectures and demonstrations, extending over two years. The first year being devoted to general instruction as to nursing, bandaging, &c., and the second to the special care and treatment of the insane. The examinations held at the close of each year are conducted either by medical practitioners unconnected with the Department, or by the Medical Superintendent of one of the other Hospitals for the Insane. I have myself conducted the examination at Gladesville after the second year's training during several years, and have been much gratified by the knowledge of their special work displayed by the members of the class, and the evident interest taken therein.

The arrangement with the Department of the Medical Adviser, under which the nurses each spend three months at the Coast Hospital so as to gain practical experience in the nursing of typhoid fever and other diseases, has been continued, and is likely to be more largely useful during the coming than it has during the last year, as a larger number of nurses have now undergone the necessary preliminary training.

Stimulants in Hospitals for the Insane.

It is now some years since the issue of beer as a part of the dietary was stopped, and its use as an extra for patients actively employed was subsequently discontinued. Stimulants are now only used in cases of bodily sickness, in melancholic or maniacal exhaustion, and in other cases in which the medical officers consider their use likely to tend to improve mental or physical health. The total amount now used is comparatively small, and tends rather to diminish than to increase. The total cost during the year 1891 was £282 16s. 7d., or at the rate of 1s. 10½d. per patient; during 1892 it was £258 14s. 4d., or 1s. 8½d. per patient per annum, and during 1893 £237 5s. 5d., or 1s. 5½d. per patient per annum. For the last two years, 1892 and 1893, no stimulants whatever were used at the Hospital at Rydalmere, and the patients who are of the chronic class do not appear to have in any way suffered from their absence.

The treatment of patients from Broken Hill.

This matter has formed the subject of comment in several previous reports, and especially in that for the year 1890. Taking into consideration the great difficulty and expense of sending these patients to hospital under proper escort, the distance to be travelled by the speediest route being nearly 1,000 miles, and the journey being through South Australia and Victoria, in which the orders for conveyance to hospital are inoperative, it was decided to erect a small building in connection with the general hospital at Broken Hill for the temporary reception and treatment of insane patients until they could be sent on to Gladsville. Owing to unforeseen circumstances this building was not immediately commenced or speedily completed, but in June last it was reported as nearly ready for occupation, and I proceeded to Broken Hill to advise as to its minor fittings and the regulations under which it should be worked.

When passing through Adelaide the Chief Secretary of that colony placed me in official communication with the Colonial Surgeon, who is the head of the Lunacy Department of South Australia, with the result that an agreement was drafted under which persons found to be insane at Broken Hill, will, on being handed over to the authorities in South Australia, be dealt with under the lunacy laws of that colony, and cared for and treated in its Hospitals for the Insane at the charge of the Government of New South Wales. This agreement, after being amended in minor particulars, has now been agreed to by the Governments of both colonies, and can be put in force as soon as an Act has been passed in this Colony legalising the action to be taken under it. The passing of this measure has been delayed, but it is hoped that it will be accomplished during the present session of Parliament. The building at Broken Hill has, pending the completion of the arrangements above mentioned, not been used for the purpose for which it was intended, but it is a useful addition to the hospital, and can be made available for the isolation and treatment of cases of infectious disease or other special ailments.

Cost of Maintenance.

The receipts of the Department from all sources amounted to £14,430 16s. 3d. being somewhat less than during the year 1892.

The collections by the Master-in-Lunacy towards the maintenance of patients, together with payments made at the Reception House, amounted to £13,298 16s. 5d. This was only £53 13s. 8d. more than was collected during the year 1892, although the daily average number of patients under care was 160 more than during that year. The falling off in the average collections per patient from £4 6s. 10d. in 1892 to £4 2s. 10½d. in 1893 was no doubt due to the generally depressed financial condition of the Colony. The sum of £292 15s. 8d. was paid by the Imperial Treasury, £740 11s. 9d. was received for fat, old stores, &c., and £98 12s. 5d. for rent of land.

The details are shown in the following return:—

TABLE showing Total Receipts on account of Institutions for the Insane during the year 1893.

Name of Institution.	Collected for maintenance of Patients.	Paid from Imperial Treasury for maintenance of Patients.	Sale of Fat and old Stores.	Rent of Land.	Total.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Hospital for the Insane, Gladsville.....	4,163 8 11	.....	266 19 9	.....	4,430 8 8
Do Parramatta	2,144 16 8	263 10 1	253 15 3	.....	2,662 2 0
Do Callan Park	5,617 0 4	.....	177 8 6	.....	5,794 8 10
Do Newcastle	892 10 10	29 5 7	23 14 1	.....	945 10 6
Do Rydalmere.....	410 8 5	.....	18 14 2	.....	429 2 7
Licensed House for the Insane, Cook's River.....	63 6 3	.....	.....	.....	63 6 3
Reception House for the Insane, Darlinghurst	7 5 0	.....	.....	.....	7 5 0
Inspector-General's Office .....	.....	.....	.....	98 12 5	98 12 5
Total	13,298 16 5	292 15 8	740 11 9	98 12 5	14,430 16 3

The total expenditure was £101,077 15s. and was made up as follows:—Maintenance of patients in Hospitals for the Insane, £93,781 14s.; maintenance of Government patients at the Licensed House, Cook's River, £2,928 13s. 6d.; maintenance of patients in the Reception House, £1,545 11s. 7d.; and general expenses, including cost of Inspector-General's Office, payments to official visitors, maintenance of steam launch "Mabel," &c., £2,821 15s. 11d. The expenditure in 1893 was less under each heading than during the preceding year, and an average number of 160 more patients was maintained in the hospitals for a cost of £1,441 19s. 6d. less than was expended in 1892.

The average weekly cost per head at all the hospitals was 11s. 2½d., without deducting collections, and 9s. 6½d., after those were deducted, and was lower than during any preceding year. The cost per head in 1892 was 11s. 11½d., without deducting collections, and 10s. 2d. after these were deducted. The cost for maintenance would have been still lower but for the fact that the votes for the Government Architect's Department having been greatly reduced, it has been necessary to charge the expenditure for various necessary additions and alterations to the votes of this Department. The maintenance rate at Newcastle has in this way been nearly £1 a head higher than it would otherwise have been, and the cost of workshops, &c., at Parramatta, and rooms for attendants and nurses at Gladsville, have been included in the maintenance rate. It will be seen that the maintenance rate differs considerably at the several Hospitals, being higher at Callan Park and Gladsville than at Parramatta, Newcastle, and Rydalmere. This depends partly on the character of the patients and the proportion of acute cases. Acute cases are much more costly than chronic ones as regards attendance, food, clothing, and other items, and the proportion of these is large at Callan Park and Gladsville, whilst the cases are all chronic ones at Newcastle and Rydalmere, and the proportion of this class is very large at Parramatta. A further reason for the higher cost at Callan Park is that there are at that Hospital special quarters for paying patients, and the special provision for this class swells the general cost, though it is subsequently recouped by the collections for maintenance. The cost is also to some extent determined by the relative number of male to female patients. The latter can be maintained for something between 1s. and 2s. each per week less than the former, by reason of the smaller salaries paid to female attendants or nurses

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in comparison with male attendants, the smaller cost for clothing, and the smaller dietary scale necessary. The female patients at Parramatta are only one-third of the total number, and there are none at Rydalmere. The maintenance rate at both these Hospitals would be much less if half or more than half the patients were women as is the case in most English asylums.

The cost for each patient at the Reception House was £2 11s. 3d., as against £2 18s. 0½d. during the preceding year.

The following returns show (1st) the average weekly cost at the Hospitals for the last ten years—1884 to 1893; (2nd) the weekly cost at all Hospitals from 1870 to 1893 inclusive; and (3rd) the particulars of expenditure in the Hospitals during the year 1893:—

RETURN showing Weekly Cost for Maintenance in Hospitals for the Insane for ten years, 1884 to 1893 inclusive.

Year.	Without deducting Collections.		Deducting Collections.	
	£	s. d.	£	s. d.
1884.....	0	12 3	0	10 11
1885.....	0	12 8	0	11 3½
1886.....	0	12 7½	0	11 1½
1887.....	0	11 11½	0	10 6
1888.....	0	11 8½	0	10 2
1889.....	0	12 9½	0	11 3½
1890.....	0	11 11½	0	10 4½
1891.....	0	12 1½	0	10 5½
1892.....	0	11 11½	0	10 2
1893.....	0	11 2½	0	9 6½
Average for 10 years.....	0	12 1½	0	10 6½

The following return shows the weekly cost in all Hospitals from 1870 to 1893, inclusive:—

TABLE showing Weekly Cost of Maintenance at Hospitals for the Insane, during the years 1870 to 1893 inclusive.

Year.	Gladesville.		Parramatta.		Newcastle.		Callan Park.		Rydalmere.	
	Collections deducted.	Collections not deducted.	Collections deducted.	Collections not deducted.	Collections deducted.	Collections not deducted.	Collections deducted.	Collections not deducted.	Collections deducted.	Collections not deducted.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1870.....	0	12 6	0	12 11	.....	.....	.....	.....	.....	.....
1871.....	0	11 11½	0	12 4	0	9 0	0	9 1½	.....	.....
1872.....	0	12 8	0	13 2	0	9 3	0	9 4	0	16 11
1873.....	0	12 7	0	13 0	0	11 4½	0	12 5	0	16 0
1874.....	0	12 2½	0	12 10½	0	12 3	0	12 4½	0	13 6
1875.....	0	12 2	0	12 6½	0	11 10½	0	11 10½	0	14 3
1876.....	0	12 5	0	13 1	0	10 0½	0	11 2½	0	14 1
1877.....	0	12 5	0	13 1	0	11 8½	0	11 10½	0	14 1½
1878.....	0	11 4½	0	12 3½	0	12 9½	0	12 10½	0	13 3½
1879.....	0	11 2	0	13 1½	0	11 2½	0	11 7	0	13 8½
1880.....	0	9 5	0	11 2½	0	10 5½	0	11 1½	0	11 5
1881.....	0	10 1½	0	12 2½	0	10 2½	0	10 9½	0	11 8
1882.....	0	10 11	0	13 0½	0	12 6	0	13 0½	0	10 10
1883.....	0	10 4½	0	12 6½	0	10 10½	0	11 4½	0	11 3½
1884.....	0	10 4½	0	12 6½	0	9 11½	0	10 7	0	10 11
1885.....	0	10 11	0	13 2	0	9 10½	0	10 7½	0	10 11½
1886.....	0	11 8	0	13 9½	0	10 2	0	10 11½	0	11 7½
1887.....	0	11 3½	0	13 1½	0	9 7½	0	10 8	0	12 0
1888.....	0	9 7½	0	11 10½	0	10 0½	0	11 1	0	11 2
1889.....	0	12 1	0	14 8	0	10 9½	0	11 4	0	11 10½
1890.....	0	10 9½	0	13 0	0	10 1½	0	10 11	0	10 2
1891.....	0	10 9½	0	12 11½	0	9 10½	0	10 9	0	9 10½
1892.....	0	10 8	0	12 11	0	9 4	0	10 3	0	9 8½
1893.....	0	10 2½	0	12 4	0	8 8½	0	9 7½	0	9 2½

* First year, and including cost of stores and outfit.

† Opening of new Hospital.

The following tables show the particulars of expenditure in the Hospitals for the Insane during 1893:—

TABLE showing Annual Cost of Patients in Hospitals for the Insane during the year 1893.

Institution.	Total number under care.	Average number resident	Total cost.		Amount of collections.		Total annual cost per Patient, without deducting collections.	Annual cost per Patient, deducting collections.
			£	s. d.	£	s. d.		
Hospital for the Insane, Gladesville ..	1,075	807	25,887	16 9	4,430	8 8	32 1 6½	26 11 9½
Do Parramatta.....	1,225	1,058	26,670	5 4	2,662	2 0	25 4 1½	22 13 10
Do Callan Park.....	1,110	809	26,605	2 8	5,794	8 10	32 17 8½	25 14 5½
Do Newcastle	380	282	7,709	13 6	945	10 6	27 6 9½	23 19 8½
Do Rydalmere.....	297	234	6,908	15 9	429	2 7	27 3 11½	25 10 2½
	4,037	3,210	93,781	14 0	14,261	12 7	29 4 3½	24 15 5½

RETURN showing the Average Annual Cost of Maintenance per Patient at the Hospitals for the Insane for the year 1893.

Name of Hospital.	Daily average number of patients resident	Salaries, money allowances, and fees.	Provisions extras, medical comforts, and forage	Stimulants—Wines, spirits, beer, &c.	Medicines and surgical instruments.	Stores, including clothing, bedding, and materials for manufacture.	Fuel, light, and water.	Incidental and miscellaneous expenses, including library, amusements, &c.	Total expenditure.	Collections for maintenance, &c.	Annual cost for maintenance per patient.	Annual cost per patient, deducting collections for maintenance, &c.
		£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Gladesville	807	12 15 9½	11 1 11½	0 1 9½	0 4 0½	4 18 4½	1 8 9½	1 10 2½	25,987 10 0	4,430 3 3½	32 1 6½	26 11 0½
Parramatta	1,058	10 11 6½	8 17 2	0 1 7½	0 2 10½	3 2 5½	1 7 7½	1 0 10½	26,670 5 4	2,062 2 0	25 4 1½	22 13 10
Callan Park	899	13 4 11½	11 6 5½	0 1 10½	0 3 10½	4 4 1	2 4 0½	1 11 10½	28,605 2 8	5,794 8 10	32 17 8½	25 14 5½
Newcastle	282	9 16 2½	8 15 11½	0 0 14	0 5 10½	3 15 1	1 5 11½	3 7 7½	7,709 13 6	945 10 6	27 6 9½	23 19 8½
Rydalmere	254	12 7 8½	7 14 7½	....	0 4 7½	3 2 7½	1 10 10½	2 3 6½	6,908 16 9	429 2 7	27 3 11½	25 10 2½

RETURN showing the Average Weekly Cost of Maintenance per Patient at the Hospitals for the Insane for the year 1893.

Name of Hospital.	Daily average number of patients resident	Weekly cost calculated on average number resident.							Total weekly cost for maintenance per patient.	Average weekly collections for maintenance per patient.	Weekly cost per patient, deducting collections for maintenance, &c.
		Salaries, money allowances, and fees.	Provisions extras, medical comforts, and forage.	Stimulants—Wines, spirits, beer, &c.	Medicines and surgical instruments.	Stores, including clothing, bedding, and materials for manufacture.	Fuel, light, and water.	Incidental and miscellaneous expenses, including library, amusements, &c.			
		£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Gladesville	807	0 4 11	0 4 3½	0 0 0½	0 0 1	0 1 10½	0 0 6½	0 0 6½	0 12 4	0 2 1½	0 10 2½
Parramatta	1,058	0 4 0½	0 3 4½	0 0 0½	0 0 0½	0 1 2½	0 0 6½	0 0 4½	0 9 7½	0 0 1½	0 8 8½
Callan Park	899	0 5 1	0 4 4½	0 0 0½	0 0 0½	0 1 7½	0 0 10½	0 0 7½	0 12 7½	0 2 8½	0 9 10½
Newcastle	282	0 3 9½	0 3 4½	....	0 0 1½	0 1 6	0 0 5½	0 1 3½	0 10 6	0 1 3½	0 9 2½
Rydalmere	254	0 4 9½	0 2 11½	....	0 0 1	0 1 2½	0 0 7	0 0 10	0 10 5½	0 0 7½	0 9 9½

Average weekly cost without deducting collections, 11s. 2½d., on deducting collections, 9s. 6½d.

In my report for the year 1891, particulars were given as to the cost of maintenance in Institutions for the Insane in Victoria, Ontario, and the United States and Great Britain. The following additional particulars, showing cost of maintenance (collections being deducted), are taken from annual reports for year 1892 :—

England*	{	County Asylums (54)	£ s. d.
		Borough do (13)	0 8 11½
		Registered Hospitals for Insane (12)	0 10 0
Pennsylvania, U.S. (State Asylums)*	{	Harrisburg	1 11 6
		Danville	0 15 2
		Morristown	0 13 4½
		Warren	0 14 11
		Dexmont	0 14 0½
Cape of Good Hope**	{	Valkenburg	0 16 4
		Old Somerset House†	0 16 5
		Robbin Island†	0 8 9
		Graham's Town	0 15 5½
		Port Alford	0 13 8½

* Report of Commissioners in Lunacy, England, 1892 † Includes chronic sick cases. ‡ Includes chronic sick cases and lepers.
 ** Report of Committee on Lunacy, Pennsylvania, 1892. *** Report of Inspector of Asylums, 1892.

Reception House for the Insane, Darlinghurst.

The number of patients admitted to this Institution in 1893 was 594, and with 9 remaining from the previous year makes a total of 603—428 males and 175 females—under care. Of these, 475 were transferred to Hospitals for the Insane, 117 were discharged recovered, 1 was discharged to care of friends, 2 died, and 8 remained at the close of the year.

The patients admitted are of two classes—those under medical certificate and those under remand under the provisions of section 1 of the Amending Lunacy Act. Of the first class, the number admitted was 354, and with 3 remaining from the previous year made a total of 357 under care. Of these, 348 were sent on to Hospitals for the Insane, 7 were discharged recovered, 1 was handed over to the charge of friends, and 1 remained at the close of the year. Of the second class, 240 were admitted and 6 remained from the previous year, making a total of 246. Of these, 127 were returned to Police Court, then certified as insane, and returned to the Institution, to go subsequently to Hospital; 110 were discharged as recovered, 2 died, and 7 remained in the Institution at the close of the year. It will be seen that 127 patients are counted twice, having first been admitted under remand and subsequently under medical certificate. During the year 10 patients were admitted twice, and 71 were admitted who had been previously inmates during the 26 preceding years.

I visited the Institution at least once in each month without any previous notice, and always found it in good order and the patients properly attended to. There has been no serious accident, the death-rate has been unusually small, and the Institution, as in many former years, has done most useful work.

Alterations to the laundry and bath-rooms, to which attention has been called in previous reports, are much needed; but funds have not yet been available for carrying out the necessary work.

The following returns give the statistics for the Reception House for the year 1893:—
 TABLE showing the number of Patients under Certificate received at the Reception House for the Insane during the year 1893, and their disposal.

Year.	Remain- ing 31st Dec., 1892.			Received.			Sent to Gladesville.			Sent to Parramatta.			Sent to Callan Park.			Sent to Newcastle.			Sent to Licensed House, Cook's River.			Discharged of sound mind.			Discharged to friends.			Died.			Remaining 31st Dec., 1893.		
	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.
1893	1	2	3	236	118	354	109	61	170	...	...	...	118	56	174	2	2	4	...	...	...	6	1	7	1	...	1	...	...	...	1	...	1

TABLE showing the number of Patients received at the Reception House for the Insane during the year 1893, under section 1 of the Lunacy Act Amendment Act.

Year.	Remaining, 31st Dec., 1892.			Received.			Sent to Police Court and discharged.			Sent to Police Court, certified as insane, and returned to Reception House.			Died.			Remaining, 31st Dec., 1893.		
	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.
1893	3	3	6	188	52	240	88	22	110	94	33	127	2	...	2	7	...	7

TABLE showing the number of Patients received at the Reception House for the Insane for the years 1868 to 1893 inclusive, and their disposal, &c.

Year.	Remain- ing.			Received.			Sent to Gladesville.			Sent to Parramatta.			Sent to Callan Park.			Sent to Newcastle.			Sent to Cook's River.			Sent to Police Court, and discharged as sane.			Sent to Police Court, certified as insane, and returned to Reception House.			Dis- charged of sound mind.			Dis- charged to care of friends.			Died.			Remain- ing on 31st Decem- ber.		
	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.			
1868	29	19	48	27	19	46	1	...	1	1	...	1			
1869	1	...	1	78	48	126	77	45	122	2	...	2	3	...	3			
1870	3	3	74	51	125	67	48	115	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	3	7	2	2	...	2	1	3
1871	2	1	3	126	64	190	121	56	177	1	2	3	...	...	...	...	...	...	...	...	...	...	...	...	3	3	6	1	...	1	2	4	6
1872	2	4	6	131	63	194	118	61	179	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	11	1	12	2	1	3	2	3	5
1873	2	3	5	140	74	214	130	65	195	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	3	8	6	5	11	1	4	5
1874	1	4	5	151	89	240	127	83	210	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7	5	12	11	5	16	1	6	6
1875	6	...	6	189	106	295	154	87	241	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	21	6	27	13	7	20	3	4	6
1876	4	6	10	204	108	312	151	99	250	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	28	7	35	21	4	25	2	3	5
1877	6	3	9	241	99	340	226	94	320	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	15	4	19	2	3	5
1878	4	3	7	194	104	298	183	101	284	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	4	2	6	6	3	9	1	2	3
1879	3	...	3	201	108	309	105	94	259	...	...	...	14	14	...	2	2	...	...	...	...	...	...	...	20	12	32	...	...	...	1	1	2
1880	3	1	4	202	126	328	122	111	233	2	2	49	49	1	1	1	1	2	2	...	2	...	...	...	26	8	34	1	1	2	3	2	5			
1881	2	4	6	206	116	322	152	110	262	1	1	39	39	1	1	...	...	...	1	1	...	...	...	...	10	7	17	1	1	2	1	3	4
1882	2	1	3	371	160	537	145	101	246	...	...	...	37	37	...	1	1	...	...	...	...	121	33	154	43	18	61	12	24	...	5	...	5
1883	10	2	12	383	196	579	141	103	244	...	...	...	25	25	2	2	...	...	...	...	...	153	48	201	50	30	80	12	7	19	1	3	4
1884	6	5	11	474	211	685	115	116	231	...	...	...	68	68	...	1	1	1	1	2	205	45	250	52	41	93	17	2	19	...	8	3	11			
1885	14	7	21	474	218	692	66	47	113	1	1	2	141	73	214	1	1	1166	45	211	91	49	140	10	8	18	5	5	10			
1886	6	2	8	491	186	677	85	16	101	3	3	138	78	216	...	...	...	1	1	165	55	221	85	30	115	10	5	15	...	4	2	6				
1887	6	1	7	374	181	555	100	45	145	1	1	72	52	124	1	1	126	34	160	50	35	85	18	10	28	5	2	7				
1888	8	3	11	434	207	641	82	37	119	1	1	2	129	76	205	2	3	5	126	46	172	70	31	101	20	11	31	4	3	7			
1889	8	2	10	384	174	558	106	40	146	91	62	153	2	2	120	29	149	47	35	82	20	5	25	1	1	2			
1890	7	2	9	447	200	647	130	40	170	97	65	162	181	41	172	71	44	115	19	6	25	2	1	3			
1891	4	5	9	418	178	596	110	51	161	1	1	2	101	48	149	1	2	3	120	36	156	64	37	101	13	4	17	3	2	5			
1892	9	2	11	463	164	627	140	40	180	2	2	2	106	48	154	2	2	122	37	159	81	30	111	11	6	17	4	4	8			
1893	4	5	9	424	170	594	109	61	170	118	56	174	2	2	4	88	22	110	94	33	127	6	1	7	1	2	...	2	8	...			

TABLE showing the number of Patients under Certificate received at the Reception House for the Insane during the year 1893, the places whence received, and their disposal.

From whence received.	Remain- ing on 31st Dec., 1892.			Received.			Sent to Gladesville Hospital.			Sent to Parramatta Hospital.			Sent to Callan Park Hospital.			Sent to New- castle Hospital.			Sent to Licensed House, Cook's River.			Dischutged to care of friends.			Dis- charged of sound mind.			Died.			Remain- ing on 31st Dec., 1893.		
	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.			
Sydney	1		1	27	61	188	3	7	10			118	51	169	2	2	4																
Goulburn				3	3	6	3	3	6																								
Armidale				2	2	4	2	2	4																								
Albury				5	1	6	5	1	6																								
Bega				1		1	1		1																								
Braidwood				1		1	1		1																								
Burrowa				1		1	1		1																								
Berrima					1	1		1	1																								
Bulli					1	1						1	1																				
Broken Hill				5	1	6	5	1	6																								
Bombala				2		2	2		2																								
Cooma					1	1		1	1																								
Corowa				1		1	1		1																								
Campbelltown				1		1	1		1																								
Cootamundra				5		5	5		5																								
Camden				1		1	1		1																								
Cowra					1	1						1	1																				
Deniliquin					1	1		1	1																								
Dubbo				1		1	1		1																								
Grafton				9	3	12	9	3	12																								
Gunnedah				1	1		1	1																									
Glen Innes					1	1		1	1																								
Gosford				1	1	2	1	1	2															1	1								
Inverell				6		6	6		6																								
Kiama				3	3		2	2				1	1																				
Kempsey				4	4		4	4																									
Lambton				1		1	1		1																								
Liverpool				4		4	3		3														1	1									
Lismore				6	1	7	6	1	7																								
Maitland				8	8	16	8	8	16																								
Morce				1		1	1		1																								
Muswellbrook				3	3		3	3																									
Murrumbidgee				3	2	5	3	2	5																								
Milton				2	1	3	2	1	3																								
Moss Vale				1		1	1		1																								
Narrabri				3	2	5	3	2	5																								
Nowra				1		1	1		1																								
Newcastle	1	1		3	8	11	3	9	12																								
Picton				2	1	3	2	1	3																								
Port Macquarie				2		2	2		2																								
Quirindi				1		1	1		1																								
Queanbeyan				1	1	2		1	1																								
Shoalhaven				1		1	1		1																								
Scone					1	1		1	1																								
Taree				1	1	2	1	1	2																								
Temora	1	1		2		2	2	1	3																								
Tamut					1	1		1	1																								
Tenterfield				1		1	1		1																								
Tingha					1	1						1	1																				
Uralla				2		2	2		2																								
Wallsend				2	1	3	2	1	3																								
Wagga Wagga				6	1	7	6	1	7																								
Wentworth				2	1	3	2	1	3																								
Warialda				2		2	2		2																								
Wollongong				1	1	2	1		1			1	1																				
Walgett				1		1	1		1																								
Young				1		1	1		1																								
Total	1	2	3	236	118	354	109	61	170			118	56	174	2	2	4						1		1	6	1	7		1	1		

HOSPITALS FOR THE INSANE.

The statistics of these institutions will be found in the reports of the medical superintendents. [Appendices A, B, C, D, E.] The official visitors, Sir Arthur Roberts, Dr. J. Cox, and Mr. Nugent Robertson, have visited the Hospitals at Gladesville and Callan Park, and Dr. Walter Brown, Dr. Huxtable, and Mr. Nugent Robertson, the Hospital at Parramatta once in each month, and have forwarded reports for the information of the Chief Secretary after each visit, in accordance with the provisions of the Lunacy Act.

Gladesville.

This Hospital as in former years has received all patients from the southern and coast districts of the Colony. The number of patients on December 31st, 1892, was 852, and 223 were received during the year, making 1,075 under care. Of these, 106 were discharged recovered, 12 were discharged relieved, 60 were transferred to other institutions, 52 died, and 845 remained at the close of the year. The daily average number resident was 807.

The percentage of recoveries on admissions was 48.84, and the average recovery rate for the last five years 47.48. The death-rate was 6.44, and the return showing the causes does not reveal anything unusual. There was no death from typhoid fever or other epidemic ailment. Only one fatal accident occurred—a suicide by hanging—and in this case the usual inquiries were held. The

The Hospital has been much overcrowded, especially in the division for women, and a new ward to accommodate 70 women—which was in progress throughout the year—was not ready for occupation at its close. An important addition was made to the Laundry Building, under the direction of the Government Architect, this included new drying, folding, ironing, and sorting rooms, and allowed a reorganisation of the old laundry and an increase in the space set apart for washing and other preliminary laundry processes. The laundry as altered is conveniently arranged and fitted, and is large enough for the whole of the work of the Hospital.

The necessity for comfortable dining and sitting rooms for the attendants and nurses has long been apparent, but the work has been from various causes delayed. During the year, however, a good start has been made. The Medical Superintendent has undertaken the erection of the rooms for attendants by means of the labour of artisans and patients, and good progress has been made with the work. The Government Architect has taken a contract for the rooms for nurses, and there is good reason to hope that the members of the Ward Staff in both divisions of the Hospital will be in occupation of the new buildings long before the close of the current year. Various minor improvements and alterations have been made in the buildings, and the whole Hospital has been kept in good repair.

The arrangements mentioned in the Report for last year, under which two wards in the male division were set apart for new patients on admission, one being devoted to the more quiet and orderly and another to the more demonstrative cases, have worked most satisfactorily, and go far to insure the proper individual care and treatment of patients in the earlier and more curative stage of the malady. On the completion of the new ward for women, Dr. Sinclair proposes to make similar arrangements in that division of the Hospital. Considerable and commendable care has been taken with regard to the industrial occupation of the inmates, and the returns forwarded quarterly for my information show that, on the average, upwards of 64 per cent. of the patients are usefully employed.

Upwards of 52 per cent. of the patients attend Divine Service on Sundays, and the room used for this purpose is well filled.

I have on several occasions made inquiries into the arrangements for nursing and supervising the patients at night and attending to those with faulty habits, and consider these satisfactory.

My official inspections of the Hospital were made on January 9th and 19th, February 23rd and 24th, March 21st, April 20th and 29th, May 1st and 15th, June 19th, July 17th and 24th, August 19th and 20th, September 11th and 28th, October 12th and 16th, November 13th, and December 21st; and I have, on various other occasions, visited the Hospital for special purposes. I am glad to be able to report that the general management is careful, judicious, and progressive.

Parramatta.

This Hospital has continued to receive recent cases of insanity from the whole of the Western District, and the number of these is slowly increasing, the number admitted during 1893 being larger than during any previous year. The greater proportion of patients are, however, suffering from chronic insanity, and have been transferred from other Hospitals. The number on December 31st, 1892, was 999, and 158 were received during the year, making a total of 1,157 under care. Of these, 59 were discharged as recovered and 5 as relieved; 2 were transferred to other Hospitals; 1 escaped and was not retaken; 63 died; and 1,027 remained at the close of the year. The recoveries give a per-centage of 47.96 on the admission; whilst the deaths were only 6.25 per cent. on the average daily number resident. Of the total number of deaths, 32 were due to disease of the brain, 9 to disease of the lungs and heart, and 18 to general debility and old age.

The general health has been good, but both measles and influenza were prevalent in the wards for short periods, and one patient died from the sequelæ of the former disease.

The accidents have been extremely few, considering the large population of the Hospital and the large number of epileptic, and aged, and feeble patients. One case of suicide occurred, and is fully mentioned in the Report of the Medical Superintendent.

The most important addition to the buildings during the year has been a new kitchen block, containing a spacious and lofty kitchen, with meat and vegetable stores, lavatories, cook's room, and dining and sitting rooms for the attendants. The work has been carried out by the Government Architect's Department, and the result is a handsome and convenient addition to the Hospital.

The staff of artisans, together with a number of patients, have been engaged throughout the year in erecting new workshops for carpenter, painter, and blacksmith, in refitting the sculleries of two wards, and in effecting improvements in the Farm buildings, which are now in a creditable condition.

The water supply to the Hospital has been a matter of anxiety. The source is the town supply, but the pressure has been varying and insufficient, and the defective condition of some of the mains has added to the danger. Steps have, however, now been taken to lay larger additional mains, and to clean those already in use, and by these means, if the municipal authorities maintain a fair and equable pressure, the buildings will be reasonably safe. A contract was taken towards the close of the year for various much-needed alterations to the weatherboard buildings; these included new bath and dressing rooms, pantries, lavatory, stores, and additional sleeping rooms for attendants, as well as various minor alterations and repairs. When completed, this division of the Hospital will be in serviceable working order, and will be good for the accommodation of chronic cases for a number of years. I visited the Hospital on January 12th, February 2nd and 17th, March 12th, May 10th and 23rd, June 2nd and 23rd, July 21st, August 10th and 24th, September 5th, October 13th and 24th, November 14th, December 1st, 12th and 22nd. At my visits I visited various parts of the Hospital, which now extends over a considerable area, and made the inquiries and inspections prescribed by statute.

Callan Park.

This Hospital still receives the whole of the recent cases of insanity from the metropolitan area, and the number of acute cases, in proportion to the general asylum population, is larger than at any other of the Hospitals.

The admissions have been considerably above the average number for the last five years, and, owing to the want of room in other institutions, it has been found impossible to remove the chronic cases, so that the wards have been unduly crowded throughout the year, especially in the female division.

On December 31st, 1892, the number in Hospital was 812, and 298 were admitted during the year, making a total of 1,110 under care. Of these, 105 were discharged as recovered and 14 as relieved, 80 were transferred to other hospitals and 74 died, leaving 837 under care at the close of the year.

The recovery rate only gives a percentage of 35.59 on the admissions, being the smallest for some years, this being probably due to the large number of general paralytics and other incurable cases among the patients received. The death-rate was 9.14 on the average number resident.

The general health was good, but minor epidemics of both measles and mumps occurred, as well as two or three cases of erysipelas.

Additions to the laundry, a sitting room for nurses at the cottages, and some alteration in the wards of the female division, so as to insure a better observation of the sick at night have been carried out under the supervision of the Government Architect, and various alterations to closets, drains, &c., at the older buildings have also been made. The water supply to the older buildings having been found defective, a new main was laid to these, so as to insure an adequate pressure in the event of fire.

A large reclamation of the harbour has been carried out by the Department of Harbours and Rivers, the banks being made by fascines and the space within these filled with sand and silt by means of steam dredges. In this way an unsightly and unwholesome mud flat has been done away with, and the Hospital estate increased by an area of some 5 acres. To complete the work, a road and fences along the eastern boundary are required, so as to give access to the property of adjoining owners, and to protect the Hospital gardens and grounds, which is now open to spoilation by trespassers.

The main wants of the Hospital at present are an additional sewing room for patients, sitting rooms for nurses and attendants, and detached sleeping rooms for the members of the staff employed on night duty.

I visited the Hospital on February 14th and 28th, March 7th, April 27th, May 8th and 30th, June 1st, July 31st, August 8th and 29th, September 13th and 30th, October 26th, November 7th and 21st, and December 11th and 19th, and carried out the inspections and inquiries required by the Lunacy Act.

Newcastle.

This Hospital has continued to receive imbecile and idiotic patients both direct and by transfer from the other hospitals, to which patients of this class are not unfrequently sent by mistake.

The number of patients on December 31st, 1892, was 263, and 22 were admitted direct, and 45 by transfer, making the total number under care 330. Of these, 6 were discharged relieved, 5 were transferred to other hospitals, 24 died, and 295 remained at the close of the year.

The number of direct admissions was larger than during any year, except 1892, since the opening of the Hospital. The death-rate was somewhat high, being 8.51 per cent., but the patients are in the main a feeble folk, of whom one-third suffer from epilepsy, and among whom a high death-rate may be expected. Of the 24 deaths 11 occurred from epilepsy and 8 from diseases of the lungs.

The general health has been fairly good, although at the beginning of the year a number of the inmates looked pallid and weak after an outbreak of influenza, from which 44 suffered. Though measles were,—at the time this disease was so general throughout the Colony—very prevalent in Newcastle, both in the houses near the Hospital and in those occupied in various parts of the town by the families of attendants and other members of the staff, this disease did not appear among the patients. This immunity was doubtless due to precautions taken by the Medical Superintendent, who insisted, among other things, that all attendants coming from houses in which the disease had appeared should change their clothes before commencing duty daily.

A number of the inmates suffer from minor physical deformities and defects, and care has been taken to remedy these as far as possible, specialists being called in to perform any necessary operations which would tend to the comfort of the patients or conduce to their mental development.

The system of night attendance is efficient, the proportion of wet and dirty beds at night being very small, notwithstanding the feeble and limited intelligence of the inmates, and their liability to faulty habits.

Attention has been paid to the employment of the inmates, and upwards of 52 per cent. are usefully employed daily, whilst about 75 per cent. are able to attend the religious services and amusements which are held regularly.

The new ward for female patients opened at the close of last year has been put into good order and set apart for the younger or nursery patients, to whom it gives a bright and cheerful home.

The Medical Superintendent has carried out various alterations to the buildings. Workshops for carpenters and painters have been provided in the basement of the new ward, and for mat-makers in connection with the stable buildings. Several of the dormitories have been improved by cutting large arches between adjoining rooms and by better ventilation, and the buildings throughout have been kept in good repair.

The chief work carried out under the supervision of the Government Architect was the screen fence at the back of the buildings, to shelter the inmates from the observation of people in adjoining streets. This work has been carried out in a very efficient and satisfactory manner, and serves all the purposes for which it was designed.

I visited the Hospital on January 27th, March 16th and 17th, May 4th and 5th, July 27th and 28th, September 20th and 21st, and December 7th and 8th, and on each occasion made a full inspection of the Hospital, and inquired into its general management. I am glad to report this as in all respects satisfactory.

Rydalmere.

New cases are not received at this Hospital which is filled with chronic cases transferred from the other institutions, mainly from Callan Park and Gladesville, as the wards at these Hospitals become overcrowded with this class of patients. The patients are for the most part quiet, and more or less demented, and a considerable proportion are epileptic, a special ward being set apart for this class.

The number of patients on December 31st, 1892, was 225, and 72 were transferred from Callan Park and Gladesville during the year, making a total of 297 under care. Of these 1 was discharged to the care of friends, 2 were transferred to the Hospital for the Insane at Parramatta, being found unfit, by reason of violence, for this institution, 22 died, and 272 remained at the close of the year.

The daily average number under care was 254, and the death-rate calculated on this was 8.66 per cent.

The ward for epileptics has now been occupied for nearly a year, and has answered its purpose in the most complete and satisfactory manner. The dormitory is well ventilated, and admits of easy supervision. The day and dining room is of ample size, and the airing yard, whilst of sufficient area, is not large enough to allow the patients to be at any time beyond the ready help and care of the attendants.

The Hospital ward has been altered in various minor particulars, and affords a comfortable home for the sick and more aged patients, but it is much too small, and additional dormitories on the ground floor, together with a few single rooms for special cases, are absolutely necessary.

The Medical Superintendent, whilst exercising a close watchfulness over the health and general welfare of the patients, has devoted particular attention to the improvement of the gardens and grounds of the Hospital. The orchard and the vegetable and flower gardens have been greatly extended and improved, and the airing courts, planted with shrubs and bright with flowers at all times of the year, are kept in admirable order, and are a great attraction to both patients and visitors.

The number of patients usefully employed has averaged 40 per cent. throughout the year. The night attendance appears to be satisfactory, and the number of patients wet at night is reported as averaging 10, about half of whom are epileptics. No seclusion or restraint has been used for two years in succession, and no fatal accident or suicide has occurred. Nothing whatever has been spent in wine, beer or other stimulants.

The protection of the buildings against fire has received consideration. Additional hydrants and more lengths of hose have been supplied, and fire buckets are set in the verandahs of all wards and filled every night. A pretty cottage which has been erected in the grounds, and is at present used for the needlewomen and laundresses, is designed as a residence for one of the officers, and will be occupied in accordance with the original arrangement so soon as the new buildings for women are completed. These buildings, for which a contract was taken at the close of the year, will afford accommodation for 150 female patients, and include cottages for the matron, nurses, laundresses, and other members of the staff, as well as a new and spacious laundry, large enough to serve for the whole establishment and for a number of additional patients as the ward accommodation, is extended.

An Act passed during the last session of Parliament provides for a private railway from Rosehill, near Parramatta, to Dural. This passes through a corner of the Hospital Estate, and is likely to be a great trouble to the officers in charge during construction, and a permanent source of danger to the patients and anxiety to the Medical Superintendent.

I visited the Hospital on January 12th, February 2nd and 17th, March 13th, April 24th and 25th, May 10th and 26th, June 16th, July 21st, August 4th, September 5th, October 10th, and December 22nd, and made the various inspections and inquiries required by statute. The Hospital, which has now been managed for nearly three years as a separate institution, shows evidence of steady progress.

The maintenance rate has fallen to 9s. 9½d. per head, and will, no doubt, be still lower during next year when the number of patients will be somewhat larger.

LICENSED HOUSES FOR THE INSANE.

Bay View House, Cook's River.

The number of patients on December 31st, 1892, was 102, and 24 were admitted during the year making 126 under care.

Of the admissions, 19 were admitted for the first time, 1 was readmitted, and 4 were transferred from Hospitals for the Insane. During the year 13 were discharged recovered, 4 relieved, 3 were transferred to Hospitals for the Insane, and 8 died, leaving 98—19 males and 79 females—at the close of the year. The number of patients under care was 125, and the average daily number resident, 100. The recovery rate was 65 per cent. on the admissions, and this raises the average recovery rate for the last five years to the satisfactory percentage of 47.16 per cent. The death-rate was 8.00, being considerably higher than last year.

Of the number on the register at the close of the year 6 were absent on trial, in accordance with the provisions of the Lunacy Act.

I visited this institution on February 8th, March 20th, May 2nd, June 12th, July 25th, August 28th, September 14th, October 23rd, and November 28th, and the Official Visitors, Sir Alfred Roberts, Dr. J. C. Cox, and Mr. Nugent Robertson, Barrister-at-Law, paid visits once in each month during the year.

At my visits I made the inquiries prescribed by statute, and was careful to see all the patients, especially those recently admitted, and to make inquiries as to their fitness for care and treatment in an institution for the insane. I have investigated all complaints made to me, which were not obviously due to delusions, and have, when necessary, seen the patients alone. I have on all occasions found the rooms everywhere clean and orderly, and consider the general management of the institution satisfactory. An unfortunate accident by which a patient died from an overdose of chloral hydrate and bromide of potassium has been noted in a former part of my report.

Very considerable additions has been made to the institution by the purchase of an adjoining property, the house on which has been repaired and greatly altered, and rooms set apart for 9 patients and the necessary attendants. These rooms have been very nicely furnished and give excellent accommodation for private cases. The alterations were approved by the Chief Secretary under the provisions of section 27 of the Lunacy Act, on October 13th, and the building now forms part of the Licensed House.

The number of Government patients has been kept at 50 during the year, vacancies by death being filled by transfer of others from the Hospitals. The quarters for these patients have been rendered more comfortable by the addition of a large covered and enclosed verandah, which serves as an additional day-room.

The following are the main statistics for the year:—

TABLE 1.

SHOWING the Admissions, Readmissions, Discharges, and Deaths in the Licensed House for the Insane, Cook's River, during the year 1893.

	Male.			Female.			Total.		
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
In Hospital on 31st December, 1892	17	85	102						
Admitted for the first time during the year	8	11	19						
Readmitted during the year	2	1	3						
Transferred during the year	2	2	4						
Total under care during the year 1893	10	14	24						
Discharge or removal—									
Recovered	3	10	13						
Relieved	1	3	4						
Transferred	1	2	3						
Escaped (and not recaptured)	—	—	—						
Died	3	5	8						
Total discharged or died during the year 1893	8	20	28						
Remaining	19	79	98						
Average number resident during the year	17	83	100						
* Persons under care during the year †	27	98	125						
* Persons admitted	8	11	19						
* Persons recovered	3	10	13						

* Persons, i.e., separate persons in contradistinction to "cases" which may include the same individual more than once. † Total cases minus readmission of patients discharged during the current year.

TABLE 2.

SHOWING the Admissions, Discharges, and Deaths, with the Mean Annual Mortality, and the proportion of Recoveries, &c., per cent., at the Licensed House for the Insane, Cook's River, from the years 1876-1893 inclusive.

Year.	Admitted		Transferred from other Hospitals, &c.		Discharged.		Transferred to other Hospitals, &c.		Escaped and not recaptured within 28 days		Died.	Remaining in Hospital, 31st December in each year.		Average number resident.			Percentage of recoveries on admissions and readmissions.			Percentage of patients relieved on admissions and readmissions.			Percentage of deaths on average number resident.					
	For the first time.		Readmitted.		Re-covered.		Re-lieved.		Hospitals, &c.			Total.		M. F.		M. F. Total.			M. F. Total.			M. F. Total.						
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.		M.	F.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.			
1876	2	1	3	—	—	—	—	—	—	—	—	2	8	10	135	6	113	119	50.00	33.33	31.27	7.09	8.38					
1877	5	3	8	1	1	2	6	8	—	—	—	2	7	9	4130	134	5	129	134	40.00	150.00	33.33	25.00	11.11	40.00	5.42	6.06	
1878	5	2	7	1	1	7	8	3	2	5	—	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1879	3	1	4	1	1	4	4	1	1	2	—	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1880	3	2	5	1	1	9	9	1	3	4	1	2	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1881	5	9	14	—	—	10	11	4	3	7	2	5	7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1882	7	4	11	—	—	10	12	2	2	4	1	1	2	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1883	7	9	16	1	1	14	5	5	2	7	3	2	6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1884	7	12	19	—	—	2	5	7	4	8	12	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1885	12	9	21	—	—	6	6	5	8	13	1	3	4	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1886	6	13	19	—	—	5	5	—	4	4	2	1	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1887	13	16	29	1	1	1	3	7	10	1	3	4	1	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1888	6	12	18	2	2	4	4	6	9	15	2	1	3	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1889	7	12	19	—	—	1	1	1	1	2	1	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1890	8	9	17	—	—	4	4	9	10	19	1	1	3	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1891	10	21	31	1	2	3	1	3	4	5	10	4	2	6	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1892	8	8	16	—	—	1	1	1	5	6	2	2	4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1893	8	11	19	1	1	2	2	4	3	10	13	1	3	4	1	2	3	—	—	—	—	—	—	—	—	—	—	—

Swiss and Woodland Cottages, Picton.

These houses are licensed, under the provisions of the 42nd and 43rd sections of the Lunacy Act, each for a single patient.

They were visited on April 13th and August 25th, and were found in good order, and the patients properly cared for in all respects. Both are visited by Dr. Arthur Mills, of Picton, the Government Medical Officer for the district, in accordance with the provisions of the Lunacy Act, and the medical journals are properly kept.

Ryde.

A license was granted on the 6th of September to the Rev. Mother Joseph, of the Little Company of Mary, for the reception of 6 female patients, the license being conditional on the carrying out of certain alterations and improvements, so as to ensure the safety, comfort, and health of the patients.

I visited this licensed house on the 6th of November, and found that the improvements referred to had all been carried out, and the house was furnished and ready for the reception of patients. Dr. Cotton D'Englesqueville has been engaged to attend as Visiting Medical Officer, the nursing will be carried out by the Sisters of the Society, and the house, which is pleasantly situated in a large area of land, has all the requirements of a comfortable home for cases of mental disease.

No patients have been received up to the close of the year.

HOSPITAL FOR CRIMINAL INSANE, PARRAMATTA.

The number of inmates on December 31st, 1893, was 57, and 11 were admitted during the year, making a total of 68 under care. Of these, 3 recovered, 13 were transferred to other Hospitals on termination of sentence or other change of status, and 3 died, leaving 49—41 males and 8 females—under care at the close of the year. The percentage of recoveries on admissions was 27·27, and the percentage of deaths 6·00, on the average number resident.

The majority of the patients are what is known as Governor's pleasure cases, those acquitted on the ground of being insane at the time they committed the offence with which they were charged, and ordered by the Courts to be kept in confinement during the Governor's pleasure. In addition to these are certain cases certified to be insane whilst awaiting trial, or found to be insane by jury on arraignment. The patients serving sentence are becoming fewer in number with each year, none being now received who are serving sentences exceeding one year.

The following return shows the classification of the patients:—

TABLE showing Classification of the Crimes of Patients remaining in the Hospital for the Criminal Insane, at Parramatta, on the 31st December, 1893.

Crime.	Classified with reference to the period at which insanity was recognized.																	
	Certified to be insane whilst awaiting trial.			Found insane by Jury on arraignment.			Acquitted on the grounds of insanity.			Reprieved on the grounds of insanity.			Certified as insane whilst serving sentence.			Total number in Hospital, 31st December, 1893.		
	M.	F.	Total	M.	F.	Total	M.	F.	Total	M.	F.	Total	M.	F.	Total	M.	F.	Total
Murder	3	1	4	1	1	2	8	2	10	...	...	...	5	1	6	17	5	22
Attempt to murder	1	1	...	...	...	2	...	2	...	...	...	...	...	...	2	1	3
Unnatural offence	1	...	1	...	...	...	...	...	...	1	...	1
Cutting and wounding, shooting with intent, &c.	2	...	2	9	1	10	...	...	...	1	...	1	12	1	13
Manslaughter	1	...	1	...	...	...	...	...	...	1	...	1
Indecent assault	1	...	1	...	...	...	...	...	...	1	...	1
Rape	1	...	1	1	...	1
Horse-stealing	1	...	1	...	...	...	1	...	1	2	...	2
False pretences	1	...	1	...	...	...	...	...	...	1	...	1
Larceny	1	...	1	...	...	...	...	...	...	1	...	1
Unlawful assault	2	...	2	2	...	2
Attempting suicide	1	...	1	...	...	...	...	...	...	1	...	1
Total	3	2	5	3	1	4	25	4	29	...	...	...	10	1	11	41	8	49

I visited the Hospital on February 17th, May 10th, July 21st, August 24th, October 13th, and November 14th, and on two of these occasions I checked the registers and saw every patient thereon.

The instances in which seclusion or restraint have been necessary have been very few, and the general condition of the ward has been one of quietness and good order. An average number of 42 patients or upwards of 85 per cent. of the whole are actively and usefully employed daily, and upwards of 50 per cent. have attended divine service every Sunday.

During the year extensive and much needed alterations have been carried out under the direction of the Government Architect. The main corridor has been enlarged and made brighter and more cheerful by throwing into it three single rooms. A small seclusion yard found to be unnecessary has been converted into an additional dormitory for eight beds. A steep, dark, dangerous, wooden staircase has been replaced by well-lighted wide and safe stone and slate steps, and a proper room for the night attendant as well as store-rooms, &c., have been provided.

The carrying out of these works necessitated the temporary employment of additional attendants to prevent accidents among a particularly dangerous class of patients.

The full statistics of the Hospital will be found in the report of the Medical Superintendent. (Appendix F.)

OBSERVATION WARDS H.M. GAOLS, DARLINGHURST AND PARRAMATTA.

These wards are under the administration of the Department of Prisons, but the Lunacy Act provides further inspection by the Inspector-General of the Insane once in every three months, and I have, as during former years, been met at my visits with extreme courtesy by the officers of the Prisons Department, and afforded all assistance in carrying out any inquiries, and all necessary information in the cases of individual prisoners.

I visited the ward at Darlinghurst on March 8th, June 14th, August 30th, and October 27th, and at each visit saw every prisoner on the register, and inquired into the circumstances of his detention. The ward has been under careful administration, and the observation of the prisoners has been close and intelligent and their treatment and management judicious.

On December 31st, 1892, there were 7 prisoners in the ward, and 35 were admitted, making 42 under care. Of these, 26 were discharged of sound mind, 4 were certified as insane and sent to Hospital, 4 were discharged to the Police Courts, and 8 remained at the close of the year.

In addition to these cases admitted to the ward under the provisions of the Lunacy Statute, there was 1 case in the ward whilst awaiting trial, 6 whilst detained during the pleasure of His Excellency the Governor, together with 24 under sentence, and 104 under remand from the Police Courts. The majority of the latter cases were suffering from delirium tremens or temporary mental aberration due to drink, and were placed under the trained warders in charge of the ward for their own safety and care, and to the convenience of departmental administration.

I visited the ward at Parramatta on March 24th, May 26th, August 24th, and November 16th, and on each occasion made a careful examination of the inmates and their surroundings.

The statistics of the ward show that 14 inmates remained on December 31st, 1892, and 16 were admitted during the year, making a total of 30 under care. Of these, 11 were discharged of sound mind, 10 were sent on the Hospitals for the Insane, and 9 remained at the close of the year. In addition to these

these the following were during the year treated in the ward under departmental arrangements: Detained during the pleasure of His Excellency the Governor 4, awaiting trial 1, under sentence from Police Courts 6, and under remand 21.

The records have been carefully kept, and the ward and its inmates have been in all respects under satisfactory management.

RETURN showing the Number of Persons received into the Observation Ward, H.M. Gaol, Darlinghurst, during the year 1893, the places whence received, and their disposal.

Whence received.	Remaining on 31st December, 1892.			Received.			Discharged.												Transferred to Obs. Ward, Parramatta.			Remaining on 31st December, 1893.								
							Of sound mind.			To Hospitals for the Insane.			To Police Courts.			Died.														
	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.			
Admitted under the provisions of section 63 of the Lunacy Act and section 4 of the Lunacy Act Amendment Act, from—																														
H. M. Gaols—																														
Darlinghurst.....	3		3	8	3	11	7	3	10						1		1											3		3
Goulburn				3		3	2		2																			1		1
Bathurst	2		2				1		1						1		1													
Maitland	1		1	6		6	5		5	1		1																1		1
Berrima				1		1									1		1													
Bilocla				4	1	5	1	1	2	2		2	1		1		1													
Albury				1		1	1		1																					
Mudgee				1		1																						1		1
Grafton				1		1	1		1																					
Young				1		1	1		1																					
Tamworth				1	1	2	1		1	1		1	1																	
Cootamundra				1		1	1		1																					
Casino	1		1				1		1																					
Yass				1		1																						1		1
Trial Bay Prison				1		1																						1		1
Total	7		7	30	5	35	22	4	26	3	1	4	4		4		4											8		8
Awaiting trial—																														
Supreme Court, Sydney, Quarter Sessions						1	1								1	1														
Acquitted on ground of insanity, and awaiting Governor's pleasure					5	1	6	1	1	2	2		2													3	1	1		1
From Police Courts—																														
Under sentence	1	1	2	17	7	24	17	6	23	1		1		2	2															
On remand	2		2	78	26	104	5		5					72	26	98	1		1								2		2	
Total	10	1	11	130	40	170	45	11	56	6	2	8	76	28	104	1		1		1		1		1		1	11		11	

RETURN showing the Number of Persons received into the Observation Ward, H.M. Gaol, Parramatta, during the year 1893, the places whence received, and their disposal.

Whence received.	Remaining on 31st December, 1892.			Received.			Discharged.												Remaining on 31st December, 1893.					
							Of sound mind.			To Hospitals for the Insane.			To Police Courts.			Died.								
	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.			
Admitted under the provisions of sections of the Lunacy Act and section 4 of the Lunacy Act Amendment Act from—																								
H.M. Gaols—																								
Darlinghurst	3		3				1		1													2		2
Parramatta	11		11	14		14	8		8	10		10										7		7
Windsor				1		1	1		1															
Goulburn				1		1	1		1															
Total	14		14	16		16	11		11	10		10										9		9
Awaiting trial—																								
Supreme Court, Quarter Sessions						1	1		1															
Acquitted on the ground of insanity and awaiting Governor's pleasure	3		3	1		1																4		4
From Police Courts—																								
Under sentence				6		6	1		1	4		4										1		1
On remand				21		21									21		21							
Total	17		17	45		45	13		13	14		14			21		21					14		14

The following return, prepared from papers kindly forwarded to me by the Comptroller-General of Prisons, shows the number of persons under temporary treatment in the gaols of the Colony for symptoms of insanity during the year 1893:—

RETURN showing Number of Persons under treatment for symptoms of Insanity in Gaols, &c., during the year 1893.

Name of Gaol.	Under treatment and not certified as Insane.	Certified as Insane in Gaol.	How disposed of.					Died.	Remaining
			Discharged to Hospitals for Insane or Receiving House.	Discharged to Darlinghurst or other Gaols.	Discharged as sane at Police Courts.	Discharged—cured.			
Albury	7	6	6			7			
Armidale	25		1		16	8			
Bathurst	18				18				
Bourke	13	5	5		10		3		
Braidwood	4	2	2			4			
Bulranald	2				2				
Bega		1	1						
Berrima	1			1					
Biloea	5			5					
Biugera	1	1	1		1				
Broken Hill	9	3	3		8			1	
Burrowa	1	1	1			1			
Bombala	1					1			
Coonamble	2	1	1		2				
Cooranundra	9		4		5				
Cobar		3	3						
Cowra	4	2	2	4					
Cooma		1	1						
Coonabarabran									
Deniliquin	5	1	1			5			
Dubbo	17			12	5				
Forbes	8				8				
Glen Innes									
Goulburn	6	6	6	3	3				
Grafton	12	12	12		12				
Grenfell	1	2	2			1			
Gunnedah	1	1	1		1				
Hay	17				17				
Hillston	1			1					
Inverell	8	6	6		7			1	
Kempsey									
Maitland	41	20	19	7	26	7	2		
Mudgee	1	7	7			1			
Muswellbrook		3	3						
Murrumbidgee		5	5						
Moree	2	1	1		1	1			
Milparinka									
Narrabri	6	5	5			4		2	
Orange	1	5	5			1			
Port Macquarie	1	2	2			1			
Queanbeyan	1	2	2			1			
Silverton									
Singleton	4	1	1	2	2				
Tamworth	8			1	4	2		1	
Tenterfield		2	2						
Trial Bay		1		1					
Wagga Wagga	2	7	7		1	1			
Walgett		1		1					
Wollongong	2				2				
Wentworth	1	3	3		1				
Windsor	3	2	2		3				
Wilcannia	1	1				1		1	
Wellington	4			1		2		1	
Young	5				5				
Yass	6				5	1			
Total	267	122	123	39	166	49	5	7	

APPENDIX A.

The Medical Superintendent, Hospital for the Insane, Gladsville, to The Inspector-General of the Insane.

Sir,

Hospital for the Insane, Gladsville, 16 March, 1894.

I have the honor to forward for your information a report on this Hospital for the year 1893, together with the usual statistical tables.

At the beginning of the year there were 852 patients in the Hospital. During the year 223 (124 men and 99 women) were admitted. The whole number under treatment was 1,075, and the average number resident 807. There were discharged 230, of whom 106 had recovered, 12 were relieved, 60 were transferred to other Hospitals, and 52 died. There remained at the close of the year 523 men and 322 women, a total of 845.

Of those discharged 106, or 48.84 of the admissions had recovered. Unfortunately the number of relapses has at the same time been large, as shown by the increase in the readmissions—46 this year as compared with 32, the average for the past 5 years. This is, however, probably only temporary, and due to the pressure of hard times.

There

There has been no increase in the number of patients this year, owing to the transfer of 60 to other Hospitals less overcrowded than this. The admissions and discharges have thus balanced each other. The ward for men opened in 1892 so increased the accommodation on the male side that the 22 patients in excess of the proper number did not seriously incommode the working of the Hospital. On the female side, however, the overcrowding has continued, and it is now so great that the opening of the ward approaching completion will hardly do more than absorb the number at present in the Hospital in excess of the accommodation. Before the end of 1894, if the admissions continue as numerous as usual, the wards will again be over-full.

The general health of the Hospital has been good; the death rate 6·44 is low for an institution of this nature, and is about the average of previous years. There has been no outbreak of epidemic or infectious disease since the influenza of 1892. It is worthy of note in this connection, that typhoid fever, of which there have been occasional cases for some years past, has practically disappeared from the Hospital since the introduction of Nepean water, and the discontinuance of the supply from the Hospital reservoirs, which had become polluted—and this too, though the fever has been prevalent in the neighbourhood.

During the year the addition to the laundry erected by the Government Architect was occupied and afforded welcome relief to the cramped and insufficient quarters previously existing. The whole laundry is now a convenient and well-arranged one, and is expected to prove sufficient for all demands likely to be made on it. The new building consists of receiving, sorting, and delivering rooms, of a mangle and calendering room, and of a drying closet. The rooms formerly used for these purposes have been thrown into the general laundry. It is unfortunately impossible to increase the area of the drying green, which is bounded by the public road, and is now much too small for the work done in the laundry.

I beg on behalf of the Hospital to tender thanks to those who kindly gave entertainments, viz.:—Messrs. Williamson and Musgrove, and the members of the Lyceum Comic Opera Company, The Sydney Orpheus Club, The Lotus Dramatic Club, Mr. J. Hellmrich and friends, Miss Millic Davis and Miss Colbourne Baber, the Id-Agere Dramatic Society, Mr. Grimm and friends, Mr. E. P. Everett and Mr. Lister Bellingham and friends, ladies and gentlemen from Willoughby, Mr. Crabtree and friends, and the following bands—Ryde, Enterprise, Paddington Borough, and Balmam Coldstream.

The following donations have been received, and I take this opportunity of thanking the donors for their gifts:—Illustrated papers and books from Mrs. Salter, Mrs. Pearson, E. O. Smith, Esq., Miss Gerard and Miss Kilby, Honorary Secretaries of the Hunter's Hill Library, and Miss Hood; 4 Lord Howe Island Fruit Pigeons, from T. R. Iecly, Esq.; Christmas cards from the Rev. Samuel Wilkinson; a Kangaroo, from Dr. Thring; £5 10s., from Mrs. Salter; and £3 from anonymous donors.

The proprietors of the following newspapers:—*Bathurst Free Press*, *Bathurst Daily Times*, *Burrangong Argus*, *Deniliquin Chronicle*, *Dubbo Dispatch*, *Goulburn Herald*, *Hawarra Mercury*, *Kiama Independent*, *Wagga Wagga Express*, *Maitland Mercury*, *Monaro Mercury*, *Queanbeyan Age*, *St. Leonards Recorder*, *Western Post*, *Weekly Advocate*, *Yass Courier*, and *Sydney Daily Telegraph*, have generously forwarded a copy of each issue free during the year.

To the officers and staff I beg to tender my hearty thanks for the willing and efficient assistance they have rendered me during the year.

I have, &c.,
ERIC SINCLAIR,
Medical Superintendent.

TABLE 1.
SHOWING the Admissions, Readmissions, Discharges, and Deaths, in the Hospital for the Insane, Gladesville, during the year 1893.

	Male.	Female.	Total.
In Hospital on 31st December, 1892	530	322	852
	Male.	Female.	Total.
Admitted for the first time during the year	102	60	171
Readmitted during the year.....	20	26	46
Transferred during the year.....	2	4	6
	124	99	223
Total under care during the year 1893	654	421	1,075
Discharge or removal—			
Recovered	62	44	106
Relieved	5	7	12
Transferred	27	33	60
Escaped (and not recaptured) .....	.....	.....	.....
Died	37	15	52
Total discharged or died during the year 1893	131	99	230
Remaining	523	322	845
Average number resident during the year.....	520	287	807
*Persons under care during the year†	652	414	1,066
*Persons admitted	122	92	214
*Persons recovered	62	43	105

* Persons, i.e., separate persons in contradistinction to "cases" which may include the same individual more than once. † Total cases, minus readmission of patients discharged during the current year.

TABLE

TABLE 2.

SHOWING the Admissions, Readmissions, Discharges, and Deaths, with the Mean Annual Mortality and the proportion of Recoveries, &c., per cent., at the Hospital for the Insane, Gladsville, from the year 1869 to 1893 inclusive.

Table with columns: Year, Admitted (M, F, Total), Transferred from other Hospitals, Discharged (Recovered, Relieved), Transferred to other Hospitals, Escaped and not recaptured within 23 days, Died (M, F, Total), Remaining in Hospital 31st Dec., Average number resident, Percentage of recoveries on admissions and readmissions, Percentage of patients relieved on admissions and readmissions, Percentage of deaths on average numbers residents.

APPENDIX B.

The Medical Superintendent, Hospital for the Insane, Parramatta, to the Inspector-General of the Insane.

Sir,

Hospital for the Insane, Parramatta, 19 February, 1894.

I do myself the honor to forward herewith a report upon this Hospital for the year 1893, accompanied by the usual statistical tables.

By reference to the latter it will be seen that there were 999 patients in the Hospital on the 31st of December, 1892; that 108 were admitted during the year for the first time, 15 readmitted, and 35 transferred from other institutions, making a total of 158 (107 men and 51 women), and raising the number of those under care and treatment during the year to 1,157 (727 men and 430 women). Of this number 36 men and 23 women were discharged recovered, and 3 men and 2 women relieved; 1 man and 1 woman were transferred to another institution, 1 woman escaped, and 45 men and 18 women died during the year, leaving a total of 1,027 (642 men and 385 women) on the 31st of December, 1893, being an increase of 28 over the numbers at the corresponding period of the previous year.

By further reference to the statistics of preceding years it will be seen how great has been the increase in the population of this Institution. The number on the 31st of December, 1882, was 790, and the increase in eleven years was 237. In this total is not included the 49 criminal patients, who, although in a portion of the same Institution, are accounted for in a separate report.

The percentage of recoveries on the admissions and readmissions for the twelve months was slightly higher than for the preceding year, being 46.73 for the latter and 47.96 for the former; whilst the death-rate, calculated upon the average number resident, was 6.25, being higher than 1892, owing in a great measure to the falling off of a great many of the old and feeble, 16 of whom were more than 70 years of age, and 12 others between 60 and 70. The general health of the patients has, however, on the whole been good. An epidemic of measles broke out amongst the female patients, but fortunately the disease was of a very mild type, and with one exception all those attacked made a rapid recovery. The exception was a young woman, who was in a very feeble state of health and was suffering from severe chorea, and who died from a complication of ailments.

The escapes have been ten, and with one exception the patients were returned to the Hospital within a very short time.

The accidents were neither numerous nor of a serious nature, with the following exceptions:—A female patient fell during an epileptic attack, and sustained a simple fracture of both bones of the leg, a few inches above the ankle. A man, whilst attempting to escape, fell and fractured one of the bones of the left arm; and a simple fracture of the clavicle was due to a fall resulting from a push by a fellow patient. Each of these patients made an uninterrupted recovery. Two cases in which death occurred somewhat suddenly were reported to the District Coroner, but in neither was an inquiry deemed necessary.

Unfortunately the year was not passed without an occurrence of a melancholy nature. A patient who had for a long time been convalescent, who was employed in carrying messages about the neighbourhood, and was a general favourite and much trusted, committed suicide. He had only a day or two before obtained a situation, and was about to be discharged. The whole circumstances of the case formed the subject of a special report to you at the time, and an inquiry was held by the Coroner, at which the jury did not attribute blame to anyone.

Divine Services have been regularly held in the Institution, and the entertainments and recreation of the patients has not been neglected. In this connection I desire to point out the necessity for a special room, to be used in the evenings for smoking, billiards, music, and other amusements, in connection with but somewhat detached from the wards for convalescent and industrious patients, in the male division. The dining rooms at present used are within the wards, surrounded by dormitories and single rooms, in which patients who go to bed somewhat earlier than others cannot sleep owing to the noise made

made by those who are up. There is an admirable site for such a room, and if built of wood its cost would not be great. A large amount of work has been done by the Government Architect's Department; the most important being the erection of a new kitchen on the site of the old one. This kitchen is fitted with the most modern and convenient cooking apparatus to be obtained in the Colony. The result has been equal to the expectations formed of it, and the patients now have their meals served up in a much more comfortable and appetising manner than was possible under former arrangements. New and convenient stables have been built on a detached site. The whole of the outside of the wards for women has been repainted, the gutters, spouting, &c., being repaired at the same time, and the work performed in a more thorough and satisfactory manner than at any previous time. Alterations to the weatherboard division for men—which include new bath and dressing-rooms, additional rooms for attendants, and other important improvements—are now in progress, and new water mains, which will it is hoped, give an increased supply at a higher pressure, are being laid, and will be soon completed.

As in a previous report, I wish again to point out that the two most urgent requirements still unsatisfied are a dining-room for the nurses and a detached cottage in which those nurses who are on duty during the night could sleep. This, for obvious reasons, should be as far removed as possible from the bustle and noise inseparable from the wards of a large hospital such as this.

The usual amount of work has been done in connection with the gardens and ornamental grounds, the trees and plants in which are rapidly growing, and already give to the hospital a sheltered and picturesque appearance. A number of patients have been employed at this work, whilst others have, under the supervision of the artisans, completed a new shop for the painter and made good progress with large shops for the carpenter, blacksmith, and other tradesmen. These new shops will render the industrial occupation of the patients more easy, as they will have abundant space for work and be under efficient supervision whilst employed.

The hospital farm, with the buildings thereon, has received the usual amount of attention. The old fences have been removed and replaced by others which now include a larger area under cultivation, and by the aid of a larger number of patients than usual the supply of vegetables and fruit has been decidedly increased.

The changes during the year amongst the staff were not numerous. Miss Spencer, who succeeded Mrs. Burn as Matron, applied for and received the position of Matron to the Walker Hospital, and was succeeded by Miss Mary T. Cooke.

I have to thank several ladies and gentlemen of Parramatta and Sydney, and especially Mr. Arthur Massey, organist of St. John's, Parramatta, for their kind efforts in organising and carrying out musical and other entertainments for the benefit of the patients, and also the proprietors of the *Sydney Illustrated News*, *Bathurst Free Press*, and others for newspapers regularly forwarded.

In conclusion, I must record my thanks to Drs. Russell and Millard and all others associated with me during the year for the able and efficient assistance at all times willingly given.

I have, &c.,
EDWIN GODSON,
Medical Superintendent.

TABLE I.

SHOWING the Admissions, Readmissions, Discharges, and Deaths, in the Hospital for the Insane, Parramatta, during the year 1893.

	Male.	Female.	Total.
In Hospital on 31st December, 1892	620	379	999
	Male.	Female.	Total.
Admitted for the first time during the year	79	29	108
Readmitted during the year	10	5	15
Transferred during the year	18	17	35
	107	51	158
Total under care during the year 1893	727	430	1,157
	Male.	Female.	Total.
Discharge or removal—			
Recovered	36	23	59
Relieved	3	2	5
Transferred	1	1	2
Escaped (and not recaptured)	1	1	2
Died	45	18	63
Total discharged or died during the year 1893	85	45	130
Remaining	642	385	1,027
Average number resident during the year	628	380	1,008
*Persons under care during the year†	726	430	1,156
*Persons admitted	88	34	122
*Persons recovered	36	23	59

* Persons, i.e., separate persons in contradistinction to "cases" which may include the same individual more than once.

† Total cases, minus

readmission of patients discharged during the current year.

TABLE 2.

Showing the Admissions, Readmissions, Discharges, and Deaths, with the Mean Annual Mortality, and the proportion of Recoveries, &c., per cent., at the Hospital for the Insane, Parramatta, from the year 1876 to 1893 inclusive.

Year.	Admitted.			Transferred from other Hospitals &c.	Discharged.			Transferred to other Hospitals, &c.	Escaped and not recaptured within 28 days.	Died.	Remaining in Hospital, 31st December in each year.	Average number resident.	Percentage of recoveries on admissions and readmissions.	Percentage of patients relieved on admissions and readmissions.	Percentage of deaths on average number resident.									
	For the first time.		Readmitted.		Re-covered.	Re-lieved.	Total.									Total.	Total.	M. F. Total.	M. F. Total.	M. F. Total.	M. F. Total.	M. F. Total.	M. F. Total.	
	M.	F.					M.																	F.
1876	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1877	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1878	1	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1879	40	20	60	1	119	2	15	6	21	1	1	2	13	4	17	..								
1880	54	25	79	1	118	2	20	12	37	2	1	1	1	1	1	..								
1881	48	12	60	2	115	5	20	23	6	29	4	2	6	1	2	..								
1882	52	20	72	..	106	1	27	28	0	35	1	..	1	1	3	..								
1883	56	26	82	1	114	136	150	33	4	37	3	1	4	2	2	..								
1884	60	30	90	1	126	15	41	21	5	26	..	..	2	2	3	..						
1885	62	28	90	2	114	5	19	24	8	29	1	1	1	1	1	..								
1886	50	21	71	..	117	8	20	28	12	41	2	..	2	4	3	..								
1887	64	21	85	3	111	3	14	14	10	24	..	..	1	1	1	..						
1888	65	26	91	5	108	3	16	24	8	32	..	..	1	1	5	..						
1889	67	20	87	2	109	2	18	20	19	39	..	..	..	..	..	..		
1890	61	36	97	2	103	2	22	25	16	41	1	..	..	..	..	..			
1891	59	31	90	11	112	13	75	37	20	57	1	1	1	1	1	..								
1892	56	22	78	10	104	25	33	58	39	13	43	..	..	..	..	..			
1893	79	29	108	10	115	18	36	54	59	3	2	5	1	1	1	..								

APPENDIX C.

The Medical Superintendent, Hospital for the Insane, Callan Park, to the Inspector-General of the Insane Sir,

Hospital for the Insane, Callan Park, Balmain, 24 February, 1894.

I do myself the honor to forward for your information the usual annual report on this Institution for the past year together with the customary statistical tables.

On the 31st December, 1892, there were 812 patients in the Hospital—445 males and 367 females; and during the past year 251 patients (142 males and 109 females) were admitted for the first time; 44 (25 males and 19 females) were readmitted; and 3 (1 male and 2 females) were transferred from other Hospitals, making a total of 1,110 patients under care during the year.

The average number resident was 809 (443 males and 366 females), and the number remaining at the end of the year was 837 (412 males and 395 females), being a total increase of 25 as compared with the year 1892. The number of female patients was increased by 28, whilst the number of males decreased by 3.

The total number of deaths was 74, being a percentage of 9.14 on the average number resident; and in connection with this, I would refer to Table 10, which shows that an increasingly large number of general paralytics were admitted during the year, and to Table 4, which shows that no less than 27 deaths occurred from this cause, whilst 19 only died from other forms of cerebral disease. The greater number of the patients admitted to this hospital are residents of the city or other large towns, and this form of insanity appears to develop chiefly amongst that class of people. Another striking feature is the large number of deaths occurring within twelve months of admission, viz., 40, or more than half of the total deaths. The great depression that has existed during the year, is, I think, accountable for a large number of admissions, as in more prosperous times patients who have been admitted would probably have been cared for by their friends at their own homes.

No suicide or fatal accident occurred during the year, but a patient died suddenly while under treatment for a compound fracture of the leg. An inquest was held and a verdict returned by the jury that death was due to epilepsy. A full report on this case was sent to you at the time.

Owing to the freedom allowed in modern treatment and the apparent ease with which patients can escape if they are inclined to do so, several attempts were made but only twelve got beyond the grounds, and of these three only remained at large more than a few hours and all were returned to the Hospital within the statutory period.

On the whole the general health of the patients has been good, though there was a slight epidemic of measles and of mumps. A few patients and several members of the staff suffered from these complaints. A few cases of influenza also occurred.

The percentage of recoveries on admissions was 35.59 (31.13 males, 41.40 females), and this is the lowest since 1885.

The hospital has been overcrowded during the year, especially in the female division. On the male side there is accommodation for about 100 more patients than on the female, and owing to the number of patients transferred to Rydalmore the excess in numbers has not been so great or so embarrassing. On the female side it has been found necessary to convert the dressing-room attached to the general bath-room into a dormitory which accommodates ten patients, but with this addition the wards are still much overcrowded.

Every effort has been made to induce the patients to occupy themselves instead of idling in the wards, and with a fair measure of success. The artisans' shops have supplied work for a number, and the usual out-door work, such as gardening, quarrying, road-making, &c., has given employment to many. Patients who are not able to do heavy or skilled work find employment in the ordinary ward work, in the kitchen, laundry, and in the mattress room in picking hair, &c.

The

The recreation of the patients has not been neglected. The usual out-door sports, such as cricket (which is played every Saturday with outside clubs), bowls, quoits, &c., have been carried out. During the winter the usual fortnightly dances were held, and in the wards means of amusement have also been provided in the form of billiards, bagatelle, pianos, &c., and the library has been kept well supplied with books. Through the courtesy of Dr. Sinclair, many of the patients were enabled to attend the Gladesville dances which are held every second week.

The usual picnics have been held, and through the kindness of Mr. Sager of the Health Department an exceptionally enjoyable one was held at the Quarantine Ground, when the greatest kindness were shown by the Superintendent and his assistants. I have to thank Mr. Huenerbein for his kindness in organising several excellent concerts in which most of the leading artists in Sydney have taken part; also several ladies and gentlemen amateurs who kindly tendered their services; and several local bands, the members of which have attended on Saturday afternoons and played in the cricket ground. The following donations have been received during the year:—Illustrated and other papers from Miss Morehead, Mrs. Wm. Chisholm, Dr. Manning, Judge Fitzhardinge, Mr. Nathan, Mr. Harrook, and Christmas cards from Rev. S. Wilkinson; plants and palms from Dr. Manning and Mr. Justice Owen, pipes from Dr. Traill, and 10s. from Mrs. Brown.

Divine Service has been held regularly, and Mr. Lunn kindly presided at the harmonium at the Church of England services.

During the year a course of lectures was delivered to the nurses and attendants on "first aid"—bandaging, nursing, &c.—Dr. Miles and Dr. Henry co-operating with me in arranging and carrying out this task. The examinations, which were kindly conducted by Dr. Sinclair and Dr. McDouall, of Gladesville, showed that the members of the staff had profited by the instruction given.

A new dining room for nurses, and a storeroom at the cottages for female patients, were completed during the year, and the sorting room at the laundry was enlarged so as to facilitate the work which before was rendered difficult by the want of sufficient space. The refuse and coal shed in the female division has been removed to a more suitable position, and alterations have been made in the wards so as to enable the night nurse to exercise better supervision of the hospital and epileptic patients. A requisition has lately been forwarded for additions to the sewing room, which at present is far too small for the number of patients employed there.

The work of reclaiming the bay at the north-east boundary of the grounds has made fair progress, but is not yet completed. The road has not yet been started, and the Hospital grounds in that portion of the estate are quite open to the public, and unprotected.

A considerable amount of work was carried out during the winter at the cricket ground, which has been much improved and drained where necessary. The trees that line the avenue bordering the ground have been carefully pruned and the lower branches removed, and a pleasant shady walk has been made, which is a frequent resort for patients of both sexes.

The pressure in the water main has been very unsatisfactory, averaging during the day time only from 5 lb. to 8 lb., which in case of a fire would be quite useless. Steps have now been taken, under the supervision of the officers of the Water Supply and Sewerage Board, to increase the pressure by running a 6 in. pipe from the 15 in. main in Balmain-road in addition to the present branch that supplies the Hospital main.

In conclusion, I have to thank the Officers and Staff for the cordial and willing assistance I have received from them during the year.

I have, &c.,

HERBERT BLAXLAND,

Medical Superintendent.

TABLE I.

SHOWING the Admissions, Readmissions, Discharges, and Deaths, in the Hospital for the Insane, Callan Park, during the year 1893.

				Male.	Female.	Total.
In the Hospital on 31st December, 1892				445	367	812
				Male.	Female.	Total.
Admitted for the first time during the year				142	109	251
Readmitted during the year				25	19	44
Transferred during the year				1	2	3
Total under care during the year 1893				168	130	298
Total under care during the year 1893				613	497	1,110
Discharge or removal—						
Recovered				52	53	105
Relieved				7	7	14
Transferred				62	18	80
Escaped (and not recaptured)						
Died				50	24	74
Total discharged or died during the year 1893				171	102	273
Remaining				442	395	837
Average number resident during the year				443	366	809
* Persons under care during the year †				612	496	1,108
* Persons admitted				167	127	294
* Persons recovered				53	52	105

* Persons, i.e., separate persons in contradistinction to "cases" which may include the same individual more than once, minus readmission of patients discharged during the current year.

† Total cases,

TABLE

TABLE 2.

SHOWING the Admissions, Readmissions, Discharges, and Deaths, with the Mean Annual Mortality, and the proportion of Recoveries, &c., per cent. at the Hospital for the Insane, Callan Park, from the year 1879 to 1893 inclusive.

Year.	Admitted.			Transferred from other Hospitals.	Discharged.			Transferred to other Hospitals.	Escaped and not recaptured within 28 days.	Died.	Remaining in Hospital, 31st December.	Average number resident.	Percentage of recoveries on admissions and readmissions.			Percentage of Patients relieved on admissions and readmissions.			Percentage of Deaths on average numbers resident.						
	Admitted for the first time.		Readmitted.		Recovered.	Relieved.							Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.
	M.	F.				M.	F.																		
1879	10	16	54	54	1	2	2	3	3	1	107	107	56	6.25	12.5	12.5	1.78	1.78	1.78						
1880	57	62	2	5	18	2	2	5	5	12	129	129	120	33.33	3.70	3.70	10.00	10.00	10.00						
1881	43	43	8	2	26	4	4	2	1	9	140	140	136	50.00	7.34	7.34	0.62	0.62	0.62						
1882	43	43	3	2	20	6	6	3	3	73	140	144	144	43.47	13.04	13.04	9.02	9.02	9.02						
1883	30	30	2	3	12	2	2	3	3	14	160	160	148	37.50	6.23	6.23	9.45	9.45	9.45						
1884	56	56	1	1	102	13	13	2	6	115	261	273	168	22.80	3.50	3.50	8.92	8.92	8.92						
1885	100	85	245	7	67	72	53	23	31	4	320	320	296	34.73	26.43	31.88	10.34	9.79	9.08						
1886	108	116	282	4	74	75	34	106	7	6	548	548	520	29.35	29.31	37.00	4.11	5.17	4.54						
1887	06	82	177	8	6	41	45	86	2	8	338	338	334	30.80	50.00	44.55	1.93	6.06	4.14						
1888	150	102	252	14	8	81	48	129	7	18	572	572	529	42.28	40.38	42.47	6.70	6.19	6.49						
1889	118	04	212	13	2	5	57	66	113	2	643	643	610	43.51	52.13	47.68	1.52	3.77	2.11						
1890	135	102	237	7	7	45	60	101	11	5	727	727	683	43.82	50.00	40.07	7.74	4.54	6.34						
1891	130	06	226	0	14	65	61	126	3	8	822	822	785	46.07	57.65	51.63	2.16	7.34	4.54						
1892	141	92	233	8	1	56	40	105	7	14	947	947	915	46.07	57.65	51.63	4.09	6.30	5.38						
1893	142	109	251	25	1	2	52	53	105	7	1024	1024	969	41.40	35.69	4	16	5.46	4.72						

APPENDIX D.

The Medical Superintendent, Hospital for the Insane, Newcastle, to the Inspector-General of the Insane.

Sir,

Hospital for the Insane, Newcastle, 20 February, 1894.

I have the honor to forward for your information a report on this Hospital for the year 1893, together with the usual statistical tables.

At the beginning of the year there were in the Hospital 146 males and 117 females—a total of 263. The admissions numbered 67, of whom 43 were females; of these, 15 males and 7 females were received direct, the remainder having been transferred from the other Hospitals for the Insane. The total number under care during the year was 330, with an average resident number of 282. The discharges were 4 males and 2 females relieved, and 5 females transferred. During the year 3 males and 2 females were absent on trial, 1 of whom was discharged and 1 died whilst on leave, and 2 were returned to Hospital, leaving 1 absent at the close of the year. Of the deaths (24 in all), 13 were males and 11 females. At the end of the year there remained 153 males and 142 females—a total of 295.

The number of admissions for the year show 26 more than for 1892, and is the largest since the opening of the Institution in 1871. The death-rate was higher than usual, 8.51 per cent. The general health of the inmates was good, and although the town and district suffered severely from epidemic measles, the disease did not reach the Hospital. One accident, an intra-capsular fracture of the neck of the femur, in a male patient, was reported to you at the time of its occurrence.

The comfort of the patients has been materially added to during the year, by ventilation of all the dormitories and by the reorganisation of several wards. The wing for female nursery patients, opened early in the year, has been a success in every way. It is spacious, well lighted and well ventilated, and very comfortable in all weathers. The building being detached prevents the children from seeing the older and more degraded patients, from whom bad habits and objectionable gestures, so common in this class of patients, might be contracted. The dormitory of the male nursery has been improved by a system of hammocks, which, when "stowed," allow of the room, in which there is a guarded stove, to be used as a day-room in cold and inclement weather. The cricket paddock has been levelled and made available for the male patients, numbers of whom get the utmost enjoyment from its use. For some years the rain-water from the roofs has been unused; but it was found that the district water was so destructive to clothing and expensive as regards soap and soda, that a pump was placed near the steam boilers, which gives the laundry a copious supply of soft water from underground tanks. The buildings generally are in excellent repair, and can comfortably accommodate a maximum of 300 patients. A carpenter's shop, a timber-room, and a painter's shop have been improvised in the basement of the east end of the female nursery ward, and are cool, commodious, and well lighted. The vegetable garden has been reorganised by doing away with unnecessary paths and asphalted the remaining ones. For many years difficulties have arisen through defective drains; these have been put in order, and a plan made of their situation and direction. During the month of March a gale of unusual severity visited the district, doing a great deal of damage to the garden and grounds, and disturbing the slates on many of the roofs. Several handsome pines were blown down and a galvanised iron fence on the south side of the vegetable garden completely demolished. In place of it has been erected, on a substantial rubble wall, a suitable picket fence. Perhaps, however, the most important and desirable improvement of the year has been the erection of a screen by the Government Architect's Department along the western boundary of the Hospital, which effectually hides the inmates from the public gaze.

The

The recreation hall, as in past years, has been of much service, and the number of entertainments large, for which I am indebted to the Dan Tracey Dramatic Company and kind amateur friends. On two occasions the patients had the uncommon treat of a monster picnic—one at Tomago, on the river, by Mr. Walton, who provided a steamer and grounds; and one by some friends to The Ridge, on the grounds of Mr. Merewether, who otherwise assisted to make the day a happy one. The religious services have been well attended and regularly held.

The proportion of patients usefully employed continues reasonably large, and interesting work in the form of mat and mattress making has been found for the younger and more intelligent male patients.

The yield of vegetables, notwithstanding a dry spring and summer, has been large and varied, and sufficient for general use and for the special diet of the epileptic patients.

Instead of the customary Christmas tree, a sports-day was held, the prizes being mainly given by Mr. C. Nettheim of Sydney, who in previous years assisted by a present of toys, &c.

The accompanying table gives evidence of the various deficiencies, other than mental, to be met with among the inmates, together with the number of epileptics, and is of interest, as showing to what physical blemishes this class of patient is liable. Under "deformed" are classified all those having deformities on any part of the body, including redundant organs, webbing of fingers and toes, &c., and the "crippled" are practically bed-ridden. It will be seen that more than one-third are epileptic, about one-fifth are dumb, rather less than one-eighth deformed, one-fourteenth bed-ridden, whilst a small proportion are deaf or blind.

Total number of Patients in Hospital, 31 Dec., 1893.		Epileptic.		Dumb.		Deaf.		Blind.		Deformed.		Crippled.	
Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
153	142	50	49	40	16	9	1	2	2	20	13	8	13
Percentages		32·68	34·50	26·14	11·26	5·88	·70	1·30	1·40	13·07	9·15	5·23	9·15
Total percentage...		33·55		18·98		3·39		1·35		11·11		7·11	

I am glad, as before, to be able to record my appreciation of the special help rendered by the officers, and the loyal co-operation of the staff generally in the work of the Institution.

I have, &c.,

CHISHOLM ROSS,

Medical Superintendent.

TABLE I.

SHOWING the Admissions, Readmissions, Discharges, and Deaths, in the Hospital for the Insane, Newcastle, during the year 1893.

	Male.	Female.	Total.
In Hospital on 31st December, 1892	146	117	263
Admitted for the first time during the year	15	7	22
Readmitted during the year	9	36	45
Transferred during the year			
Total under care during 1893	170	160	330
Discharge or removal—			
Recovered	4	2	6
Relieved	5	5	5
Transferred	13	11	24
Escaped (and not recaptured)			
Died			
Total discharged or died during the year 1893	17	18	35
Remaining	153	142	295
Average number resident during the year	150	132	282
*Persons under care during the year†	170	160	330
*Persons admitted	24	43	67
*Persons recovered			

* Persons, i.e., separate persons in contradistinction to "cases," which may include the same individual more than once minus readmission of patients discharged during the current year.

† Total cases.

TABLE 2.

SHOWING the Admissions, Discharges, and Deaths, with the Mean Annual Mortality, and the proportion of Recoveries, &c., per cent., at the Hospital for the Insane, Newcastle, during the years 1871 to 1893, inclusive.

Year.	Admitted			Transferred from other Hospitals &c.	Discharged			Transferred to other Hospitals, &c.	Escaped and not recaptured within 28 days.	Died.	Remaining in Hospital 31 December in each year.	Average number resident	Percentage of recoveries on admissions and readmissions.			Percentage of patients relieved on admissions and readmissions.			Percentage of deaths on the average number resident											
	Admitted for the first time		Re-admitted.		Re-covered.		Re-lieved.						M.		F.		Total		M.		F.		Total		M.		F.		Total	
	M.	F.	Total		M.	F.	Total						M.	F.	Total	M.	F.	Total	M.	F.	Total	M.	F.	Total	M.	F.	Total	M.	F.	Total
1871				38	25	113				1																				
1872				32	11	43			1																					
1873	Totals admitted.			11	1	12																								
1874				26	18	44	2	2																						
1875				25	9	34		2	2	1	1	2																		
1876	7	1	8																											
1877	1	3	4	1																										
1878	3	1	4																											
1879	5	1	6																											
1880	5	3	8																											
1881	3	1	4																											
1882	11	4	15																											
1883	13	5	18																											
1884	2	6	8																											
1885	6	8	14	1	1	2	5	7																						
1886	7	10	17	1	1	5	3	8																						
1887	10	4	14	1	2	3	2	4																						
1888	10	7	17																											
1889	5	6	11	1	1	9	3	12																						
1890	7	5	12																											
1891	9	7	16																											
1892	20	13	33	1	2	3	4	1	5																					
1893	15	7	22																											

APPENDIX E.

The Medical Superintendent, Hospital for the Insane, Rydalmere, to the Inspector-General of the Insane. Sir,

I do myself the honor to submit for your information a report upon this Hospital for the year 1893, together with the usual statistical tables for the same period.

No accommodation having yet been provided for females, the Hospital contains patients of the male sex only.

There were 225 patients in the Hospital on 31st December, 1892. During the year 72 were transferred from other Institutions, making a total under care of 297. The average number resident was 254. There were discharged—1 patient relieved and 2 transferred to other Hospitals,—and 23 died. At the close of the year there remained 272 patients in Hospital. The death-rate was 8.66 per cent. on the average number resident. This is somewhat higher than usual, and is attributable to the large proportion of feeble and aged patients in the Institution. The general health has been satisfactory, and there was no epidemic of any kind. There have been few serious accidents, limited to simple fractures of the femur, tibia, and radius. In each case a report, at the time of the occurrence, was forwarded to you. There have been no attempts at suicide, and escapes have been singularly few, though much latitude is allowed many of the patients in respect to their movements about the grounds. There has not been a single instance—and this for the second year—of restraint or seclusion. The dietary has been made as varied as possible, and the fruit grown in the garden has been largely made use of for stewing and jam-making purposes. An abundant supply of vegetables has been maintained throughout the year, and not a day has passed without at least two kinds being prepared for dinner. The whole of the milk consumed has again been obtained from cows kept on the Hospital Estate—a very distinct advantage. It is my pleasing duty to record that no expense whatever has been incurred—for the second year—for alcoholic stimulants, and their absence does not seem to me to be in any way a disadvantage. To the class of patients under care here they do not seem necessary, and it can safely be said that the Institution generally gets on as well, if not better, without them. Strict economy in expenditure has been exercised in every direction, and the cost for maintenance has been exceptionally low.

The training of the attendants, for which I have ever been a warm advocate, has been thoroughly carried out during the year. Lectures and demonstrations have been regularly given, and much interest has been shown in the work. I am satisfied that the system now adopted of practical instruction has already been of marked benefit, and the desire evinced by the attendants to obtain a more accurate knowledge of the duties connected with the nursing and care of the insane is very noticeable.

Numerous additions and improvements have been carried out during the year. An attractive looking and commodious cottage has been erected under the Government Architect's supervision for the

use of the present female staff. This was much needed as their previous quarters were within the building occupied by male patients. A copper, with washing tubs, &c., have been supplied in the new shed attached to the laundry, and a useful annexe made to the cottage occupied by the clerk and storekeeper. A quantity of canvas hose and other appliances for fire extinguishing purposes has been obtained. Hoods have been fixed over all the windows of the Hospital on the weather side as a protection in bad weather, and a considerable amount of new fencing carried out.

Much useful work has been accomplished by the staff and patients in the way of draining, trenching, planting, and general cultivation. The entire vegetable garden, as also portion of that devoted to flowers have been thoroughly drained, the stone for the same being obtained from the quarries on the estate. The road in front of the main building has been entirely laid down and formed, a large area of land has been cultivated in the vegetable garden, and an attempt made to grow at least portion of the potatoes used in the Hospital. The airing courts of No. 3 Ward have been laid out, and the tar-painted paths, grass beds, trees and flowers, give the whole place a decidedly cheerful and orderly appearance.

Much planting and levelling has been done in various portions of the grounds, and avenues of trees for shade and general effect have been made in several directions. The airing courts of Nos. 1, 2, and the Hospital wards are now in excellent order, and the flowers, trees, &c., afford pleasure and interest to those patients who are unable to work, as well as occupation to those whose peculiarities prevent their employment elsewhere. The ward opened some twelve months since for the exclusive use of epileptics has worked smoothly, and the arrangements thereof generally have given satisfaction. For various reasons it is found more convenient to locate all the epileptic patients within one ward, where attendants soon gain special insight into individual peculiarities, and supervision is in consequence closer and often preventive of excitement and its results.

The Hospital buildings have been kept in good order throughout the year. A considerable amount of colouring and painting has been done to dormitories and day-rooms, and the walls of the latter have been considerably improved by the hanging of pictures, &c. The trees, shrubs, &c., planted last season have done remarkably well, and already the grounds have a different appearance in consequence. The orchard and vineyard are thriving well, and next season there should be a large addition to the fruit supply.

The contract for the erection of various buildings connected with the proposed female division has been let, and a commencement is now being made with the work. The new wharf on the river bank is also under construction and will be a great acquisition when finished. I hope during the current year that a boathouse for the shelter of the boats, which suffer from exposure may be provided. The need of a porch over the main front entrance is much felt. The rain beats in freely, and in the wet season the entrance hall is very uncomfortable. Cottages for the use of the chief attendant and for a resident gardener are also required, as is also some enlargement of the quarters occupied by the night attendant, where room should be provided for at least two men engaged on this duty.

With such a large number of epileptic, feeble, and aged patients but little can be done by way of amusement involving active exertion. Occasional games of cricket, boating parties, visits to the theatre or circus have been indulged in, and a good supply of newspapers—illustrated and otherwise, playing cards, &c., has been kept up.

To the officers and staff many thanks are due for their hearty co-operation in carrying out the work of the hospital during the year.

I have, &c.,

W. COTTER WILLIAMSON,
Medical Superintendent.

TABLE 1.

SHOWING the Admissions, Readmissions, Discharges, and Deaths, in the Hospital for the Insane, Rydalmere, during the year 1893.

	Male.	Female.	Total.
In Hospital on 31st December, 1892	225	.....	225
	Male.	Female.	Total.
Admitted for the first time during the year .....	.....	.....	.....
Readmitted during the year .....	.....	.....	.....
Transferred during the year	72	.....	72
Total under care during the year 1893	297	.....	297
	Male.	Female.	Total.
Discharge or removal—			
Recovered .....	.....	.....	.....
Relieved	1	.....	1
Transferred	2	.....	2
Escaped (and not recaptured) .....	.....	.....	.....
Died	22	.....	22
Total discharged or died during the year 1893	25	.....	25
Remaining	272	.....	272
Average number resident during the year	254	.....	254
*Persons under care during the year	297	.....	297
*Persons admitted .....	.....	.....	.....
*Persons recovered .....	.....	.....	.....

* Persons, i.e. separate persons in contradistinction to "cases" which may include the same individual more than once. † Total cases minus readmission of patients discharged during the current year.

TABLE

TABLE 2.

Showing the Admissions, Readmissions, Discharges, and Deaths, with the Mean Annual Mortality, and the proportion of Recoveries, &c., per cent., at the Hospital for the Insane, Rydalmere, for the years 1892 and 1893.

Year.	Admitted.				Transferred from other Hospitals, &c.			Discharged.				Transferred to other Hospitals &c.			Escaped and not recaptured within 28 days.			Died.		Remaining in Hospital, 31st December in each year.			Average number resident.			Percentage of recoveries on admissions and re-admissions.			Percentage of patients relieved on admissions and re-admissions.			Percentage of deaths on average number resident.						
	For the first time.		Readmitted.		M.		F.	Total.		Recovered.		Relieved.		M.		F.	Total.		M.		F.	Total.		M.		F.	Total.		M.		F.	Total.		M.		F.	Total.	
	M.	F.	M.	F.	M.	F.	Total.	M.	F.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.					
1892	90	...	90	3	...	3	...	5	...	5	9	...	9	225	...	225	139	...	139	...	188	4.78	...	4.78		
1893	72	...	72	1	...	1	2	...	2	...	23	...	23	272	...	272	254	...	254	...	254	0.38	...	0.38	8.66	...	8.66	

APPENDIX F.

The Medical Superintendent, Hospital for the Criminal Insane, Parramatta, to The Inspector-General of the Insane.

Sir, Hospital for the Criminal Insane, Parramatta, 17 February, 1894.
I do myself the honor to forward herewith a report upon this Hospital for the year 1893, together with the usual statistical tables.

By reference to the latter, it will be seen that both the number admitted and the number remaining in Hospital at the end of the year were less than in 1892, this being accounted for by the fact that prisoners serving long sentences are now detained in the observation wards of Darlinghurst and Parramatta Gaols instead of being sent on to Hospital.

The number of patients in the institution on the 31st of December, 1892, was 57 (48 men and 9 women). During the year 9 men and 2 women were admitted, making a total of 68 (57 men and 11 women), under care and treatment during the twelve months. Of these 3 men were discharged recovered. Eleven men and 2 women were transferred to the free division on the expiration of their sentences, and for other reasons, and 2 men and 1 woman died, leaving a total of 49 (41 men and 8 women) in the Hospital on the last day of the year, being a decrease of 8 as compared with the corresponding date of 1892.

The customary tables, giving the mortality, per centage of recoveries, &c., &c., are appended.

The daily life of the occupants of this part of the Hospital has been particularly uneventful, no accident and no epidemic disease having occurred. As usual the great majority have been usefully occupied at some or other of the various works carried on under the supervision of the attendants and other members of the staff, but principally in cultivating and growing vegetables, and in sawing and splitting wood in the yard specially set apart for them. Several who could not be safely trusted at this kind of work remain in the wards, and find plenty of employment in teasing coir and horse-hair, which are used in the matting-room; and some few are engaged in the necessary cleaning of wards and other domestic duties.

During the year the alterations and repairs so urgently needed to this part of the institution have been completed, and, as anticipated, have proved of great benefit and convenience.

I have, &c.,

E. GODSON,
Medical Superintendent.

TABLE showing the Classification of the Crimes of Patients admitted into the Hospital for the Criminal Insane, Parramatta, during the year 1893.

Crimes.	Classified with reference to the period at which insanity was recognized.																	
	Total number admitted during the year 1893.			Certified to be insane whilst awaiting trial.			Found insane by Jury on arraignment.			Acquitted on the ground of insanity.			Reproved on the ground of insanity.			Certified to be insane whilst undergoing sentences of penal servitude.		
	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.
Murder	...	2	2	...	1	1	...	...	...	...	1	1	...	...	...	...	...	...
Cutting, wounding, and shooting with intent, &c.	1	...	1	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...
Indecent assault	1	...	1	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...
Vagrancy	2	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Larceny	1	...	1	...	...	...	...	...	...	1	...	1	...	...	...	...	...	2
Indecent exposure	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Unlawful assault	2	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
Inflicting grievous bodily harm	1	...	1	...	...	...	...	...	...	1	...	1	...	...	...	...	...	2
Total	9	2	11	...	1	1	2	...	2	2	1	3	...	...	...	...	5	5

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

BRUSH FARM, PARRAMATTA RIVER.

(LEASING OF.)

Ordered by the Legislative Assembly to be printed, 5 June, 1894.

RETURN to an *Order* made by the Honorable the Legislative Assembly of New South Wales, dated 19th April, 1894, That there be laid upon the Table of this House,—

“Copies of all papers in connection with the leasing of Brush Farm, Parramatta River, by the Government.”

(*Mr. Darnley.*)

Minute by the Principal Under Secretary.

20 November, 1893.

Subject :—Proposed Site for Boys' Reformatory at Brush Farm.

It is suggested, with a view to facilitating the establishment of a Boys' Reformatory, that the Director of Government Asylums be instructed to proceed to Brush Farm and report upon that locality as a site for the institution before any action is taken to lease the premises. I shall be glad if the Chief Secretary will kindly consider this suggestion, and instruct me accordingly.

C.W.; P.U.S.

Approved.—G.R.D., 20/11/93. The Director of the Government Asylums, B.C., 20/11/93.—C.W., P.U.S. Report herewith.—S.M., 28/11/93. The Principal Under Secretary.

The Director of the Government Asylums to The Principal Under Secretary.

Proposed Reformatory for Boys.—Report on the Brush Farm Estate.

Sir, Charitable Institutions Office, Paddington, 28 November, 1893.

In compliance with the Chief Secretary's direction, I have the honor to submit the following report on the suitability of Brush Farm as a site for a Boys' Reformatory :—

Locality, area, &c.

Brush Farm is situated in the Municipality of Dundas, 13 miles from Sydney, on the Great Northern Railway Line, the nearest point of communication being the Eastwood Railway Station, which is about 1 mile distant. The tinted sketch* on the accompanying plan accurately outlines the general contour of the estate. The principal boundary is the main road to Parramatta, which town lies 4 miles south-west. The farm is thus easily and conveniently accessible from several directions, and the locality is probably one of the healthiest in the Colony. Its altitude is about 400 feet above sea level, and the natural facilities for drainage are such that perfect sanitation can be secured without difficulty, and with a very trifling expenditure indeed.

The whole estate covers a surface area of about 60 acres, more or less, at least two-thirds of which are already under cultivation as an orangery and general orchard. All the trees appear to have been well selected, properly classified, and carefully tended; the orchard and grounds are, on the whole, in very good order, and I am informed that the total pecuniary return from fruit and vegetables in an ordinary good year has exceeded £500 per annum, but this return does not take into consideration the cost of labour in working the estate. I have merely referred to this aspect of the question here in order to

320—A

show

show that if it is determined to establish a Reformatory at Brush Farm it may be taken for granted that the monetary returns from the sale of fruit, vegetables, and general produce will prove a large source of revenue, and the inmates' labour can be so utilised as to reduce the actual cost to the State under this heading to a comparative trifle. Such returns might also fairly be taken as a set-off against the rent-charge, if it is decided to secure the property on lease, or against interest on a loan vote, if it be determined to purchase it outright. I have not considered it necessary, however, to enter into this matter more fully, as it does not really come within the scope of my instructions; and the Chief Secretary has himself so recently inspected the estate that he is the best judge of what should be done in the interest of the Government in this particular.

Buildings.

* Appendix B.

The whole of the buildings on the estate, which are clearly set out in the accompanying plan,* can be utilised for reformatory purposes, with slight and comparatively inexpensive alterations. An expenditure of from £200 to £250 will probably be sufficient to do all that is necessary to renovate the buildings and make them immediately available for such an institution, but this estimate does not include the larger question of providing an adequate water supply, which I have briefly dealt with under a separate heading. The buildings are so arranged as to admit of the necessary classification of inmates in the dormitories and day-rooms; and judging from the statistics relating to juvenile offenders, which I obtained when previously dealing with the question of a Boys' Reformatory, I am of opinion that, with some slight additions, accommodation can be found for all the lads who are likely to be committed under the "Reformatory Schools Act" in this Colony for some years to come. If the method of dealing with lads which I have previously recommended be adopted,—*viz.*, to apprentice them as a rule after they have been subjected to twelve months' discipline and instruction on the farm,—I do not think their average number is likely to exceed from sixty to seventy, and ample accommodation can be provided to meet this demand at a very small outlay. Exclusive of the rooms which it will be necessary to set apart for the local administrative staff, accommodation can be immediately found for from forty to fifty boys.

I may mention that the Rydalmere Home for Boys, at present leased by the Government at a rental of £125 a year, is distant about 1 mile from Brush Farm. Under the conditions of the lease (which terminates in about eight months, and will not be renewed) two detached weatherboard buildings can be removed to Brush Farm, and utilised either for workshops, additional dormitories, or day-rooms. It may not be out of place here to suggest that if the Chief Secretary decide to secure Brush Farm, the question of whether it should be leased or purchased might be considered in conjunction with the proposal not to renew the lease of the Rydalmere Home, as that event would effect a saving of the existing rent charge of £125 a year.

The main building at Brush Farm, which is marked "A" on the plan, is substantially built of stone, and contains nineteen rooms, in addition to dry, well-drained cellars in the basement (which can be used as store rooms). The dwelling rooms, the majority of which are exceptionally large, are arranged on the first and second floors, with verandah and balcony. Their dimensions are set out in detail on the plans, for the information of the Chief Secretary. This division can be used for the principal dormitories and day rooms, for Superintendent's quarters, and for other administrative purposes. It will be necessary to improve the ventilation, and also to afford access by a flight of steps to the room on the first floor (marked 25 x 16 on the plan) which has never yet been opened, and to place a door and two windows in it. It will also be necessary to provide two large cooking ranges and two coppers in the kitchen, which is 25 x 16'6", and contains at present only one small stove. By making use of the available labour of the Department, all these additions and alterations should not cost more than from £75 to £100.

About 4 chains distant from the main building is a substantial brick stable (marked "C" on the sketch), on the ground floor of which, by breaking away divisions, one apartment 57 x 15 feet can be secured for a general dining-room, while three lofts on the first floor can be converted by the same means into a dormitory for one class of boys, with an overlooking room for the night officer, if necessary. At the rear of and attached to the stables are a coach house 16 x 18, and cow bails, &c., the former of which may be used as at present; but it would be necessary to remove the cow bails to a more remote site. The stables should be newly floored and otherwise improved, and the upper story will need slight alterations and improved ventilation, but any interior changes that may be found necessary can be carried out with institution labour, which would confine the principal outlay to the purchase of material, and the total cost would, therefore, probably not exceed £25.

It will be necessary to provide a special division in which to confine some of the lads temporarily after their committal until they are made amenable to discipline, and their classification is determined upon. A room, 16 x 14, about 80 feet distant from the main building (marked "D," brick loose box, on the plan) can be devoted to this purpose. It can be converted into cells, and enclosed by either an open picket fence (barred outside to prevent the lads from climbing) or by a close galvanized iron fence (say) 10 to 12 feet high, in order that the boys should not escape while undergoing probationary confinement. This punishment division cannot be attractively described; but it is an indispensable reformatory adjunct. Under an able superintendent, however, possessing the necessary tact and discretion to deal successfully with juvenile offenders, it need not be largely resorted to; but the boys would know of its existence, and the moral effects would be good. An expenditure of about £75 will be probably sufficient to carry out the necessary alterations here, the cost of fencing being the principal item.

On the south-western corner there is a substantial weatherboard cottage (marked "B" on the plan). It contains four rooms and kitchen, and can be used as quarters, either for the matron, or assistant superintendent and schoolmaster, or for some other purpose to be determined upon. At the rear of this building there is a very good stable.

A four-roomed weatherboard cottage (marked "E") on the north-eastern corner of the estate, can be used as the out-door overseer and gardener's quarters. It is in a fair condition, and needs only some slight improvements and alterations, which can be effected by institution labour.

Water Supply.

This will be a somewhat large question to deal with ultimately, and it should be allowed to stand over until the actual needs of the institution are ascertained. At present all the underground and overhead tanks on the premises have a total storage capacity of about 100,000 gallons. A much more extensive supply will of course have to be provided eventually, if it is ultimately decided to secure the estate permanently

permanently for reformatory purposes. In the meantime, a sufficient number of galvanized iron tanks can be provided to meet the requirements of the institution. A sufficient water supply is of primo importance, because the successful administration of the farm and orchard will largely depend on the application of a thorough system of irrigation; and fruit culture, dairy, and general farming will be the main industries in which the boys will be instructed. The permanent water supply can be procured from two sources—either by constructing a local reservoir, for which there are great natural advantages, or by a connection with the Sydney water supply main at Ryde, about a mile distant. A 3-inch pipe, which would probably be laid by the Water and Sewerage Board for about £400, would be amply sufficient for all purposes, but the expenses under this head would be further increased by the cost of reticulation; in all probability another £150 would be required for this purpose. It would be necessary, however, to obtain a competent professional opinion on this particular point; and I would, therefore, suggest that the Government Architect be invited to report upon the matter at his convenience.

General Remarks.

It will be seen from the foregoing brief descriptions that Brush Farm and the buildings already upon it can, with a comparatively small expenditure, be made quite suitable for a temporary Reformatory for Boys. I do not consider it necessary to again submit, in connection with this report, the details of a reformatory scheme. The Chief Secretary has already had these under consideration, and has, I understand, generally approved of them in connection with my previous reports upon the Rookwood and Shaftesbury buildings, and my visit of inspection to the Ballarat Reformatory in Victoria.

All those details can be applied in establishing and organising a Boys' Reformatory on the Brush Farm Estate. My present direction is merely to report as to the suitability of the site, and I have not, therefore, presumed to enter into negotiations with the owner of the estate, who intends, I understand, to make his proposals, of which I have not any knowledge whatever, directly to the Government, as to terms of rental or ultimate purchase, if one or both courses be decided upon. The total value of the estate, which is undoubtedly large, can, however, easily be determined by the regular income now realised from the orchard, by the buildings upon it, by its area and the quality of the land, by its convenient and healthy locality, and by the advantages it possesses for instruction in the industrial occupations necessary for boys of the reformatory class, which can really be made a source of income, if not of profit, to the Department, as well as a means of securing good reformatory results. The whole success of the experiment will, of course, depend upon the thorough competency of the officials who may be appointed to manage the institution, and, this being admitted, I would respectfully suggest that none but well tested and experienced persons be selected, especially at the outset, to fill the important positions which will constitute an effective reformatory staff.

At Newington Asylum, in connection with which the privilege of selecting all the officials, with one exception, was granted to me (subject to the approval of the Chief Secretary), a model establishment of its kind has been created, because the local management has been satisfactory, while under opposite conditions failure has resulted in other directions. If a Boys' Reformatory is to be established, and my Department is to be made responsible for its success or failure, I would beg that the same concession be granted as at Newington, and I would further suggest that all officers be appointed on probation until their capacity is tested.

These are points of detail, however, which have been fully dealt with in previous reports, and I merely incidentally refer to them here in order that they may not be lost sight of.

Awaiting your further instructions,

I have, &c.,
SYDNEY MAXTED,
Director of Asylums, &c.

Enquire from owner the rental upon a ten years' lease, subject to resumption at any time during the lease, under the Lands Resumption Act, or upon terms to be mutually agreed. Any improvements the Government may make not to be counted in any valuation that would be made.—G.R.D.

The Principal Under Secretary to Mr. J. Bennett.

Sir,

Chief Secretary's Office, Sydney, 28 December, 1893.

With reference to the proposal to establish a Boys' Reformatory on the Brush Farm Estate, I am directed by the Chief Secretary to inquire what rental you would be prepared to accept upon a ten years lease, subject to resumption at any time during that period under the Lands Resumption Act, or on terms to be mutually agreed upon.

2. I am at the same time desired to add that it must be distinctly understood that any improvements the Government may make, are not to be counted in any valuation that may be made.

I have, &c.,
CRITCHETT WALKER,
Principal Under Secretary.

Mr. J. Bennett to The Principal Under Secretary.

Sir,

Brush Farm, Dundas, 3 January, 1894.

Replying to your letter of the 28th ultimo, inquiring what rental I would accept for a ten years lease of Brush Farm subject to resumption, I beg to state that I will accept £500 per annum upon the conditions set out in your letter.

The minor improvements and repairs to the present buildings and in maintaining the orchard I shall expect to be taken into consideration in any valuation, as every lease usually requires the tenant to maintain and repair, but new buildings erected by the Government I agree shall not be valued against them. The lease to contain all usual clauses, and to be agreed upon and settled by the Crown Solicitor and my solicitor who will submit the usual draft.

I have, &c.,
JOHN BENNETT.
Submitted

Submitted for approval.—C.W., 5/1/94. The Rookwood buildings originally intended as a Boy's Reformatory having been given up to the aged and infirm, and an establishment for a Boys' Reformatory being required, and after a careful examination of this property, I approve of a lease of ten years of Brush Farm at £500 per annum for a Boys' Reformatory, possession to be given to the Government on 1st March next, lease to be prepared upon basis of this letter and the Under Secretary's of 28th December.—G.R.D., 20/1/94.

The Principal Under Secretary to Mr. J. Bennett.

Sir,

Chief Secretary's Office, Sydney, 23 January, 1894.

Referring to your letter of the 3rd instant, I am directed to state that the Chief Secretary has approved of your property, known as "Brush Farm," being leased by the Government for a term of ten years, for a Boys' Reformatory, at an annual rental of £500, upon the conditions set forth in your communication now under acknowledgment and mine of the 28th December last. Possession of the estate to be given to the Government on the 1st March next.

I have, &c.,

CRITCHETT WALKER,

Principal Under Secretary.

Memorandum by The Director of the Government Asylums to The Principal Under Secretary.

Proposed Boys' Reformatory (30 Vic. No. 4).

FULL details of the Reformatory scheme have been submitted to the Chief Secretary in the following documents, namely:—Memorandum, dated December 1, 1891; letter, dated December 4, 1891; Report, dated December 9, 1891; and Report on Brush Farm, dated November 28, 1893. [Documents herewith.]

These letters, reports, &c., relate to several existing sites and buildings; but as it has been determined to utilise Brush Farm for a Boys' Reformatory, it is only necessary to refer here to that estate, to which, however, may be applied all the recommendations made in connection with the other proposals.

The Reformatory is required for training lads under 16 years of age committed through the Courts for criminal offences, and who are now usually sent to the gaols.

These lads are at the outset a most difficult class of offenders to deal with, and under the Act they may be detained for any period not exceeding five years. Experience elsewhere, however, has shown that the detention period seldom need exceed nine to twelve months, when the boys are generally sufficiently disciplined to be apprenticed out; and thus the daily average number of inmates, when the Institution is in full operation, will probably never be more than seventy-five to eighty.

The success of the new reformatory system will depend almost wholly upon the proper classification, treatment, and instruction of the boys, and the selection of competent experienced officers to deal with them.

With regard to the first point, I beg to draw attention to the memo. dated 1st December, 1891, which briefly explains the methods to be adopted. It is of course, obvious that if a number of criminal boys were taken from the Courts and at once placed in an institution from which they could escape they would run off immediately. The usual provision against this is suggested in the full report on Brush Farm dated 28th November, 1893.

As fruit-growing and agriculture will be the principal industries taught at Brush Farm, the suggestions made in the memo. as to teaching other trades may be modified. I may here mention that it is usual for attendants upon the boys to be qualified to instruct them in the industrial occupations.

I have fully explained in the main report on Brush Farm how the buildings now on the land can, at very little cost, be reconstructed as required for classification purposes, and this work should be at once proceeded with, as until it is completed the reformatory cannot be proclaimed. Asylum labour can be largely availed of in carrying it out.

In the meantime, however, the estate may be dealt with so as to reduce the rent charge and bring it into harmony with the general scheme.

Near to Brush Farm there is an establishment, known as the Rydalmere Boys' Home, rented from the Bank of New South Wales at a charge of £125 per annum. The lease will terminate in about five months, and I do not recommend its renewal. The inmates of this home, of whom there are forty-one, are largely boys who were found to be too vicious to be kept in ordinary homes. They can be transferred to a separate division at Brush Farm, and several large wooden buildings, closets, urinals, &c., which the Government has power to remove from the Rydalmere Home in terms of the lease, might be pulled down at once and re-erected at Brush Farm.

In order also that the Brush Farm orchard may be made as profitable as possible, I purpose, under approval, transferring to it a number of the more able-bodied men from the Government Asylums, who, together with a number of the Rydalmere boys, can work it under competent instruction. As it is intended that their labour shall be a source of profit, they should be paid monthly small daily bonuses subject to good behaviour.

For the purpose of carrying out the foregoing proposals, it will be necessary to at once appoint the following officials:—

1. Man thoroughly qualified to instruct the boys in orchard work and agriculture and see that the produce is properly marketed.
2. Working matron to attend to the domestic comforts of the inmates and cleanliness of the institution. (I beg to suggest that the Rydalmere Home matron, who is very competent, be taken over with her boys. She has had three years' experience).

3. Man able to look after the place in the instructor's absence, superintend and work at alterations to buildings and keep them in repair, take charge of stores, distribute rations, &c. (I am informed that a competent officer, a Mr. Dixon, who has already waited upon the Chief Secretary, is available for this purpose from another Department, whence he desires a transfer).

It will thus be seen that only one officer, not already in the public service is recommended, and, in order to save expense, any other prime positions need not be filled until the buildings are ready to be proclaimed for the reception of young criminals.

I respectfully await your further instructions.

S. MAXTED,
21/2/94.

The lease having now been signed, Mr. Maxted might be instructed to take over the premises and make proper arrangement for the care of the garden and buildings pending further steps being taken for their utilization for reformatory purposes.—C.W., 2/4/94. Approved, G.R.D., 3/4/94. The Director of the Government Asylums.—B.C., 3/4/94. C.W., P.U.S. Inform Mr. Bennett.

Under the approval minuted on these papers I have employed Mr. Small to take charge of the orchard, work it, and arrange for the packing, despatch, &c., of the fruit and other produce to market. I have also employed the Mr. Dixon herein referred to, to carry out indispensable alterations to the buildings, &c., mainly with institution labour, as recommended, and a number of old men from the asylums and boys from Rydalmere Farm are already employed on the estate. When the alterations are effected the Rydalmere Boys' Home can be given up, and a rental of £125 a year thus saved to the Government, as the inmates may be transferred to Brush Farm.—S.M., 10/4/94. The Principal Under Secretary.

[Enclosures to Memorandum dated 21/2/94.]

Sir, Charitable Institutions Office, Oxford-street, Paddington, 1 December, 1891.

In compliance with the instructions of the Colonial Secretary, I have the honor to forward for his information a memorandum containing an outline of a scheme for establishing and managing a Shore Reformatory for Boys in this Colony.

I have, &c,
SYDNEY MAXTED,
Director of Asylums, &c.

The Principal Under Secretary.

Shore Reformatory for Boys.

Charitable Institutions Office, Oxford-street, Paddington, 1 December, 1891.

THE boys are managed under a system of rewards and punishments by which corporal chastisement is almost avoided.

For this purpose it is necessary to divide the institution into three distinct divisions, namely:—“A,” “B,” “C,” each having a separate lavatory, dining-room, bath-room, and dormitory.

“C” is the lowest division, and it is practically a prison. It is enclosed by a high galvanised iron fence, and contains, in addition to the usual provisions, cells for refractory boys. All the windows are barred. There are no bedsteads, the beds being made on the floor. The food is also rough, and the only opportunity for recreation is in an enclosed, unattractive yard, about 60 feet square. This is the only division from which the boys cannot escape.

“B” is the next division to which a boy is transferred as soon as his conduct justifies that step. There are here bedsteads, but no pictures on the walls, and the furniture is very meagre. The food is also better than in “C,” and the boy has here first practically realised that it is good policy to behave himself, with the prospect of further advancement, which is fully explained to him.

“A” is the highest division, and it is made as bright and attractive as possible. The food is excellent, the dormitories and other apartments are very cheerful, the walls are covered with pictures, and the boys are so trusted that, in conjunction with their transfer from the lower grades, their self-respect is in a measure restored, and they are in many ways encouraged to merit the full liberty and concessions which can be granted to them under the system.

In a yard adjoining these three divisions, which constitute the main building, are placed workshops, at which boys in “A” and “B” divisions are taught trades—such as boot-making, tailoring, carpentering, painting, &c, and adjacent to it are the general recreation ground, vegetable garden, and farm. All these places are merely enclosed by three-railed fences, the only closed part, as stated, being the recreation ground belonging to “C” division.

There are two buildings detached from the boys' divisions—namely, the Superintendent's residence and the teachers' residence. The other officers' quarters are in the main building, among the boys, for whose oversight at night as well as during the day provision is made.

When a lad is first admitted he is taken before the Superintendent, who questions him closely as to his parentage, previous history, and so forth. All the answers to these questions are recorded in the history book, and are verified or otherwise by inquiries made by the Superintendent or some other officer. According to this information the lad is classified—that is, he is either placed in “C” or “B” divisions. He is never placed in “A” division on first admission, but is usually entered in “C” (the lowest division), and the length of time he remains depends entirely upon his conduct. Sometimes he may only remain a few days. When a lad is transferred to “B” division, he usually remains there three months, except in very occasional circumstances.

Boys who misbehave are degraded by transfer to the inferior divisions, but this course is seldom necessary, their first experience in that direction generally being sufficient.

The boys are committed in the first instance for periods ranging from one to five years. The average length of their detention in the institution is about nine months. They are then sufficiently reformed and instructed to be placed out—some to trades, others to farm work—the greatest care being taken in the selection of homes. The Superintendent generally visits the home himself, and informs the applicant of the lad's character and antecedents, and any peculiarities about him that may require special treatment.

Sometimes lads are discharged on probation to their parents, and are kept under surveillance until the period of probation expires, when, if their conduct has been satisfactory, they are written off the books, under the authority of the Executive Council. In a well-managed institution experience has shown that no boy need be detained for the full term of his sentence.

The

The one great objection raised to a shore reformatory is that the boys will abscond. This, however, has been effectually met by a judicious classification of the inmates; by the system of dietary and other rewards; and by the initiatory confinement and strict discipline, from which there is no chance of escape and which so break the boys into discipline, and, in a sense, give them experience of hardship, that they are, as a rule, glad enough to take advantage of the free life, healthy employment, and indulgences which they are treated to subsequently.

The following figures show the improvement effected in the matter of absconders at an institution where, in the first year, the lads were not classified, but where classification was adopted as a remedial measure afterwards:—During 1884, of 199 boys dealt with, 26 individual boys (13·06 per cent.) absconded, or attempted to abscond; during 1885, of 178 boys dealt with, 5 individual boys (2·81 per cent.), absconded, or attempted to abscond; during 1886, of 156 boys dealt with, 4 individual boys (2·56 per cent.) absconded, or attempted to abscond; and cases of absconding at this institution are now almost unknown. There was last year only one, although every boy might have absconded if he had so desired. Examples of this character can be multiplied.

The boys are provided with an excellent library, available only to inmates of "A" and "B" and to the lads who have been apprenticed out. To these the librarian sends books on application, and on return of the book previously lent. Cricket, football, draughts, dominoes, chess, a gymnasium, and other facilities for healthful in-door and out-door amusement and recreation, are among the means liberally provided for the mental and physical improvement of the boys. They are also taught swimming, a huge tank, which can be emptied and refilled from the main source of water supply, being provided for that purpose. The waste water may be utilised for irrigation purposes.

Sufficient provision is made for Sabbath services and Sunday schools, in connection with which the voluntary assistance is a leading feature.

There is a Visiting Committee of eight (four ladies and four gentlemen) appointed to visit the institution and report to the head of the Department, in the same manner as the lady visitors do in the case of boarded-out children. This Committee has not power to interfere with the management in any way, but they may make suggestions. The uncertain visits of the Committee, or any members of it, must have a good moral effect upon the officials, as well as upon the lads.

The foregoing is an outline of a reformatory scheme which has been so fully tested elsewhere that it cannot fail, except through maladministration, neglect, or carelessness. In order to avoid these, very great care should be exercised with regard to the appointment of the officials. If I may be allowed to make a suggestion, I would respectfully recommend that the head of the Department should be made the official solely responsible to his Minister, and that he be allowed a free hand with regard to his officials. Where this has been the case in the Department of Charitable Institutions—as in the State Children's Relief Branch, for instance—no difficulty whatever has been experienced. In other divisions, where the contrary system has prevailed, difficulties are frequent. There should be a distinct understanding upon this point with regard to the reformatory, which will be the initiation of an entirely new method of dealing with young criminals in this Colony. It should be fully realised that this new system will not be a simple matter to handle, and that failure at the outset from preventible causes will probably cause the experiment not to be repeated.

I should like to say that I have written exhaustively upon this subject during the past ten years; that I am consequently aware that the shore reformatory has many enemies among persons who know nothing whatever about it; and, therefore, extra care should be taken to leave no weak spot in the system with regard to either arrangement or administration.

There are many other points not already enumerated to be considered (as, for instance, character and strength of staff and their duties; books to be kept; matters of domestic economy; regulation of industrial training, &c., &c.), but it is not necessary to refer to them fully at this stage.

With reference to the Rookwood buildings, I do not think they are fully suitable for the purpose contemplated, but additions might be made to overcome existing difficulties. They need not be very costly, nor entail great delay.

Indeed, if the Colonial Secretary determines to establish the reformatory, and make it a branch of the Department of Charitable Institutions, I would (if facilities are afforded in connection with additions to buildings and other matters) undertake to have it in operation within two months.

S.M.

Sir,

Charitable Institutions Office, 4 December, 1891.

With reference to the Colonial Secretary's verbal instructions in connection with the proposed Reformatory for Boys at Rookwood, I beg to suggest that, with the object of obtaining as much information as possible with regard to this important matter, I may be authorised to visit the Reformatory for Boys at Ballarat, Victoria, which has been in operation for some years with highly satisfactory results, in order that as much of the system of that institution as may appear to be advantageous may be incorporated with the method of management to be adopted in New South Wales.

If the Rookwood buildings are to be utilised as a reformatory, it will be necessary to carry out the following additions and repairs:—

1. Erect galvanised-iron fence to enclose refractory division ("C").
2. Erect other fences where required.
3. Colour interior of walls, and limewash ceilings.
4. Asphalt yards.
5. Paint exterior of buildings where necessary to exclude damp.
6. Relay existing drain-pipes, and provide additional pipes where necessary.
7. Repair roofs.
8. Subdivide large hall into schoolroom and gymnasium.
9. Erect tank for teaching boys swimming, with necessary supply and escape connections.
10. Lay on water to existing buildings.
11. Convert apartments attached to main hall into workshops.
12. Erect water-closet, &c., to superintendent's residence.
13. Place stoves where required for cooking in various divisions.
14. Furnish inmates' divisions and attendants' quarters where required.

If

If the foregoing recommendations are approved, the Government Architect might, perhaps, be invited to have the necessary works carried out as speedily as possible, and, as soon as they are completed, the establishment can be proclaimed a Reformatory for Boys in accordance with the provisions of Act 30 Vic. No. 4, immediately after which it can be occupied for its legal purposes.

Although the additions referred to are enumerated under fourteen headings, they are not very extensive in character, and they should, I think, be completed without difficulty (if a special effort is made in that direction) within a period of six weeks.

As there is not at present a Parliamentary vote for a boys' reformatory, the amounts needed for additions, maintenance, and management might be obtained as required from time to time from the Treasurer's Advance Account, and refunded thereto by a vote on the next Estimates.

I have, &c.,

SYDNEY MAXTED,

Director of Asylums, &c.

Charitable Institutions Office, Oxford-street, Paddington,
9 December, 1891.

Sir,

Report on Reformatory for Boys at Ballaarat.

I have the honor to report that, in accordance with the Colonial Secretary's instructions, I visited the Reformatory for Boys at Ballaarat on Saturday and Sunday last, and made a thorough investigation into its methods of arrangement and administration, with the view of adopting any features that might appear to be desirable in connection with the proposed reformatory system in New South Wales.

The Ballaarat institution is, undoubtedly, a very successful one; and the satisfactory results achieved in defiance of the buildings, which are admitted by experts to be most unsuitable for the purposes they are put to—inasmuch as thorough classification and separation of inmates cannot be effected in them—warrant the belief that, under more favourable conditions, an even higher measure of success can be secured in a better-arranged similar establishment in this Colony.

I have very little to add to the full minute which I have furnished to the Colonial Secretary on this subject. As I have already said, I do not consider the Rookwood buildings are in every respect suitable for a reformatory; but if the suggestions made with reference to their arrangement are carried out, they will admit of the experiment being tested under far more favourable conditions with regard to premises than was the case in Victoria.

The success of the Ballaarat institution has resulted from observance of the following points:—

1. Firm and wise administration.
2. A system of rewards and punishments.
3. Classification, and, where necessary, segregation of inmates as far as possible.
4. Their occupation in industrial pursuits—principally in labour on the land.

In addition to spending a day and a half at the Ballaarat Reformatory, I have had lengthy conversations with the officials who established and for several years managed it, and who now hold high positions in the Civil Service of Victoria, in recognition of their efforts to make it a success. I allude to Capt. Evans, R.N., Inspector-General of Penal Establishments; and Mr. Connor, his deputy. The former has had large experience of ship and shore reformatories in Great Britain and Victoria, and has no doubt whatever that the shore system is in every way the best for criminal lads where the object in view is to convert them into respectable colonists, and enable them to settle upon the land. His opinion on this point is also endorsed by the best authorities in England and elsewhere who have dealt with this important department of social science.

The two prime objections which have been raised to this system by its opponents in this Colony, and which are officially on record, are—

1. That the shore reformatory must be in all essentials a prison, or, otherwise, the boys will abscond.
2. That it is necessary to detain them at great cost to the State for long periods in the institution before they are eligible for outside service.

The operations of the Ballaarat Reformatory and other similar establishments (I mention the Ballaarat Reformatory because it is near home, and may be inspected by any person curious to test the accuracy of this statement) are a complete answer to both these objections.

It is not, apart from its probationary division, in which it is seldom necessary for the lads to be detained more than a week, in any sense a prison; and although the boys employed on the farm—who have full liberty—occasionally take it into their heads to run away, they have in nearly every case only remained absent for a very brief period; and their average term of detention at the institution last year was only nine months.

There was practically one absconder last year; and instances of this character will of course occur at any institution which is not absolutely a prison, whether it is afloat or ashore.

It is not, however, within the scope of my instructions to discuss the relative merits of the two methods; but merely to report whether or not, in my opinion, the reformatory system in operation at Ballaarat can be applied to criminal boys in this Colony with any prospect of success. I have no doubt whatever that it can be, with some modifications with regard to which its managers agree with me, and which can be carried out at Rookwood, while, from the nature of the buildings, they could not at Ballaarat. These modifications relate to more extensive classification; re-arrangement of staff for the purposes of economy; re-adjustment of education and labour periods for the boys; and other details into which it is not necessary to enter at this stage.

The main point to be borne in mind at the outset—apart from the arrangement of buildings, and classification of inmates—relates to the official staff; and if it is determined to entrust me with the duty of testing the possibilities of this new method of dealing with young criminals, I would earnestly beg that the suggestions I have already made in this matter may be adopted.

The officers of every grade should be appointed on probation; and they should have before them the penalty of immediate dismissal for improper discharge of duty, as well as the distinct promise of substantial rewards for faithful service. They must all possess special qualifications, and should be selected by the head of the Department, after careful inquiry, as he of course will be held directly responsible to the Government for failure.

It

It is not, as you are aware, my custom to mention the services which I have myself rendered in connection with the social institutions of this country, and I do so now with much diffidence, but with a set purpose. I have had the honor of thus far administering the boarding-out system, from its inception under 44 Vic. No. 24, and of carrying out substantial reforms at the Government Asylums for Infirm and Destitute, as well as of reporting upon cognate institutions from time to time, in connection with which it was requisite to remedy serious abuses. In every case powerful and unfair opposition has been offered to necessary changes; and where there has not been a free hand with regard to officials, it has been most difficult to carry them into effect.

I venture to predict similar obstacles to the proposed shore reformatory; and hence my anxiety that there should be no probable element of failure to contend with at the outset.

At present, I need only further say that if it is determined to convert the buildings at Rookwood into a reformatory, the recommendations made in the memorandum already furnished to the Colonial Secretary will have to be first carried out. I would respectfully suggest that the Government Architect be invited to consult with me in that matter.

It will subsequently be necessary to amend the present Reformatory Act in several important particulars, and to make suggestions in connection with the appointment of officers and other matters; but all these questions can be attended to while the alterations to buildings are in progress. I shall be prepared to submit a short and practicable Amending Bill in the course of a few days, if so directed.

Awaiting your further instructions,

I have, &c.,

SYDNEY MAXTED,
Director of Asylums, &c.

Minute by The Principal Under Secretary.

THE Crown Solicitor will perhaps kindly advise whether the conditions in the Memorandum of Lease herewith have been complied with and whether the document is in proper form before being signed. B.C., 15/3/94.—C.W., P.U.S.

Mr. J. Bennett to The Principal Under Secretary.

Sir,

Sydney, 21 March, 1894.

I beg to hand you herewith a certificate by Mr. A. W. Stephen, licensed surveyor, showing that he has made a survey of the land described in certificate of title, vol. 578, fol. 212, in order that it may be forwarded to the Crown Solicitor.

I have, &c.,

JOHN BENNETT.

It will be necessary to have a description of Brush Farm, the land leased from Mr. Bennett for a reformatory by the Government. The certificate herewith signed by Mr. Stephen is the land so leased, and it may be now forwarded to the Crown Solicitor for inspection.—B.C., 21/3/94. C.W. The Crown Solicitor.

[Enclosure.]

Surveyor's Certificate.

50, Castlereagh-street, 6 December, 1890.

I HEREBY certify that I have made a survey of the land described in certificate of title, vol. 578, fol. 212, containing 37 acres 0 roods 21 perches of the Brush Farm estate, and I certify that the brick and stone house known as the Brush Farm-house, with brick stables and out-houses, stands within the boundaries, and does not encroach.

A. W. STEPHEN,

(STEPHEN AND HALLOBAN),

Licensed Surveyor.

The Crown Solicitor to The Principal Under Secretary.

Sir,

Crown Solicitor's Office, Sydney, 27 March, 1894.

I have the honor to return herewith the papers relating to the proposed lease of Brush Farm from Mrs. Emma Bennett as a Reformatory for boys, together with the draft lease submitted for my consideration.

Having regard to the contract between the parties, as disclosed by your letters of the 28th December last and 23 January last, and Mr. Bennett's reply of 3rd January, the two former of which Mr. Bennett kindly lent me for reference—no copies thereof having been submitted with the papers—I think the only alterations to be made are in clauses 1 and 3, and would suggest that in lieu of the latter clause, as originally drawn, the provisions as shown in type-writing annexed to the draft lease herewith should be inserted in the lease. If the alterations meet with your approval the draft should be re-submitted for the lessors perusal.

I have, &c.,

ERNEST A. SMITH,

Crown Solicitor.

Amended leases signed and returned herewith, B.C., 28/3/94.—C.W. The Crown Solicitor. The amendments having been accepted by the Crown Solicitor, the three memorandums have been handed to Mr. Bennett's solicitor for registration. The Crown Solicitor, B.C., 30/3/94.—C.W., P.U.S.

Memorandum

Memorandum of Lease.

(Stamp Duty
£1 5s.
Sydney, 29/3/04)

(26 VICTORIA No. 9.)

I, EMMA BENNETT, wife of John Bennett, of Brush Farm, in the Colony of New South Wales, Esquire, being registered as the holder of a power of appointment over an estate in fee simple in the land hereinafter described, subject, however, to such encumbrances, liens, and interest, as are notified by memorandum underwritten or endorsed hereon: Do hereby appoint by way of lease unto Her Most Gracious Majesty the Queen all that piece of land containing thirty-seven acres and twenty-one perches situated in the parishes of the Field of Mars and Hunter's Hill, county of Cumberland, being the whole of the land comprised in Certificate of Title, dated 19th May, A.D. 1882, registered volume 578, folio 212, to be held by Her said Majesty as tenant for the term of ten years computed from the first day of March, one thousand eight hundred and ninety-four, at the yearly rent of five hundred pounds (£500), payable as follows, quarterly, subject to the following covenants, conditions, and restrictions, viz.:—

1. To the covenants and powers implied in every Memorandum of Lease by virtue of the Real Property Act, secs. 51 and 52, or such of them, or so far, as not hereby expressly negatived or modified.

2. To the following special additional provisions, viz.:—

- (a.) That the lessee shall maintain and keep the orchard on the said land in good condition, and shall at least once in every year well and sufficiently manure such orchard with all proper and necessary manures, and shall as when the same shall require spray and wash with all proper and necessary materials all the orange trees in such orchard, and shall once in every year prune all trees in such orchard, and shall remove all trees which in the discretion of the lessee, her agent or manager shall be useless, and replace the same with others.
- (b.) In case the lessee or the Colonial Secretary for the time being on her behalf shall, at any time during the said term, give to the lessor one calendar month's notice of the desire of the lessee to purchase the said premises hereby demised, the lessor shall sell to the lessee the inheritance in fee simple in possession, free from incumbrances, of the said demised premises, with all buildings and improvements thereon, at a price to be agreed upon between the said parties, or in the event of no price being agreed upon within fourteen days from the date of such notice, then at a price to be ascertained by reference to two arbitrators and their umpire, under the Arbitration Act of 1893: Provided that in estimating the price to be paid for the premises, the amount to be paid therefor shall be the then value thereof exclusive of any buildings or improvements erected or made by the lessee other than the necessary improvements and repairs which are to be made by the lessee under the terms of this lease: Provided always and it is hereby expressly agreed that if the lessee shall elect to purchase the premises hereby leased the price to be paid shall be mutually agreed upon by the lessor and her mortgagee (if the premises shall then be subject to any mortgage) on the one part and the lessee on the other part, but if no agreement shall be come to as to the price to be paid and arbitration is resorted to, the arbitrator to be appointed on behalf of the vendor shall be so appointed with the consent of the mortgagee for the time being of the premises.
- (c.) The power to purchase under the clause lastly hereinbefore contained shall in no way prejudice the right of the Crown to resume the land under any Act then in force in the said Colony, and in estimating the amount of compensation to be paid on any such resumption, the first proviso of the last clause shall apply in the same manner as if the demised premises were purchased under the power conferred by such clause.
- (d.) That if the said premises shall not be purchased or resumed the lessee shall be at liberty to remove all wood and galvanized iron buildings erected by the lessee at the end or sooner determination of the term hereby granted and any extension thereof, or within thirty days of such end or determination of the said term.

I, George Richard Dibbs, Knight, of the Most Distinguished Order of Saint Michael and St. George, Premier of the Colony of New South Wales, on behalf of Her said Majesty the Queen, and so as to bind the Government of the Colony of New South Wales, do hereby accept this lease as tenant, subject to the conditions, restrictions, and covenants above set forth.

GEORGE R. DIBBS.

Dated this twenty-eighth day of March, one thousand eight hundred and ninety-four.

EMMA BENNETT,

Signed by the said Emma Bennett, who is personally }
known to me, in my presence,— }
WM. ANDREWS, Solicitor, Sydney.

Lessor.

Accepted, and I hereby certify this lease to be correct for the purposes of the Real Property Act.

GEORGE R. DIBBS,
On behalf of Lessee.

Signed by the said George Richard Dibbs, K.C.M.G., }
who is personally known to me, in my presence,— }
CRITCHETT WALKER, J.P.

ANNEXURE to Memorandum of Lease from Emma Bennett to Her Majesty the Queen, dated
28th March, 1894.

THIS is to certify that Emma Bennett, wife of the abovenamed John Bennett, came before me, William Alexander Abbott, Deputy Registrar-General, and she being by me examined apart from her said husband, acknowledged that the within written instrument was executed by her, and that she was acquainted with, and understood the nature and effect thereof; and she declared that she has so executed the same freely and voluntarily, and without menace, force, or coercion, either on the part of her husband or of any other person.

Witness my hand at Sydney, the 28th day of March, 1894.

W. A. ABBOTT.

The

The Principal Under Secretary to Mr. J. Bennett.

Sir, Chief Secretary's Office, Sydney, 3 April, 1894.
With reference to previous correspondence on the subject of the project to convert the Brush Farm Estate into a Boys' Reformatory, I am directed by the Chief Secretary to inform you that, the lease having now been executed, the Director of Government Asylums has been duly instructed to take possession of the premises with a view to their being utilised for this purpose.

I have, &c.,

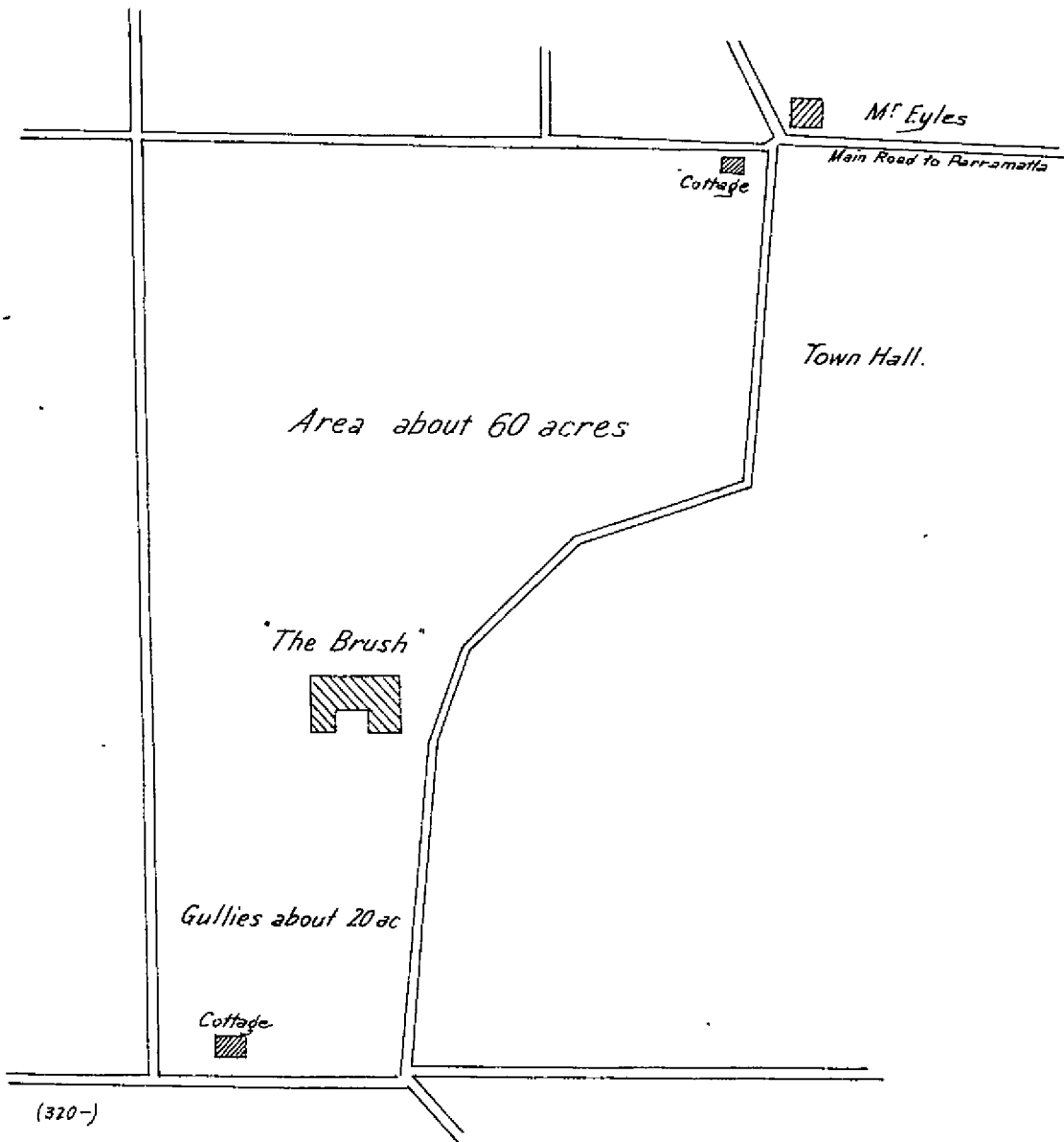
CRITCHETT WALKER,
Principal Under Secretary.

[Two plans.]

[1s. 6d.]

Sydney: Charles Potter, Government Printer.—1894.

APPENDIX A.



APPENDIX B.

ROUGH SKETCH
BRUSH FARM

PLAN OF BUILDINGS

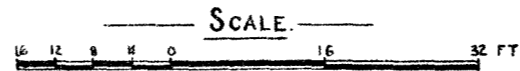
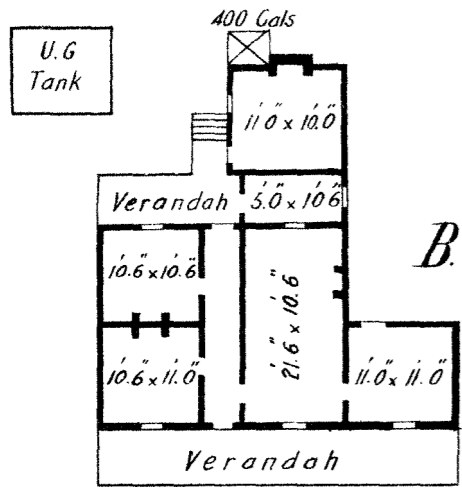
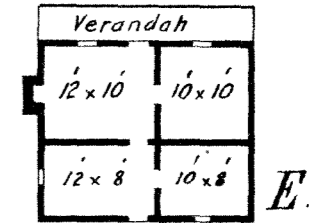


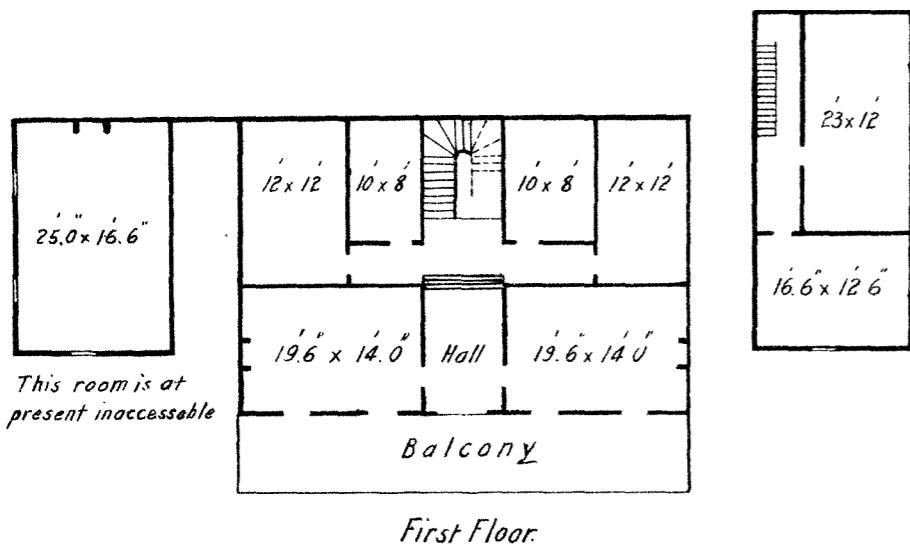
PHOTO-LITHOGRAPHED AT THE GOVT. PRINTING OFFICE
SYDNEY, NEW SOUTH WALES



Weather-board Cottage
in South-Western Corner of Estate.

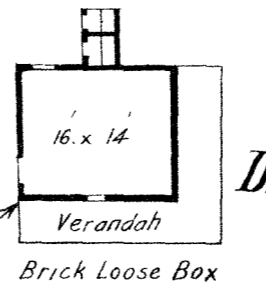


Weather-board Cottage
in North Eastern Corner of Estate



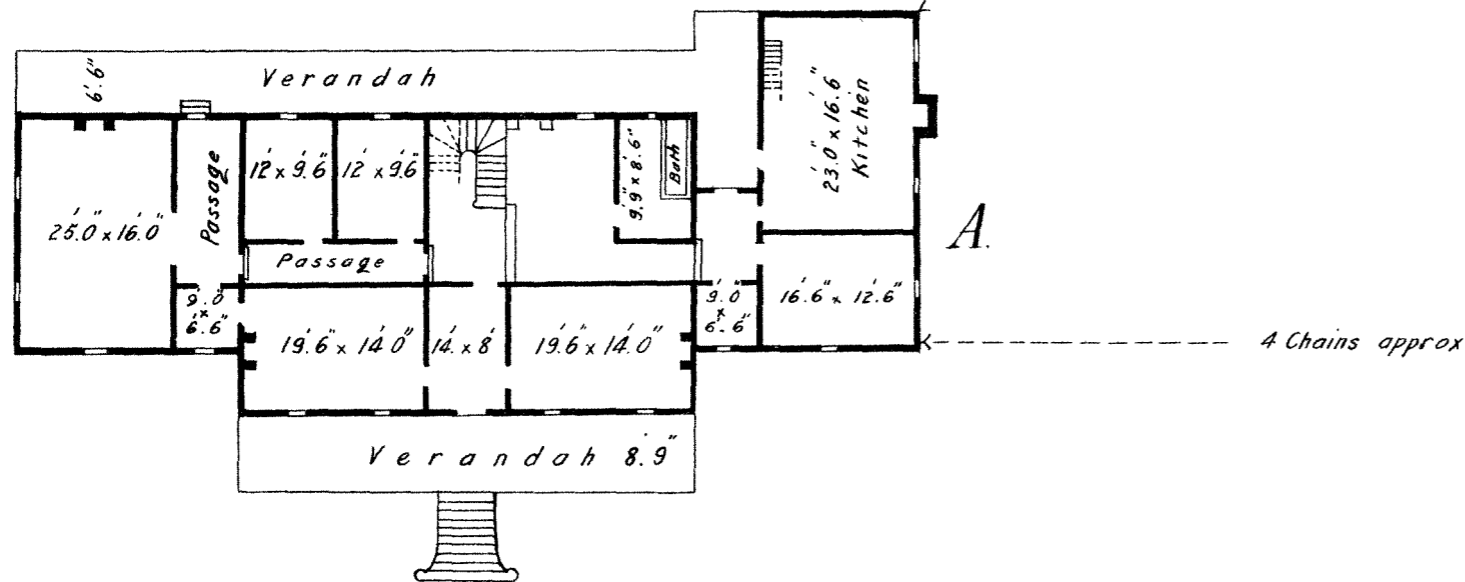
This room is at
present inaccessible

First Floor



Brick Loose Box

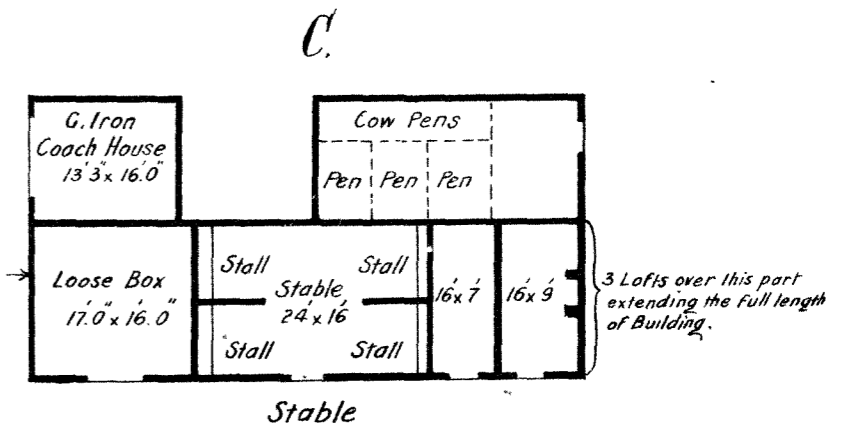
80.0' Approx



4 Chains approx

Ground Plan
Building of Stone

(Sig 320.)



Stable

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

PUBLIC WORKS ACT OF 1888.

(RESUMPTION OF LAND FOR ENLARGEMENT OF THE GROUNDS FOR THE HOSPITAL FOR INSANE
AT KENMORE.)

Ordered by the Legislative Assembly to be printed, 7 February, 1894.

**NOTIFICATION OF RESUMPTION OF LAND UNDER
THE "PUBLIC WORKS ACT OF 1888," 51
VICTORIA No. 37.**

NEW SOUTH WALES, } Proclamation by His Excellency The
to wit. } Right Honourable Sir ROBERT WILLIAM
(L.S.) } DUFF, a Member of Her Majesty's Most
Honourable Privy Council, a Knight
Grand Cross of the Most Distinguished
Order of Saint Michael and Saint George,
Governor and Commander-in-Chief of
the Colony of New South Wales and its
Dependencies.

WHEREAS I, Sir ROBERT WILLIAM DUFF, the Governor aforesaid, with the advice of the Executive Council, have directed that a certain public work, that is to say, Enlargement of the Grounds for the Hospital for Insane at Kenmore, in the said Colony, the estimated cost of which does not exceed twenty thousand pounds, shall be carried out under the provisions of the "Public Works Act of 1888," as an authorised work by the Minister for Public Works as Constructing Authority; and that the land described in the Schedule hereto, which is in my opinion required for carrying out the said work, shall be acquired by taking the same under the "Lands for Public Purposes Acquisition Act," as adopted by the "Public Works Act of 1888": Now, therefore, I, the said Governor, with the advice aforesaid, in pursuance of the "Public Works Act of 1888," do declare by this notification, to be published in the Government Gazette, and in one or more newspapers published or circulated in the Police District wherein the said land is situated, that the Crown Land comprised within the description set forth in the Schedule hereto has been appropriated, and the private property within such description has been resumed, for the public purpose aforesaid, to the intent that upon the publication of this notification in the Gazette, the said land described in the said Schedule hereto shall forthwith be vested in the

said Constructing Authority as a corporation sole on behalf of Her Majesty, for the purposes of the "Public Works Act of 1888," for an estate in fee simple in possession, freed and discharged from all trusts, obligations, estates, interests, contracts, charges, rates, rights-of-way, or other easements whatsoever; and to the further intent that the legal estate therein, together with all powers incident thereto or conferred by the said last-mentioned Act, shall be vested in such Constructing Authority as a Trustee; and I declare that the following is the Schedule of land hereinbefore referred to:—

SCHEDULE.

All that piece or parcel of land situate in the parish of Narrangarril, county of Argyle, and Colony of New South Wales: Commencing at the westernmost corner of lot 32 on a plan deposited in the Land Titles Office, Sydney, numbered 479; and bounded thence by the south-western boundary of that lot bearing south 61 degrees east 24 chains 94 links to the left bank of the Wollondilly River; thence by that bank upwards to a point distant 2 chains rectangularly from the first-described line; thence by a line bearing north 61 degrees west about 25 chains 13 links to the south-eastern boundary of a road one chain wide; and thence by that boundary bearing north 50 degrees 30 minutes east 2 chains 15 links, to the point of commencement,—be the said several dimensions all a little more or less, containing 5 acres or thereabouts.

In witness whereof I have hereunto set my Hand, and caused the Great Seal of the Colony to be hereto affixed, at Government House, Sydney, this twenty-fourth day of January, in the year of our Lord one thousand eight hundred and ninety-four, and in the fifty-seventh year of Her Majesty's Reign.

By His Excellency's Command,

WILLIAM JOHN LYNE.

GOD SAVE THE QUEEN!

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

THE BENEVOLENT ASYLUM.
(RELIEF AFFORDED BY.)

Ordered by the Legislative Assembly to be printed, 8 June, 1894.

[Laid upon the Table of the House in answer to Question No. 7, of 7th June, 1894.]

Question.

- (7.) PERSONS RELIEVED AT THE BENEVOLENT ASYLUM IN SYDNEY:—DR. ROSS *asked* THE COLONIAL SECRETARY,—
- (1.) The number of persons relieved weekly or monthly at the Benevolent Asylum in Sydney, and the amount of provisions served out weekly or monthly to the same?
 - (2.) Why are provisions made for relieving the distressed at the Benevolent Asylum in Sydney, and not in inland towns and districts of the Colony, where distress is in many cases equally as great and as keenly felt as in Sydney?
 - (3.) Will he see that some provision is made for relieving the poor and distressed during winter in inland towns, the same as is done in Sydney?
 - (4.) How much does the Benevolent Asylum in Sydney cost the Colony annually?

Answer.

(1.) The weekly average number of cases (families and the aged poor) is 720, representing 2,500 adults and children. The following provisions, &c., and rent money, were granted during the month of April, 1894:—11,589 loaves of bread, 6,999 lb. of flour, 2,983 lb. of mutton, 1,491 lb. of beef, 2,985 lb. of sugar, 744 lb. of tea, 243½ lb. of sago, 170 lb. of rice, 272 lb. of oatmeal, 4½ lb. of arrowroot, 51 pairs of boots, 2 pairs of blankets, 36 quarts of milk; rent money distributed, April, 1894, £153 4s.; cost of above provisions, &c., £216 3s. 11½d. Total, £369 7s. 11½d.

(2 and 3.) The matter shall have attention.

(4.) The Government allow £2,500 per annum for the purposes of out-door relief.

1894.

NEW SOUTH WALES.

PARLIAMENTARY STANDING COMMITTEE ON
PUBLIC WORKS.

EIGHTH GENERAL REPORT

TOGETHER WITH

RETURNS GIVING A RECORD OF THE COMMITTEE'S
INQUIRIES

AND

MINUTES OF PROCEEDINGS.

Presented to Parliament in accordance with the provisions of the Public Works Act,
51 Vic. No. 37.

SYDNEY : CHARLES POTTER, GOVERNMENT PRINTER.

2027

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MEMBERS OF THE COMMITTEE.

LEGISLATIVE COUNCIL

The Honorable WILLIAM HENRY SUTTOR, Vice-Chairman.
 The Honorable JAMES HOSKINS.
 The Honorable FREDERICK THOMAS HUMPHERY.
 *The Honorable ANDREW GARRAN, LL.D.
 The Honorable JOHN DAVIES, C.M.G.
 The Honorable WILLIAM JOSEPH TRICKETT.

LEGISLATIVE ASSEMBLY.

JACOB GARRARD, Esquire, Chairman.
 THOMAS THOMSON EWING, Esquire.
 WILLIAM CHANDOS WALL, Esquire.
 WILLIAM McCOURT, Esquire.
 JOHN CASH NEILD, Esquire.
 EDWARD WILLIAM O'SULLIVAN, Esquire.
 CHARLES COLLINS, Esquire.
 HENRY DAWSON, Esquire.

* [The Honorable Andrew Garran, LL.D., on 5th October, 1892, resigned his seat as a member of the Committee, and on 12th October, 1892, the Honorable William Joseph Trickett was appointed to fill the vacancy.]

PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS.

EIGHTH GENERAL REPORT.

To His Excellency the Right Honorable SIR ROBERT WILLIAM DUFF, a Member of Her Majesty's Most Honorable Privy Council, a Knight Grand Cross of the Most Distinguished Order of Saint Michael and Saint George, Governor and Commander-in-Chief of the Colony of New South Wales and its Dependencies.

MAY IT PLEASE YOUR EXCELLENCY,—

The Parliamentary Standing Committee on Public Works, appointed during the first Session of the present Parliament, under the Public Works Act of 1888, 51 Vic. No. 37, the Public Works Act Amendment Act of 1889, 52 Vic. No. 26, and the Public Works (Committees' Remuneration) Act of 1889, 53 Vic. No. 11, have the honor to submit the following General Report of their proceedings since the date of their last General Report, 26th April, 1893:—

1. At the date of their last General Report the Committee had completed the inquiries respecting the proposed works which up to that time had been before them, and since then they have had one other work under consideration. This work—the proposed Railway from Narrabri to Moree—was referred to them by the Legislative Assembly on 1st November, 1893, and the inquiry connected with it has been duly carried out. The Committee find that it is expedient the railway as proposed should be constructed, but they recommend that the work be not undertaken until a Betterment Act is passed. The Committee's inquiries to date.

2. The proposed Railway from Narrabri to Moree is noticeable from the circumstance that it is regarded as the first of a system of cheaply constructed railways which, under the name of "pioneer lines," are, in the opinion of the Commissioners for Railways and the Department of Public Works, well suited to the requirements of the pastoral districts of the Colony not yet possessing railway communication. The first of a system of cheap railways.

3. It is also noticeable from the fact that its construction is conditional upon the application of a betterment rate to the land served by the railway. The proposed line was referred to the Committee for inquiry with the stipulation that the work was "to be subject to the provisions of any Act that may be passed dealing generally with the 'betterment principle' with regard to public works." It is the first instance in which any provision as to betterment has been introduced into a resolution of the Legislative Assembly referring a proposed work to the Committee, and in that respect is important. In some of their reports the Committee have found occasion to urge the application of the betterment principle to the construction of railways, and in two cases approved of the construction of the lines only with the condition that a betterment rate be charged to provide a fair proportion of the cost. In their Sixth General Report the Committee expressed the opinion that the principle "might without injustice to landowners, and with great advantage to railway construction, be applied to the area of all the land distinctly increased in value by the construction of the railway." And further, that "with power existing by which the Government would be able to obtain from all landowners a fair proportion of the additional value imparted by railways to their land, railway construction might proceed rapidly and profitably.

Some

Some of the most significant features in the Committee's inquiries concerning proposed country railways, are the large extent of private land through which the lines would run, the little return the land is likely to make to the railways, and the great increase to private wealth which is thus brought about in the interests of a few landholders at the expense of the general community." The railway from Narrabri to Moree, though a work said to be necessary for the retention of traffic at present carried on the railways and for the acquisition of other traffic, is one of those lines in connection with which a betterment rate may justly be charged. Whether it should be imposed to the extent indicated by the Minister for Public Works to the Committee, through the Under Secretary of the Department, and fully stated in the Committee's detail report respecting the proposed railway, is a question that requires consideration. The most difficult points in the betterment system are the area over which the principle should operate, and the graduated scale upon which the rate should be based.

Sittings held
and witnesses
examined.

4. In the consideration given to the subject of the Narrabri to Moree Railway the Committee have held 11 meetings and examined 20 witnesses; and a Sectional Committee, who visited the Narrabri and Moree districts, held 11 meetings and examined 61 witnesses.

Returns
containing a
record of the
Committee's
inquiries, and
Minutes of
Proceedings.

5. Attached to this Report, and completed to the present date, are the returns which have been published with previous General Reports, and which contain a record of the whole of the works inquired into by the present Committee and by previous Committees that have been appointed under the "Public Works Act"; and also a copy of the Committee's Minutes of Proceedings.

J. GARRARD,
Chairman.

Office of the Parliamentary Standing Committee on Public Works,
Sydney, 12 January, 1894.

PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS.

RECORD OF INQUIRIES.

List of Proposed Public Works inquired into by the several Committees, with the results of their inquiries, from 27 August, 1888, the date of the first sitting of the first Committee appointed under the Act, to 12 January, 1894.

Date of inquiry.	Proposed Work.	Expenditure proposed by the Government.	Expenditure recommended by the Committee.	Amount in excess of that proposed.	Amount in reduction of that proposed.	Remarks
		£	£	£	£	
1888. 4 Sept. to 22 Oct.	Improvements to the Circular Quay.	120,000	125,000	5,000	.....	The Committee recommended an alteration in the plan of these improvements, by which the total estimated cost would be increased to £125,000.
26 Sept. to 22 Oct.	Storage reservoir at Potts' Hill, and second line of pipes to Crown-street.	120,000 165,000	285,000	.....	.....	Recommended as proposed.
13 Sept. to 22 Oct.	New Central Police Court	48,000				
4 Oct. to 22 Oct.	Drainage works, Manly...	34,114	22,000	12,114	The Committee recommended the adoption of a modified plan of these drainage works, by which the total estimated cost would not exceed £22,000.
10 Oct. to 22 Oct.	Drainage works, North Shore.	77,062	107,000	29,938	.....	The Committee recommended the adoption of the complete scheme proposed in relation to this work, and the estimated cost of which, as shown by the evidence, is £107,000.
31 Aug. to 22 Oct.	Harbour improvements at Newcastle.	112,000	112,000	.....	.....	Recommended as proposed.
19 Sept. to 22 Oct.	Wharfage accommodation, Woolloomooloo Bay.	42,000	.....	.....	42,000	The Committee were of opinion that the proposed expenditure was not justified either by the requirements in connection with the wharfage accommodation of the port, or by the nature of the proposal if regarded as a scheme for the improvement of a very valuable Government property.
16 Nov. to 1889. 11 Jan.	Bridge at the Spit, Middle Harbour.	62,000	.....	.....	62,000	The Committee decided that the proposed expenditure was not justified by the evidence, and that a steam-punt would meet the requirements of the district in the vicinity of the proposed work for some years to come.
1888. 7 Dec. to 1889. 27 Aug.	Drainage works for the Western Suburbs.	830,304	830,304	.....	.....	Recommended as proposed.
26 June to 30 Sept.	Improvements to the entrance of the Richmond River.	326,000	326,000	.....	.....	The Committee recommended that the proposed works be carried out in a certain order, so that the results from the works first constructed might be ascertained before others were proceeded with.
9 Oct. to 11 Dec.	Railway to connect North Shore Railway with Port Jackson, at Milson's Point.*	262,000	.....	.....	262,000	The Committee considered, for various reasons stated in their report on the subject, that the work as proposed should not be carried out.
20 Aug. to 12 Dec.	Railway from Culcairn to Corowa.	197,300 (or £4,184 per mile.)	164,500 (or £3,500 per mile.)	.....	32,800	The Committee were of opinion that this line should be constructed at a cost not exceeding £3,500 per mile.
22 Aug. to 10 Dec.	Railway from Goulburn to Crookwell.	198,300 (or £5,984 per mile.)	148,500 (or £4,500 per mile.)	.....	49,800	The Committee considered that the cost of this railway should not exceed £4,500 per mile, and that a saving should also be effected by utilizing a certain portion of the present main line instead of taking the proposed railway through a part of the city of Goulburn.
1890. 22 Jan. to 6 Feb. 1889.	Dredge and plant for Sydney Harbour.	30,000	.....	.....	30,000	The evidence showed that this class of dredge was not required.
25 Sept. to 1890. 18 Feb.	Railway from Nyngan to Cobar.	207,360	207,360	.....	.....	The Committee recommended the construction of this railway as part of a line which should be extended to Wilcannia and Broken Hill.
14 Jan. to 11 Feb.	Offices for the Board of Water Supply and Sewerage.	50,000	50,000	.....	.....	Recommended as proposed.
14 Jan. to 6 Feb.	Reticulation of the Western Suburbs Drainage Scheme.	713,592	713,592	.....	.....	Recommended as proposed.
14 Jan. to 11 Feb.	Extension of Sydney Water Supply to Southern Suburbs—Hurstville and Rockdale.	66,000	.....	.....	66,000	This expenditure was rendered unnecessary by reason of a temporary water-supply scheme being sufficient to meet requirements for some years.
19 Nov. to 2 April.	Railway from Marrickville to the Burwood Road.	90,250	90,250	.....	.....	Recommended as proposed.
	Carried forward.....£	3,751,282	3,229,506	34,938	556,714	

List of Proposed Public Works inquired into by the Committee, &c.—*continued.*

Date of inquiry.	Proposed Work.	Expenditure proposed by the Government.	Expenditure recommended by the Committee.	Amount in excess of that proposed.	Amount in reduction of that proposed.	Remarks.
		£	£	£	£	
1890. 23 Oct. to 24 April.	Brought forward ...£	3,751,282	3,229,506	521,776	556,714	
	Improvements to the entrance of the Clarence River.	580,900	211,900	.....	369,000	In this case the Committee recommended the construction of only a portion of the works proposed, as they were of opinion that when this portion had been constructed it might be found that the remainder would not be required.
31 Oct. to 15 April.	Breakwater at Byron Bay.	241,723	241,723	.....	.....	The original estimate for this work was £162,000; the increase was due to a difficulty in obtaining stone.
4 Dec. to 24 April.	Railway from Kiama to Nowra.	381,390	381,390	.....	.....	In this case there was an original estimate of £441,063. The reduction was due to an amended estimate made by the Acting Engineer-in-Chief for Railways since the railway was referred to the Committee.
12 Nov. to 24 April.	Railway from Grafton to the Tweed.	1,728,100	800,000	.....	928,100	The Committee recommended that this railway should be constructed from Lismore to Murwillumbah, instead of from Grafton to Murwillumbah, the Committee's recommendation involving a length of about 60½ miles as compared with 140 miles 76 chains, the length of the line as referred to them by the Legislative Assembly.
15 Jan. to 24 April.	Railway from Cootamundra to Temora.	138,000 (or £3,656 per mile.)	125,400 (or £3,300 per mile.)	.....	12,600	The Committee considered that the cost of constructing this railway should not exceed £3,300 per mile.
23 Jan. to 24 April.	Railway from Moss Vale to Robertson.	84,900	.....	.....	84,900	The Committee negatived this proposal because they considered another route, described in their report, was preferable.
23 Jan. to 25 Mar.	Railway from Mudgee to Gulgong.	109,330	.....	.....	109,330	The Committee decided against this work, on the ground that any extension of the Mudgee Railway should form part of a more comprehensive proposal, the consideration of which should be deferred until after the suggestion for the connection of the Northern and Western systems, by a line between Dubbo and Werris Creek, has been dealt with.
12 Feb. to 24 April.	Bridge over Tarban Creek, Parramatta River.	26,000	.....	.....	26,000	The Committee considered this bridge to be unnecessary.
20 Feb. to 15 April.	Bridge over the Hunter River, at Jerry's Plains.	20,000	.....	.....	20,000	The Committee considered that a less expensive bridge would be sufficient to meet requirements.
25 Feb. to 24 April.	Bridge to connect Bullock Island with the mainland at Newcastle.	33,000	.....	.....	33,000	The Committee considered that this proposed expenditure was premature, pending certain reclamation works.
12 Feb. to 21 May.	Iron Bridge at Cowra ...	26,537	26,537	.....	.....	The original proposal represented an expenditure of £69,971, which amount was afterwards reduced to £26,537, as the result of a revision of the system of bridge-building in the Colony. Recommended as proposed.
22 Jan. to 21 May.	Railway from Molong to Parkes and Forbes.	433,000	433,000	.....	.....
28 May to 8 July.	Hospital for the Insane upon the Kenmore Estate, near Goulburn.*	120,000	.....	.....	120,000	This proposed work, after being partly considered, was withdrawn from the Committee by resolution of the Assembly.
28 May to 21 Aug.	Railway to connect the North Shore Railway with the deep waters of Port Jackson, at Milson's Point. (Second Reference).	231,156	231,156	.....	.....	This proposal was before the Committee on a previous occasion (estimated cost, £262,000), when it was negatived; but having been referred to the Committee for further consideration, and circumstances appearing in the second inquiry which justified the construction of the railway, the Committee approved of the proposed work.
10 Dec. to 13 May, 1891.	Hospital Buildings, Macquarie-street.	140,000	56,000	.....	84,000	In this case, two sets of plans for the buildings were submitted to the Committee, one representing a design that was estimated to cost £140,000, and the other a design to cost £56,000, and the Committee approved of the latter.
1891. 11 Feb. to 25 Mar.	College for the Training of Teachers of Public Schools.	37,500	37,500	.....	.....	Recommended as proposed.
19 Feb. to 21 April.	Extension of the Kiama to Nowra Railway into the town of Nowra.	75,000	75,000	.....	.....	Recommended as proposed.
24 Feb. to 14 May.	Railway from Cobar to Cockburn.	1,168,000	1,018,000	.....	150,000	The Committee recommended the construction of this railway as far as Broken Hill only, which would reduce the proposed expenditure by £150,000.
22 Jan., 1890, to 19 May, 1891.	Cable Tramway from King-st., via William-street, to Ocean-street.	80,000	80,000	.....	.....	Recommended as proposed.
25 Nov., 1890, to 3 June, 1891.	Cable Tramway through George, Pitt, and Harris Streets, Sydney.	120,000	.....	.....	120,000	The Committee considered that it was not expedient at present, for reasons stated in their report, that this tramway should be constructed.
	Carried forward.....£	9,525,818	6,947,112	34,938	2,613,644	

List of Proposed Public Works inquired into by the Committee, &c.—*continued.*

Date of inquiry.	Proposed Work.	Expenditure proposed by the Government.	Expenditure recommended by the Committee.	Amount in excess of that proposed.	Amount in reduction of that proposed.	Remarks.
1892. 5 May, to 2 June.	Brought forward .. £ Improvements at Darling Island.	9,525,818 142,000	6,947,112	£ 34,938	£ 2,613,644 142,000	The Committee considered that the proposed works might be postponed for the present without inconvenience, and that a more suitable design might be submitted.
7 June, to 12 July.	Stormwater sewers discharging into Johnstone's Bay.	51,352	51,352	.....	.....	Recommended as proposed.
15 June, to 4 Aug.	Reservoir at Centennial Park for Sydney Water Supply.	83,000	83,000	.....	.....	Recommended with an alteration of site.
14 July, to 24 Aug.	Water Supply for Wollongong and the surrounding districts.	66,000	30,000	.....	36,000	The Committee found that the Water Supply proposed for the surrounding districts was not needed, and that the estimate of cost for supplying Wollongong might be reduced to £30,000.
23 July, to 24 Aug.	Second pipe-line from Walka to Buttai, for Hunter River District Water Supply.	50,000	50,000	.....	.....	Recommended as proposed.
26 July, to 9 Aug.	Sewerage works at Cottage Creek.	25,000	13,000	.....	12,000	The amount of £25,000 provided for a covered sewer; but the Committee found that a cover was not necessary at present, and that by constructing an open sewer the cost could be reduced by £12,000.
21 April, 1891, to 27 May, 1892.	Railway from Glen Innes to Inverell.*	427,400	.....	.....	427,400	The evidence in this case showed that the estimated cost of constructing the railway was excessive, and indicated the probability of a serious annual loss in the working of the line. In addition to this, the Committee were not as fully informed as desirable with regard to connecting Inverell not only with the Great Northern Railway but with the coast, a matter of considerable importance in the inquiry.
31 May, to 18 Aug.	Railway from Jerilderie to Deniliquin.	148,000	.....	.....	148,000	The Committee were of opinion that the consideration of this proposed work should be postponed until it should be determined by Parliament as a matter of public policy to purchase the Deniliquin to Moama Railway.
12 July, to 24 Aug.	Lunatic Asylum at Kenmore, near Goulburn. (Second Reference).	150,000	150,000	.....	.....	Recommended as proposed.
14 June, to 28 Sept.	Railway from Grafton to Lismore.	602,000 (or £8,000 per mile.)	108,000 (or £6,000 per mile.)	.....	554,000	The Committee decided that, for the present, only the Lismore to Casino section of the proposed railway should be constructed, that the cost should not exceed £6,000 per mile, and that the betterment principle be applied to the land to be served by the proposed line.
10 July, to 26 Oct.	Railway from Eden to Bega.	564,000 (or £15,350 per mile.)	.....	.....	564,000	The Committee considered that the present resources of the district did not warrant the construction of such an expensive line, but they were of opinion that a cheaply constructed railway might be favorably considered.
22 June, to 4 Oct.	Sewerage Works for Parramatta.	75,926	.....	.....	75,926	The Committee were of opinion that the sewage farm included in the scheme was too small for the purpose, and that the sewage should be dealt with by precipitation and filtration or other effective modern process at a proposed pumping station at Clay Cliff Creek.
12 Oct. to 21 Dec.	Water Supply for Tamworth.	22,500	22,500	.....	.....	Recommended as proposed, with a provision as to the quantity of water obtainable, and the resumption of land surrounding the well in the drift forming the source of supply.
14 Sept. to 16 Nov.	Water Supply for Lithgow	15,000	15,000	.....	.....	Recommended as proposed.
15 Sept. to 16 Nov.	Water Supply for Armidale.	43,500	43,500	.....	.....	Recommended as proposed.
17 Nov. to 10 Jan. 1893.	Railway from Glen Innes to Inverell. (Second Reference).	421,400 (or £7,975 per mile).	369,862 (or £7,000 per mile).	.....	51,538	The Committee considered it expedient this railway should be constructed, provided that the cost did not exceed £7,000 per mile, that special local rates were charged until the railway paid working expenses and interest on cost of construction, and that the betterment principle was applied to the land served by the railway.
14 Feb. to 8 Mar.	Waterworks for the town of Junee.	45,000	45,000	.....	.....	The Committee recommended that these works should be carried out, conditionally upon the Railway Commissioners undertaking to enter into an agreement for a period of not less than ten years to pay a minimum of £1,000 per annum for water supplied for railway purposes at Junee and Bethungra.
14 Nov., 1893, to 11 Jan., 1894.	Railway from Narrabri to Moree.	153,000	153,000	.....	.....	Recommended as proposed, with the condition that the work be not undertaken until a Betterment Act is passed.
		£ 12,670,896	8,081,326	34,938	4,624,508	

* The proposed works marked with an asterisk have been twice referred to the Committee, and together, as first referred, represent an estimated expenditure of £809,400, by which amount the total expenditure proposed by the Government and the amount in reduction of that proposed expenditure as shown by the result of the Committee's inquiries should be reduced. A further reduction should be made of £108,000 as the estimated cost of the railway recommended by the Committee between Lismore and Casino, which while being a portion of the proposed line between Grafton and Lismore is also a part of the line originally proposed from Grafton to the Tweed. With these reductions the total expenditure proposed by the Government is £11,753,496, and the saving effected by the Committee, allowing for the £34,938 excess, £3,672,170.

FIRST COMMITTEE—continued.

Proposed Work.	Date of reference to Committee.	Date upon which inquiry was opened.	Date upon which Sectional Committee was appointed.	Date of Sectional Committee's Report.	Date of Committee's Report.	Statement of Committee's recommendation.	How dealt with by Parliament.	Date of Parliamentary action.
Second Pipe between Potts' Hill and Crown-street.	1888. 23 July.....	1888. 26 September	.....	.....	1888. 22 October ...	Recommended as proposed.	Passed [Sydney Water Supply (Partial Reduplication) Bill].	Legislative Assembly—24 July, 1889—Bill read third time. Legislative Council—17 Sept., 1889—Bill read third time; 30 Sept., 1889—Assent reported.
Dredge and Plant for Sydney Harbour.	23 „	Dealt with by Third Committee.	.....	.....	.....	See Third Committee.	See Third Committee.	See Third Committee.
Improvements to the Entrance of the Richmond River.	23 „ .....	„ „	.....	.....	.....	„ „	„ „	„ „
Bridge at the Spit, Middle Harbour.	23 „	Dealt with by Second Committee.	.....	.....	.....	See Second Committee.	See Second Committee.	See Second Committee.
New Central Police Court	23 „	13 September	.....	.....	22 October ...	Recommended as proposed.	Passed.	Legislative Assembly—15 May, 1889—Bill read third time. Legislative Council—23 May, 1889—Bill read third time; 30 May, 1889—Assent reported.
Improvements to the Entrance of the Clarence River.	23 „	Dealt with by Third Committee.	.....	.....	.....	See Third Committee.	See Third Committee.	See Third Committee.
Drainage Works, Manly	23 „	4 October ...	.....	.....	22 October ...	The Committee recommended the adoption of a modified plan of these drainage works, by which the estimated total cost would not exceed £22,000, or £12,114 less than the original estimate.	Passed.	Legislative Assembly—23 May, 1889—Bill read third time; 3 Sept., 1889—Bill finally passed. Legislative Council—20 June, 1889—Bill read third time; 12 Sept., 1889—Assent reported.
Drainage Works, North Shore	23 „	10 „ ...	.....	.....	22 „ ..	The Committee recommended the adoption of the complete scheme proposed in relation to this work, the estimated cost of which, as shown by the evidence, was £107,000.	Passed.	Legislative Assembly—17 April, 1889—Bill read third time; 15 May, 1889—Bill finally passed. Legislative Council—9 May, 1889—Bill read third time; 22 May, 1889—Assent reported.
Drainage Works for the Western Suburbs.	23 „	Dealt with by Second and Third Committees.	.....	.....	.....	See Third Committee.	See Third Committee.	See Third Committee.
Harbour Improvements at Newcastle.	23 „	31 August ...	.....	.....	22 October ...	Recommended as proposed.	Passed.	Legislative Assembly—11 April, 1889—Bill read third time. Legislative Council—24 April, 1889—Bill read third time; 30 April, 1889—Assent reported.

SECOND COMMITTEE--FROM 24 OCTOBER, 1888, TO 19 JANUARY, 1889.

MEMBERS OF THE COMMITTEE.

LEGISLATIVE COUNCIL.

The Honorable JOHN LACKEY, Chairman.
The Honorable GEORGE CAMPBELL.

The Honorable WILLIAM HENRY SUTTON.
The Honorable JAMES WATSON.

The Honorable FREDERICK THOMAS HUMPHERY.

LEGISLATIVE ASSEMBLY.

JOSEPH PALMER ABBOTT, Esquire, Vice-Chairman.
HENRY COPELAND, Esquire.
JACOB GARRARD, Esquire.
ALEXANDER KETHEL, Esquire.

SYDNEY SMITH, Esquire.
THOMAS MICHAEL SLATTERY, Esquire.
JOHN RENDELL STREET, Esquire.
DANIEL O'CONNOR, Esquire.

Proposed Work	Date of reference to Committee	Date upon which inquiry was opened.	Date upon which Sectional Committee was appointed.	Date of Sectional Committee's Report.	Date of Committee's Report.	Statement of Committee's recommendation.	How dealt with Parliament.	Date of Parliamentary action.
Wharfage Accommodation, Woolloomooloo Bay.	1888. 23 July	1888. 19 September .....	.....	.....	1889. 10 January ...	The Committee were of opinion that the proposed expenditure was not justified either by the requirements in connection with the wharfage accommodation of the port, or by the nature of the proposal if regarded as a scheme for the improvement of a very valuable Government property. See Third Committee.	Not dealt with.	.....
Dredge and Plant for Sydney Harbour.	23 ,,	Dealt with by Third Committee.	.....	.....	.....	.....	See Third Committee.	See Third Committee.
Improvements to the Entrance of the Richmond River.	23 ,, .....	,, ,, .....	.....	.....	.....	,, ,, .....	,, ,, .....	,, ,, .....
Bridge at the Spit, Middle Harbour.	23 ,,	16 November .....	.....	.....	11 January ...	The Committee decided that the proposed expenditure was not justified by the evidence, and that a steam-punt would meet the requirements of the district in the vicinity of the proposed work for some years to come. See Third Committee.	Not dealt with.	.....
Improvements to the entrance of the Clarence River.	23 ,,	Dealt with by Third Committee.	.....	.....	.....	.....	See Third Committee.	See Third Committee
Drainage Works for the Western Suburbs.	23 ,,	7 December .....	.....	.....	Inquiry completed by Third Committee.	,, ,,	,, ,,	,, ,,

THIRD COMMITTEE—FROM 7 JUNE, 1889, TO 6 JUNE, 1891.

MEMBERS OF THE COMMITTEE.

LEGISLATIVE COUNCIL.

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| * The Honorable JOHN LACKEY, Chairman. | The Honorable FREDERICK THOMAS HUMPHRY. |
| The Honorable ANDREW GARRAN. | The Honorable WILLIAM JOSEPH TRICKETT. |
| * The Honorable JAMES WATSON. | * The Honorable GEORGE HENRY COX. |

LEGISLATIVE ASSEMBLY.

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| * JOSEPH PALMER ABBOTT, Esquire, Chairman. | * JOHN SUTHERLAND, Esquire. |
| * JACOB GARRARD, Esquire, Vice-Chairman. | EDWARD WILLIAM O'SULLIVAN, Esquire. |
| HENRY COPELAND, Esquire. | * JOHN HURLEY, Esquire. |
| JAMES EBENEZER TONKIN, Esquire. | * CHARLES ALFRED LEE, Esquire. |
| WILLIAM SPRINGTHORPE DOWEL, Esquire. | * WILLIAM MCCOURT, Esquire. |
| | * JAMES PATRICK GARVAN, Esquire. |

[* Shortly after the first meeting of the third Committee, John Sutherland, Esquire, died, and his place was filled by the appointment of Charles Alfred Lee, Esquire. Subsequently the Honorable James Watson resigned his seat on the Committee, and the Honorable George Henry Cox was appointed in his place. On 22nd October, 1890, Mr. Joseph Palmer Abbott, having been appointed Speaker of the Legislative Assembly, resigned his position as Chairman and member of the Committee. The Honorable John Lackey, who at that time was Vice-Chairman of the Committee, was appointed Chairman in Mr. Abbott's place, and Mr. Jacob Garrard was chosen as Vice-Chairman. Mr. William McCourt was appointed a member of the Committee on 16th July, 1890, in the place of Mr. John Hurley, whose seat became vacant by reason of his resignation from the Legislative Assembly; and Mr. James Patrick Garvan was appointed a member on the 6th November, 1890, in the room of Mr. Joseph Palmer Abbott.]

Proposed Work.	Date of reference to Committee.	Date upon which inquiry was opened.	Date upon which Sectional Committee was appointed.	Date of Sectional Committee's Report.	Date of Committee's Report.	Statement of Committee's recommendation.	How dealt with by Parliament.	Date of Parliamentary action.
Dredge and Plant for Sydney Harbour.	23 July, 1888	22 Jan., 1890	.....	.....	6 Feb., 1890	The evidence showed that this class of dredge was not required.	Not dealt with.	.....
Improvements to the Entrance of the Richmond River.	23 ,, ,,	26 June, 1889	.....	.....	30 Sept., 1889	The Committee recommended that the proposed works should be carried out in a certain order, so that the results from the works first constructed might be ascertained before others were proceeded with.	Passed.	Legislative Assembly—23 July, 1890—Bill read third time. Legislative Council—28 Aug., 1890—Bill read third time; 3 Sept., 1890—Assent reported.
Improvements to the Entrance of the Clarence River.	23 ,, ,,	23 Oct., ,,	14 Nov., 1889	28 Jan., 1890	2 April, 1890	In this case the Committee recommended the construction of only a portion of the works proposed, as they were of opinion that when this portion had been constructed it might be found that the remainder would not be required.	Passed.	Legislative Assembly—23 July, 1890—Bill read third time. Legislative Council—17 Sept., 1890—Bill read third time; 1 Oct., 1890—Assent reported.
Drainage Works for the Western Suburbs.	23 ,, ,,	7 Dec., 1888	.....	.....	27 Aug., 1889	Recommended as proposed.	Passed.	Legislative Assembly—26 Sept., 1889—Bill read third time. Legislative Council—26 Sept., 1889—Bill read third time; 30 Sept., 1889—Assent reported.

THIRD COMMITTEE—continued.

Proposed Work.	Date of reference to Committee.	Date upon which inquiry was opened.	Date upon which Sectional Committee was appointed.	Date of Sectional Committee's Report.	Date of Committee's Report.	Statement of Committee's recommendation.	How dealt with by Parliament.	Date of Parliamentary action.
Railway from Goulburn to Crookwell.	31 July, 1889	22 Aug., 1889	29 Aug., 1889	17 Sept., 1889	19 Dec., 1889	The Committee considered that the cost of this railway should not exceed £4,500 per mile, and that a saving should also be effected by utilizing a certain portion of the present main line instead of taking the proposed railway through a part of the city of Goulburn.	Negated by the Legislative Council.	Legislative Assembly—10 July, 1890—Bill read third time. Legislative Council—6 August, 1890—Second reading resolved in the negative.
Railway from Nyngan to Cobar	1 Aug., "	25 Sept., "	24 Sept., "	31 Oct., "	18 Feb., 1890	The Committee recommended the construction of this railway as part of a line which should be extended to Wilcannia and Broken Hill.	Passed.	Legislative Assembly—10 July, 1890—Bill read third time. Legislative Council—17 July, 1890—Bill read third time; 23 July, 1890—Assent reported.
Railway from Kiama to Nowra	1 " "	4 Dec., "	14 Jan., 1890	30 Jan., 1890	22 April, "	In this case there was an original estimate of £441,663. The amount recommended by the Committee was £381,390. The reduction was due to an amended estimate made by the Acting Engineer-in-Chief for Railways after the railway was referred to the Committee.	Passed.	Legislative Assembly—10 July, 1890—Bill read third time. Legislative Council—7 Aug., 1890—Bill read third time; 13 Aug., 1890—Assent reported.
Railway from Marrickville to the Burwood Road.	1 " "	19 Nov., "	.....	.....	2 " "	Recommended as proposed.	Passed.	Legislative Assembly—11 Dec., 1890—Bill read third time. Legislative Council—18 Dec., 1890—Bill read third time; 19 May, 1891—Assent reported.
Railway from Culcairn to Corowa.	6 " "	29 Aug., "	29 Aug., 1889	11 Sept., 1889	12 Dec., 1889	The Committee were of opinion that this line should be constructed at a cost not exceeding £3,500 per mile.	Passed.	Legislative Assembly—10 July, 1890—Bill read third time. Legislative Council—31 July, 1890—Bill read third time; 6 Aug., 1890—Assent reported.
Breakwater at Byron Bay	6 " "	31 Oct., "	14 Nov., "	28 Jan., 1890	15 April, 1890	The original estimate for this work was £162,000. The estimate placed before the Committee, which they adopted in their recommendation, was £241,723. The increase was due to a difficulty in obtaining stone.	Negated by the Legislative Council.	Legislative Assembly—17 July, 1890—Bill read third time. Legislative Council—15 Oct., 1890—Bill negated in Council on motion, "That it be read the second time this day six months."
Railway to connect North Shore Railway with Port Jackson, at Milson's Point.	7 " "	9 " "	.....	.....	11 Dec., 1889	The Committee considered, for various reasons stated in their report on the subject, that the work as proposed should not be carried out.	See second reference.	See second reference.
Railway from Grafton to the Tweed.	27 Sept., "	12 Nov., "	14 Nov., "	28 Jan., "	15 April, 1890	The Committee recommended that this railway should be constructed from Lismore to Murwillumbah, instead of from Grafton to Murwillumbah, the Committee's recommendation involving a length of about 60½ miles as compared with 140 miles 76 chains, the length of the line as referred to them by the Legislative Assembly.	Passed.	Legislative Assembly—17 July, 1890—Bill (Lismore to the Tweed Railway Bill) read third time. Legislative Council—10 Sept., 1890—Bill read third time; 24 Sept., 1890—Assent reported.
Railway from Cootamundra to Temora.	27 " "	15 Jan., 1890	16 Jan., 1890	11 Feb., "	23 " "	The Committee considered that the cost of constructing this railway should not exceed £3,300 per mile.	Passed.	Legislative Assembly—23 July, 1890—Bill read third time. Legislative Council—17 Sept., 1890—Bill read third time; 1 Oct., 1890—Assent reported.

THIRD COMMITTEE—continued.

Proposed Work.	Date of reference to Committee.	Date upon which inquiry was opened.	Date upon which Sectional Committee was appointed.	Date of Sectional Committee's Report.	Date of Committee's Report.	Statement of Committee's recommendation.	How dealt with by Parliament.	Date of Parliamentary action.
Railway from Mudgee to Gulgong.	27 Sept., 1889	23 Jan., 1890	12 Mar., 1890	26 Mar., 1890	6 May, 1890	The Committee decided against this work on the ground that any extension of the Mudgee Railway should form part of a more comprehensive proposal, the consideration of which should be deferred until after the suggestion for the connection of the Northern and Western systems, by a line between Dubbo and Werris Creek, had been dealt with.	Not dealt with.	.....
Railway from Moss Vale to Robertson.	1 Oct., "	23 " "	30 Jan., "	12 Feb., "	29 April, "	The Committee negatived this proposal because they considered another route, described in their report, was preferable.	" "	.....
Railway from Molong to Parkes and Forbes.	1 " "	22 " "	12 Feb., "	19 Mar., "	21 May, "	Recommended as proposed.	Passed.	Legislative Assembly—23 July, 1890—Bill read third time. Legislative Council—21 Aug., 1890—Bill read third time; 27 Aug., 1890—Assent reported.
Bridge over Tarban Creek, Parramatta River.	1 " "	12 Feb., "	.....	.....	15 April, "	The Committee considered this bridge to be unnecessary.	Not dealt with.	.....
Bridge over the Hunter River, at Jerry's Plains.	1 " "	20 " "	4 Mar., "	11 Mar., "	15 " "	The Committee considered that a less expensive bridge would be sufficient to meet requirements.	" "	.....
Bridge to connect Bullock Island with the Mainland at Newcastle.	1 " "	25 " "	4 " "	11 " "	29 " "	The Committee considered that this proposed expenditure was premature, pending the carrying out of certain reclamation works.	" "	.....
Iron Bridge at Cowra	1 " "	12 " "	18 Feb., "	19 " "	21 May, "	The original proposal represented an expenditure of £69,971, which amount was afterwards reduced to £26,537, as the result of a revision of the system of bridge-building in the Colony, and the construction of the bridge at the reduced cost was recommended by the Committee.	Passed.	Legislative Assembly—23 July, 1890—Bill read third time. Legislative Council—21 Aug., 1890—Bill read third time; 27 Aug., 1890—Assent reported.
Hospital for the Insane upon the Kenmore Estate, near Goulburn.	1 " "	28 May, "	.....	.....	Inquiry not completed.	This proposed work, after being partly considered, was withdrawn from the Committee by resolution of the Assembly.	Rescinded.	Legislative Assembly—2 July, 1890—Resolution passed rescinding previous resolution referring proposed work to the Committee.
Offices for Board of Water Supply and Sewerage.	1 " "	14 Jan., "	.....	.....	11 Feb., 1890	Recommended as proposed.	Passed.	Legislative Assembly—7 Nov., 1890—Bill read third time. Legislative Council—20 Nov., 1890—Bill read third time; 27 Nov., 1890—Assent reported.
Reticulation of Western Suburbs Drainage Scheme.	1 " "	14 " "	.....	.....	6 " "	" "	"	Legislative Assembly—23 July, 1890—Bill read third time. Legislative Council—24 Sept., 1890—Bill read third time; 8 Oct., 1890—Assent reported.

THIRD COMMITTEE—continued.

Proposed Work.	Date of reference to Committee.	Date upon which inquiry was opened.	Date upon which Sectional Committee was appointed.	Date of Sectional Committee's Report.	Date of Committee's Report.	Statement of Committee's recommendation	How dealt with by Parliament.	Date of Parliamentary action.
Extension of Sydney Water Supply to Southern Suburbs—Hurstville, Rockdale.	1 Oct., 1889	14 Jan., 1890	.....	.....	11 Feb., 1890	This expenditure was rendered unnecessary by reason of a temporary water-supply scheme being sufficient to meet requirements for some years.	Not dealt with.	.....
Cable Tramway from King-street, via William-street, to Ocean-street.	" "	22 " "	.....	.....	2 June, 1891	Recommended as proposed.	Passed.	Legislative Assembly—8 March, 1892—Bill read third time. Legislative Council—10 March, 1892—Bill read third time; 17 March, 1892—Assent reported.
Cable Tramway through George, Pitt, and Harris Streets, Sydney.	1 " "	25 Nov. "	.....	.....	4 " "	The Committee considered that it was not expedient, for reasons stated in their report, that this tramway should be constructed.	Not dealt with.	.....
Railway to connect North Shore Railway with the deep waters of Port Jackson, at Milson's Point (second reference).	8 May, 1890	28 May, "	.....	.....	21 Aug., 1890	This proposal was before the Committee on a previous occasion when it was negatived; but having been referred to the Committee for further consideration, and on circumstances appearing in the second inquiry which justified the construction of the railway, the Committee approved of the proposed work.	Passed.	Legislative Assembly—12 Nov., 1890—Bill read third time. Legislative Council—20 Nov., 1890—Bill read third time; 27 Nov., 1890—Assent reported.
College for the Training of Teachers of Public Schools.	21 Nov., "	11 Feb., 1891	.....	.....	19 Mar., 1891	Recommended as proposed.	Not dealt with.	.....
Hospital Buildings, Macquarie-street.	3 Dec., "	10 Dec., 1890	.....	.....	12 May, "	In this case two sets of plans for the buildings were submitted to the Committee, one representing a design that was estimated to cost £140,000, and the other a design to cost £56,000, and the Committee approved of the latter.	Passed.	Legislative Assembly—9 March, 1892—Bill read third time. Legislative Council—17 March, 1892—Bill read third time; 29 March, 1892—Assent reported.
Railway from Cobar to Cockburn.	19 " "	24 Feb., 1891	.....	.....	14 " "	The Committee recommended the construction of this railway as far as Broken Hill only, thereby reducing the proposed expenditure (£1,168,000) by £150,000.	Not dealt with.	.....
Railway from Glen Innes to Inverell.	19 " "	21 April, "	23 April, 1891	2 June, 1891	See Fourth Committee.	See Fourth Committee.	See Fourth Committee.	.....
Extension of the Kiama to Nowra Railway into the town of Nowra.	19 " "	19 Feb., "	.....	.....	21 April, 1891	Recommended as proposed.	Not dealt with.	.....

FOURTH COMMITTEE—FROM 31 MARCH, 1892, TO 12 JANUARY, 1894.

MEMBERS OF THE COMMITTEE.

LEGISLATIVE COUNCIL.

The Honorable WILLIAM HENRY SUTTOR, Vice-Chairman.
 The Honorable JAMES HOSKINS.
 The Honorable FREDERICK THOMAS HUMPHERT.

* The Honorable ANDREW GARRAN, LL.D.
 The Honorable JOHN DAVIES, C.M.G.
 * The Honorable WILLIAM JOSEPH TRICKETT.

LEGISLATIVE ASSEMBLY.

JACOB GARREARD, Esquire, Chairman.
 THOMAS THOMSON EWING, Esquire.
 WILLIAM CHANDOS WALL, Esquire.
 WILLIAM McCOURT, Esquire.

JOHN CASII NEILD, Esquire.
 EDWARD WILLIAM O'SULLIVAN, Esquire.
 CHARLES COLLINS, Esquire.
 HENRY DAWSON, Esquire.

[* The Honorable Andrew Garran, LL.D., on 5th October, 1892, resigned his seat as a member of the Committee, and on 12th October, 1892, the Honorable William Joseph Trickett was appointed to fill the vacancy.]

Proposed Work.	Date of reference to Committee.	Date upon which inquiry was opened.	Date upon which Sectional Committee was appointed.	Date of Sectional Committee's Report.	Date of Committee's Report.	Statement of Committee's recommendation.	How dealt with by Parliament.	Date of Parliamentary action.
Improvements at Darling Island	29 Mar., 1892	5 May, 1892	.....	.....	2 June, 1892	The Committee considered that the proposed works might be postponed for the present without inconvenience, and that a more suitable design might be submitted.	Not dealt with.	.....
Water Supply for Tamworth...	29 ,, ,,	12 Oct., ,,	12 Oct., 1892	15 Nov., 1892	21 Dec., ,,	Recommended as proposed with a provision as to the quantity of water obtainable, and the resumption of land surrounding the well in the drift forming the source of supply.	,, ,,	.....
Storm-water Sewers discharging into Johnstone's Bay.	29 ,, ,,	7 June, ,,	.....	.....	12 July, ,,	Recommended as proposed.	.....	The money for these works was voted in the estimates for 1891 and 1892.
Reservoir at Centennial Park for Sydney Water Supply.	29 ,, ,,	15 ,, ,,	.....	.....	4 Aug., ,,	Recommended with an alteration of site.	Not dealt with.	.....
Water Supply for Wollongong and the Surrounding Districts.	29 ,, ,,	14 July, ,,	.....	.....	24 ,, ,,	The Committee found that the Water Supply proposed for the surrounding districts was not needed, and that the estimate of cost for supplying Wollongong might be reduced to £30,000.	,, ,,	.....
Second Pipe-line from Walka to Buttai, for Hunter River District Water Supply.	29 ,, ,,	23 ,, ,,	.....	.....	16 ,, ,,	Recommended as proposed.	,, ,,	.....
Sewerage Works at Cottage Creek.	29 ,, ,,	26 ,, ,,	.....	.....	9 ,, ,,	The estimated cost of this work was £25,000, which provided for a covered sewer; but the Committee found that a cover was not necessary, and that by constructing an open sewer the cost could be reduced by £12,000.	,, ,,	.....
Water Supply for Lithgow ...	29 ,, ,,	14 Sept., ,,	22 Oct., ,,	24 Oct., ,,	16 Nov., ,,	Recommended as proposed.	Passed.	Legislative Assembly—2 February, 1893—Resolution passed that the works be carried out.
Sewerage Works for Parramatta	29 ,, ,,	22 June, ,,	4 Oct., ,,	The construction of this work the Committee did not recommend, as they were of opinion that the sewage farm included in the scheme was too small for the purpose, and that the sewage should be dealt with by precipitation and filtration, or other effective modern process, at a proposed pumping station at Clay Cliff Creek.	Not dealt with.

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FOURTH COMMITTEE—continued.

Proposed Work.	Date of reference to Committee.	Date upon which inquiry was opened.	Date upon which Sectional Committee was appointed.	Date of Sectional Committee's Report.	Date of Committee's Report.	Statement of Committee's recommendation.	How dealt with by Parliament.	Date of Parliamentary action.
Water Supply for Armidale ...	29 Mar., 1892	15 Sept., 1892	12 Oct., 1892	20 Oct., 1892	16 Nov., 1892	Recommended as proposed.	Not dealt with.	.....
Railway from Eden to Bega ...	29 „ „	10 July, „	11 Aug., „	7 Sept., „	26 Oct., „	The Committee considered that the resources of the district did not warrant the construction of such an expensive line, but they were of opinion that a cheaply constructed railway might be favorably considered.	„ „	.....
Railway from Grafton to Lismore.	29 „ „	14 June, „	15 June, „	10 Aug., „	28 Sept., „	The Committee decided that, for the present, only the Lismore to Casino section of the proposed railway should be constructed, that the cost should not exceed £6,000 per mile, and that the betterment principle be applied to the land to be served by the proposed line.	„ „	.....
Railway from Glen Innes to Inverell.	29 „ „	6 April, „	23 April, 1891 (See Third Committee.)	2 June, 1891 (See Third Committee.)	27 May, „	The evidence in this case, which was partly inquired into by the Third Committee and partly by the Fourth Committee, showed that the estimated cost of constructing the railway was excessive, and indicated the probability of a serious annual loss in the working of the line. In addition to this, the Committee were not as fully informed as desirable with regard to connecting Inverell not only with the Great Northern Railway but with the coast, a matter of considerable importance in the inquiry. The Committee therefore did not recommend that the railway should be constructed.	See second reference.	.....
Railway from Jerilderie to Deniliquin.	29 „ „	31 May, „	2 June, 1892	23 June, 1892	18 Aug., „	The Committee were of opinion that the consideration of this proposed work should be postponed until it should be determined by Parliament as a matter of public policy to purchase the Deniliquin to Moama Railway.	Not dealt with.	.....
Lunatic Asylum at Kenmore, near Goulburn (second reference).	31 „ „	12 July, „	.....	.....	24 „ „	Recommended as proposed.	„ „	.....
Railway from Glen Innes to Inverell (second reference).	27 Oct., „	17 Nov., „	23 Nov., „	13 Dec., „	10 Jan., 1893	The Committee considered it expedient this railway should be constructed, provided that the cost did not exceed £7,000 per mile, that special local rates were charged until the railway paid working expenses and interest on cost of construction, and that the betterment principle was applied to the land served by the railway.	„ „	.....
Waterworks for the town of Junee.	2 Feb., 1893	14 Feb., 1893	15 Feb., 1893	28 Feb., 1893	14 Mar., „	The Committee recommended that the proposed works should be carried out, conditionally on the Railway Commissioners entering into an agreement for a period of not less than ten years to pay a minimum of £1,900 per annum for water supplied for railway purposes at Junee and Bethungra.	„ „	.....
Railway from Narrabri to Moree.	1 Nov., „	14 Nov., „	15 Nov., „	5 Dec., „	12 Jan., 1894	Recommended as proposed, with the condition that the work be not undertaken until a Betterment Act is passed.	„ „	.....

PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS.

MINUTES OF PROCEEDINGS.

TUESDAY, 14 NOVEMBER, 1893.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

Jacob Garrard, Esq., Chairman.

<p>The Hon. William Henry Suttor, The Hon. James Hoskins, The Hon. Frederick Thomas Humphery, The Hon. John Davies, C.M.G., The Hon. William Joseph Trickett, Thomas Thomson Ewing, Esq.,</p>	<p>William Chandos Wall, Esq., William McCourt, Esq., John Cash Neild, Esq., Edward William O'Sullivan, Esq., Charles Collins, Esq., Henry Dawson, Esq.</p>
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The minutes of the previous meeting were read, and confirmed.

The Secretary read the following correspondence:—

Letters from the Principal Under Secretary stating that His Excellency the Governor, with the advice of the Executive Council, had approved of the Regulations framed by the Committee under section 17 of the Public Works Act, with the exception of Regulation 16, and that they had been published in a supplementary *Government Gazette*, dated 6th June, 1893.

Opinion of the Attorney-General, declaring Regulation 16 to be *ultra vires*.

Copy of the supplementary *Government Gazette* of 6th June, 1893, containing the Regulations approved.

Letter from the Clerk of the Legislative Assembly informing the Committee that on 1st November, 1893, on motion of Mr. Lyne, the Legislative Assembly had referred to the Committee for consideration and report "the expediency of constructing a line of Railway from Narrabri to Moree, such work to be subject to the provisions of any Act that may be passed dealing generally with the 'betterment principle' with regard to public works."

Letter from Mr. Job Sheldon, M.P., requesting on behalf of others that a Sectional Committee should visit Narrabri West, Wee Waa, and Millie, for the purpose of taking evidence in relation to the proposed railway from Narrabri to Moree, and that the District Surveyor and members of his staff be called to give evidence on the same subject.

Letter from Mr. James Halse, hon. secretary Millie Railway League, requesting that a Sectional Committee visit Millie and take evidence in the Court-house there, with reference to the proposed railway from Narrabri to Moree.

The correspondence was received, and it was resolved that the letters from Mr. Sheldon, M.P., and Mr. Halse, hon. secretary Millie Railway League, be referred to the Sectional Committee to be appointed in connection with the Committee's inquiry respecting the proposed railway.

The following accounts were passed for payment:—

	£	s.	d.
Motherell & Co.—Framing plans	5	16	0
William B. Neilley (<i>Bega Standard</i>)—Advertising visit of the Sectional Committee with reference to the proposed Railway from Eden to Bega ...	0	9	0
William H. Braine (<i>Bega Gazette</i>)—Advertising visit of the Sectional Committee with reference to the proposed Railway from Eden to Bega ...	0	12	0
K. Kennelly, office cleaner, for month of October, 1893	6	0	0
Total... ..	£12	17	0

The Chairman reported that since the last meeting, and in consequence of the work of the Committee being now less than it had been, the Committee's office staff had been reduced by the retirement of Mr. W. D. White and Mr. H. V. O'Meagher.

The Chairman also reported that in conjunction with the Vice-Chairman he had endeavoured to have the estimate of the Committee's yearly expenditure placed upon the Estimates for 1894 and future Estimates under the heading "Legislative Council and Assembly," instead of under that of "Secretary for Public Works" as at present; that the President of the Legislative Council and the Speaker of the Legislative Assembly approved of the proposed alteration; but that in consequence of the Minister for Public Works objecting the proposal had not been carried out.

Mr. Davies moved,—“That the Committee approve of the action of the Chairman and the Vice-Chairman in regard to the position of the Committee's estimate of expenditure upon the Estimates for 1894 and future Estimates.”

The motion was seconded by Mr. Neild, and passed

The Committee proceeded to consider the proposed Railway from Narrabri to Moree.

The Secretary read the resolution of the Legislative Assembly, referring the proposed work to the Committee.

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Joseph Barling, Esq., Under-Secretary, Department of Public Works, and Charles James Saunders, Esq., Chief Draughtsman, Department of Lands, were sworn, and examined.

Mr. Trickett gave notice that he would move at the next meeting of the Committee,—“That Mr. Suttor, Mr. Davies, Mr. O’Sullivan, Mr. McCourt, Mr. Dawson, and Mr. Wall be appointed a Sectional Committee to inspect, take evidence, and report, with reference to the proposed line of railway from Narrabri to Moree.”

The Committee adjourned at 12 minutes past 4, until 2 o’clock p.m. on Wednesday, the following day.

WEDNESDAY, 15 NOVEMBER, 1893.

The Committee met at 2 p.m.

MEMBERS PRESENT :—

Jacob Garrard, Esq., Chairman.

<p>The Hon. William Henry Suttor, The Hon. James Hoskins, The Hon. Frederick Thomas Humphery, The Hon. John Davies, C.M.G., The Hon. William Joseph Trickett, Thomas Thomson Ewing, Esq.,</p>		<p>William Chandos Wall, Esq., William McCourt, Esq., John Cash Neild, Esq., Edward William O’Sullivan, Esq., Charles Collins, Esq., Henry Dawson, Esq.</p>
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The minutes of the previous meeting were read, and confirmed.

The Secretary read the following correspondence :—

Letters from W. M. Borthwick and Theo. Morath, Narrabri, expressing a desire to give evidence with reference to the proposed Railway from Narrabri to Moree.

Letter from the Under-Secretary, Department of Public Works, forwarding, at the request of Mr. Sheldon, M.P., a letter received by him from Mr. Halse, secretary of the Millie Railway League, and also a copy of the report by Mr. R. E. Jones on proposed railway extensions, ordered by the Legislative Assembly to be printed, 29th July, 1891.

The correspondence was received, the letters from Messrs. Borthwick and Morath to be referred to the Sectional Committee to be appointed with reference to the proposed Railway from Narrabri to Moree.

Mr. Trickett moved,—“That Mr. Suttor, Mr. Davies, Mr. O’Sullivan, Mr. McCourt, Mr. Dawson, and Mr. Wall be appointed a Sectional Committee to inspect, take evidence, and report, with reference to the proposed line of railway from Narrabri to Moree.”

Mr. Hoskins seconded the motion.

Mr. O’Sullivan moved,—“That the motion be amended by adding the Chairman (Mr. Garrard) to the Sectional Committee.”

The amendment was seconded by Mr. McCourt, and passed, and the motion as amended was then adopted.

The Committee further considered the proposed railway from Narrabri to Moree.

Henry Deane, Esq., Engineer-in-Chief, Railway Construction Branch, Department of Public Works; and Hugh M’Lachlan, Esq., Secretary to the Railway Commissioners, were sworn, and examined.

The Committee adjourned at 7 minutes to 4, until 2 o’clock p.m. on Thursday, the following day.

THURSDAY, 16 NOVEMBER, 1893.

The Committee met at 2 p.m.

MEMBERS PRESENT :—

Jacob Garrard, Esq., Chairman.

<p>The Hon. William Henry Suttor, The Hon. James Hoskins, The Hon. Frederick Thomas Humphery, The Hon. John Davies, C.M.G., The Hon. William Joseph Trickett, Thomas Thomson Ewing, Esq.,</p>		<p>William Chandos Wall, Esq., William McCourt, Esq., John Cash Neild, Esq., Edward William O’Sullivan, Esq., Charles Collins, Esq., Henry Dawson, Esq.</p>
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The minutes of the previous meeting were read, and confirmed.

The Secretary read the following correspondence :—

Letter from 25 residents of Narrabri, expressing a desire to give evidence in the inquiry with reference to the proposed railway from Narrabri to Moree.

The correspondence was received.

Mr. Wall moved,—“That the name of Mr. Ewing be substituted for that of Mr. Wall in the list of members of the Sectional Committee appointed to inspect, take evidence, and report, with reference to the proposed railway from Narrabri to Moree.”

The motion was seconded by Mr. O’Sullivan, and passed.

The Committee further considered the proposed railway from Narrabri to Moree.

Hugh M’Lachlan, Esq., Secretary to the Railway Commissioners, was sworn, and further examined; John Harper, Esq., Goods Superintendent, Department of Railways; and Carriek Paul, Esq., surveyor, Railway Construction Branch, Department of Public Works, were sworn, and examined.

The Committee adjourned at 19 minutes past 4 o’clock p.m.

TUESDAY,

TUESDAY, 5 DECEMBER, 1893.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

Jacob Garrard, Esq., Chairman.
 The Hon. William Henry Suttor, | William Chandos Wall, Esq.,
 The Hon. James Hoskins, | William McCourt, Esq.,
 The Hon. Frederick Thomas Humphery, | John Cash Neild, Esq.,
 The Hon. John Davies, C.M.G., | Edward William O'Sullivan, Esq.,
 The Hon. William Joseph Trickett, | Charles Collins, Esq.,
 Henry Dawson, Esq.

The minutes of the previous meeting were read, and confirmed.

The Secretary read the following correspondence:—

Letter from the Under Secretary, Department of Lands, with reference to the attendance before the Committee of Mr. F. Poafe, District Surveyor, as a witness in the Committee's inquiry respecting the proposed Railway from Narrabri to Moree.

Memorial from a sub-committee of the Upper Barwon Progress Association with reference to the proposed Railway from Narrabri to Moree,—forwarded to the Committee by the Minister for Public Works.

The correspondence was received.

The following accounts were passed for payment:—

	£	s.	d.
K. Kennelly, office cleaner	6	0	0
L. Malone (<i>Narrabri Herald</i>)—Advertising visit of Sectional Committee on Railway from Narrabri to Moree	1	7	0
Australian Newspaper Co., Ltd. (<i>Australian Star</i>)—Advertising with reference to Railway from Narrabri to Moree	0	12	0
Total	£7	19	0

Mr. Garrard, as Chairman of the Sectional Committee appointed to inspect, take evidence, and report, with reference to the proposed Railway from Narrabri to Moree, brought up the report of the Sectional Committee, and moved that it be received and printed with the evidence taken before the Sectional Committee.

The motion was seconded by Mr. O'Sullivan, and passed.

Mr. Neild moved,—“That at their rising this day the Committee adjourn until 2 o'clock p.m. on Thursday next.”

The motion was seconded by Mr. Davies, and passed.

The Committee further considered the proposed Railway from Narrabri to Moree.

Robert Richards, Esq., grazier; Henry Septimus Badgery, Esq., stock and station agent; and James Moseley, Esq., were sworn, and examined.

The Committee adjourned at 13 minutes past 4, until 2 o'clock p.m. on Thursday, 7th December.

THURSDAY, 7 DECEMBER, 1893.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

Jacob Garrard, Esq., Chairman.
 The Hon. William Henry Suttor, | William Chandos Wall, Esq.,
 The Hon. James Hoskins, | William McCourt, Esq.,
 The Hon. Frederick Thomas Humphery, | John Cash Neild, Esq.,
 The Hon. John Davies, C.M.G., | Edward William O'Sullivan, Esq.,
 The Hon. William Joseph Trickett, | Charles Collins, Esq.,
 Henry Dawson, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the proposed Railway from Narrabri to Moree.

James Moseley, Esq., was sworn, and further examined; Francis William Bacon, Esq., was sworn, and examined.

The Committee adjourned at 4 minutes past 4, until 2 o'clock p.m. on Tuesday, 12 December.

TUESDAY, 12 DECEMBER, 1893.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

Jacob Garrard, Esq., Chairman.
 The Hon. William Henry Suttor, | William Chandos Wall, Esq.,
 The Hon. James Hoskins, | William McCourt, Esq.,
 The Hon. Frederick Thomas Humphery, | John Cash Neild, Esq.,
 The Hon. John Davies, C.M.G., | Edward William O'Sullivan, Esq.,
 The Hon. William Joseph Trickett, | Charles Collins, Esq.,
 Henry Dawson, Esq.

The minutes of the previous meeting were read, and confirmed.

The Secretary read the following correspondence:—

Telegram from Mr. John Taylor, Glen Alvon, Murrurundi, expressing a desire to give evidence before the Committee with reference to the proposed Railway from Narrabri to Moree.

The correspondence was received.

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The Committee further considered the proposed Railway from Narrabri to Moree.

Francis William Bacon, Esq., was sworn, and further examined.

Frederick Poate, Esq., District Surveyor, Department of Lands, and Edward C. Weller, Esq., Deputy Registrar of Brands and Clerk-in-charge, Stock Branch, Department of Mines, were sworn, and examined.

The Committee adjourned at 37 minutes past 4 o'clock, until 2 o'clock p.m. on Wednesday, the following day.

WEDNESDAY, 13 DECEMBER, 1893.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

Jacob Garrard, Esq., Chairman.

The Hon. William Henry Suttor,	William Chandos Wall, Esq.,
The Hon. James Hoskins,	William McCourt, Esq.,
The Hon. Frederick Thomas Humphery,	John Cash Neild, Esq.,
The Hon. John Davies, C.M.G.,	Edward William O'Sullivan, Esq.,
The Hon. William Joseph Trickett,	Charles Collins, Esq.,

Henry Dawson, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the proposed Railway from Narrabri to Moree.

Hugh Millar, Esq., Inspector of pastoral properties for the Australian Mortgage, Land, and Finance Company, was sworn, and examined.

John Harper, Esq., Railway Goods Superintendent, Department of Railways, was sworn, and further examined.

The Committee adjourned at 5 minutes past 4, until 2 o'clock p.m. on Thursday, the following day.

THURSDAY, 14 DECEMBER, 1893.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

Jacob Garrard, Esq., Chairman.

The Hon. William Henry Suttor,	William Chandos Wall, Esq.,
The Hon. James Hoskins,	William McCourt, Esq.,
The Hon. Frederick Thomas Humphery,	John Cash Neild, Esq.,
The Hon. John Davies, C.M.G.,	Edward William O'Sullivan, Esq.,
The Hon. William Joseph Trickett,	Charles Collins, Esq.,

Henry Dawson, Esq.

The minutes of the previous meeting were read, and confirmed.

The Committee further considered the proposed Railway from Narrabri to Moree.

John Taylor, Esq., Glen Alvon, Murrurundi; and Robert Edward Jones, Esq., Divisional Engineer, Department of Roads and Bridges, were sworn, and examined.

Mr. McCourt gave notice that he would move at the next meeting of the Committee:—"That the Committee proceed to consider the evidence on the proposed Railway from Narrabri to Moree, with a view to reporting on the subject to the Legislative Assembly."

The Committee adjourned at 4 minutes past 4, until 2 o'clock p.m. on Tuesday, 19 December.

TUESDAY, 19 DECEMBER, 1893.

The Committee met at 2 p.m.

MEMBERS PRESENT:—

Jacob Garrard, Esq., Chairman.

The Hon. William Henry Suttor,	William Chandos Wall, Esq.,
The Hon. James Hoskins,	William McCourt, Esq.,
The Hon. Frederick Thomas Humphery,	John Cash Neild, Esq.,
The Hon. John Davies, C.M.G.,	Edward William O'Sullivan, Esq.,
The Hon. William Joseph Trickett,	Charles Collins, Esq.,

Henry Dawson, Esq.

The minutes of the previous meeting were read, and confirmed.

The Secretary read the following correspondence:—

Letter from Mr. Charles W. Lloyd, expressing a desire to give evidence before the Committee with reference to the proposed Railway from Narrabri to Moree.

The correspondence was received.

The Committee further considered the proposed Railway from Narrabri to Moree.

John McElhone, Esq., Ingham Suttor Clements, Esq., William Henry Moseley, Esq., William Theodore Foxlee, Esq., Engineer-in-Chief for Existing Lines, Department of Railways, and Charles William Lloyd, Esq., were sworn, and examined.

Henry Deane, Esq., Engineer-in-Chief, Railway Construction Branch, Department of Public Works, was sworn, and further examined.

Mr. McCourt moved,—“That the Committee proceed to consider the evidence on the proposed railway from Narrabri to Moree, with a view to reporting on the subject to the Legislative Assembly.”

The motion was seconded by Mr. O'Sullivan, and passed.

The

The following account was passed for payment :—

W. H. Midgley (*Gwydir Examiner*)—Advertising visit of Sectional Committee
on Railway from Narrabri to Moree... .. £1 0 6

On the motion of Mr. Davies, seconded by Mr. Dawson, it was resolved that a bonus of £10 be paid to Arthur Hurley, messenger on the Committee's office staff, for extra duties as a clerk.

Mr. Davies moved,—“That at their rising this day the Committee adjourn until 2 o'clock p.m. on Tuesday, 9th January, 1894.”

Mr. McCourt gave notice that he would move at the next meeting of the Committee,—“That in the opinion of the Committee it is expedient that the proposed Railway from Narrabri to Moree, as referred to the Committee by the Legislative Assembly, be carried out.”

The Committee adjourned at 8 minutes past 4, until 2 o'clock p.m. on Tuesday, 9th January, 1894.

TUESDAY, 9 JANUARY, 1894.

The Committee met at 2 p.m.

MEMBERS PRESENT :—

The Honorable William Henry Suttor, Vice-Chairman.

The Hon. James Hoskins,	Thomas Thomson Ewing, Esq.,
The Hon. Frederick Thomas Humphery,	William Chandos Wall, Esq.,
The Hon. John Davies, C.M.G.,	William McCourt, Esq.,
The Hon. William Joseph Trickett,	John Cash Neild, Esq.,

Henry Dawson, Esq.

The minutes of the previous meeting were read, and confirmed.

The Vice-Chairman reported that Mr. W. Shellshear, who had been sent by the Railway Commissioners to America to inquire respecting the construction and maintenance of cheap railways, had returned to Sydney, and, if the Committee desired, could be examined by them with reference to the proposed Railway from Narrabri to Moree.

Mr. Davies moved,—“That Mr. Shellshear be examined with reference to the proposed Railway from Narrabri to Moree.”

The motion was seconded by Mr. McCourt, and negatived on the following division :—

Ayes, 3.	Noes, 5.
Mr. Davies,	Mr. Hoskins,
Mr. Ewing,	Mr. Humphery,
Mr. McCourt.	Mr. Trickett,
	Mr. Wall,
	Mr. Neild.

Mr. McCourt moved,—“That, in the opinion of the Committee, it is expedient that the proposed Railway from Narrabri to Moree, as referred to the Committee by the Legislative Assembly, be carried out.”

Mr. Davies seconded the motion.

Mr. Trickett moved, as an amendment,—“That all the words after the second word ‘that’ be omitted, with a view to inserting the following words: ‘a railway should be constructed to connect Narrabri with Moree, but that the weight of evidence is in favour of a line to the west of the proposed Government line and in the locality of the Gurlough Point line, or travelling stock route, forty-three out of sixty-eight witnesses having testified in favour of a western deviation; one strong objection to the Government line being that it would not serve a large area of country to the west of Millie and Narrabri, whilst a deviation to the westward, as before suggested, would, in addition to connecting Narrabri and Moree, be advantageous to a large area of country and a considerable population to the west. The Committee recommend accordingly.’”

The Committee divided on the question—“That the words proposed to be omitted stand part of question,” with the following result :—

Ayes, 6.	Noes, 4.
Mr. Suttor,	Mr. Trickett,
Mr. Hoskins,	Mr. Wall,
Mr. Humphery,	Mr. Neild,
Mr. Davies,	Mr. Dawson.
Mr. Ewing,	
Mr. McCourt.	

The amendment was, therefore, negatived, and the motion was passed on the following division :—

Ayes, 6.	Noes, 4.
Mr. Suttor,	Mr. Trickett,
Mr. Hoskins,	Mr. Wall,
Mr. Humphery,	Mr. Neild,
Mr. Davies,	Mr. Dawson.
Mr. Ewing,	
Mr. McCourt.	

The Committee adjourned at 37 minutes past 3, until 2 o'clock p.m. on Friday, 12th January.

FRIDAY,

FRIDAY, 12 JANUARY, 1894.

The Committee met at 2 p.m.

MEMBERS PRESENT :—

Jacob Garrard, Esq., Chairman.

The Hon. William Henry Suttor,	The Hon. William Joseph Trickett,
The Hon. James Hoskins,	Thomas Thomson Ewing, Esq.,
The Hon. Frederick Thomas Humphery,	- William Chandos Wall, Esq.,
The Hon. John Davies, C.M.G.,	William McCourt, Esq.,
	John Cash Neild, Esq.

The minutes of the previous meeting were read, and confirmed.

The following accounts were passed for payment :—

	£	s.	d.
S. K. Johnstone—Shorthand-writer accompanying the Sectional Committee on the proposed railway from Narrabri to Moree	23	4	0
John Fairfax and Sons (<i>Sydney Morning Herald</i>)—Advertising with reference to the proposed Railway from Narrabri to Moree	1	1	0
S. Bennett (<i>Evening News</i>)—Advertising with reference to the proposed Railway from Narrabri to Moree	0	12	0
Total	£24	17	0

The Committee proceeded to consider their Report to the Legislative Assembly on the proposed Railway from Narrabri to Moree.

The preamble and clauses 1—13 were passed.

Clause 14—The Betterment Principle and how it may operate.

Mr. Wall moved—"That the clause be amended by the omission of all the words after '1893,' in the 14th line, on page 10, to and inclusive of the words 'Crown lands' in the 12th line, on page 11."

The amendment was seconded by Mr. Neild, and negatived on the following division upon the question "That the words proposed to be omitted stand part of the clause":—

Ayes, 4.

Mr. Garrard,
Mr. Suttor,
Mr. Davies,
Mr. McCourt.

Noes, 4.

Mr. Hoskins,
Mr. Trickett,
Mr. Wall,
Mr. Neild.

The voting being equal the Chairman gave his casting vote in favour of the ayes.

The clause was then passed.

Clause 15.—Opposition to the proposed Railway.

Mr. Neild moved,—“That the clause be amended by the omission, from the sixth line, of the words ‘much more expensive.’”

The amendment was seconded by Mr. Trickett, and negatived on the following division upon the question,—“That the words proposed to be omitted stand part of the clause.”

Ayes, 4.

Mr. Garrard,
Mr. Suttor,
Mr. Hoskins,
Mr. Davies.

Noes, 4.

Mr. Trickett,
Mr. Wall,
Mr. McCourt,
Mr. Neild.

The voting being equal the Chairman gave his casting vote with the ayes.

Mr. Wall moved,—“That the clause be amended by the omission, from the seventh line, of the words ‘and more liable to the effects of flood-water.’”

The amendment was seconded by Mr. Neild, and negatived on the following division upon the question,—“That the words proposed to be omitted stand part of the clause.”

Ayes, 5.

Mr. Garrard,
Mr. Suttor,
Mr. Hoskins,
Mr. Davies,
Mr. McCourt.

Noes, 3.

Mr. Trickett,
Mr. Wall,
Mr. Neild.

The clause was passed on the following division :—

Ayes, 5.

Mr. Garrard,
Mr. Suttor,
Mr. Hoskins,
Mr. Davies,
Mr. McCourt.

Noes, 3.

Mr. Trickett,
Mr. Wall,
Mr. Neild.

The remaining clause of the Report was passed, the Report was adopted, and the Chairman was authorised to sign it for presentation to the Legislative Assembly.

The Committee proceeded to consider their Eighth General Report to His Excellency the Governor. The Report was adopted, and the Chairman was authorised to sign it for presentation to His Excellency the Governor.

The Committee adjourned at 32 minutes past 3 o'clock p.m.

PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS.

SECTIONAL COMMITTEE.

Railway from Narrabri to Moree.

MINUTES OF PROCEEDINGS.

MINUTES of the proceedings of the Sectional Committee of the Parliamentary Standing Committee on Public Works, appointed on 15th November, 1893, to inspect, take evidence, and report, with reference to the proposed railway from Narrabri to Moree.

The Committee, accompanied by Mr. Paul, of the Railway Construction Branch, having inspected the route of the proposed railway from Narrabri Railway Station to the town of Narrabri, met at the Courthouse, Narrabri, at 2.15 p.m. on

MONDAY, 20 NOVEMBER, 1893.

MEMBERS PRESENT:—

Jacob Garrard, Esq., Chairman.	
The Hon. William Henry Suttor, The Hon. John Davies, C.M.G., Thomas Thomson Ewing, Esq.,	William McCourt, Esq., Edward William O'Sullivan, Esq., Henry Dawson, Esq.

Jacob Garrard, Esq., was called to the Chair.

Resolution of Legislative Assembly, referring the proposed railway to the Parliamentary Standing Committee on Public Works for consideration and report, was read.

The Committee proceeded to call evidence, and the following witnesses were examined:—Messrs. G. S. E. Dale, C. A. Ross, W. Gould, G. Gregory, sen., T. Morath, and J. M'Namara.

The Committee adjourned at 4.50 p.m. until 10 a.m. to-morrow.

TUESDAY, 21 NOVEMBER, 1893.

The Sectional Committee met at the Court-house, Narrabri, at 10 a.m.

MEMBERS PRESENT:—

Jacob Garrard, Esq., Chairman.	
The Hon. William Henry Suttor, The Hon. John Davies, C.M.G., Thomas Thomson Ewing, Esq.,	William McCourt, Esq., Edward William O'Sullivan, Esq., Henry Dawson, Esq.

The minutes of the previous meeting were read, and confirmed.

Messrs. D. Roche, E. P. Huxley, J. T. Ward, sen., W. Borthwick, G. Birney, J. Healey, J. Gateley, and A. Martin were sworn, and examined.

The Committee adjourned at 12.45 p.m.

WEDNESDAY, 22 NOVEMBER, 1893.

The Sectional Committee, having coached from Narrabri to Millie by the travelling stock route, met at the Royal Mail Hotel, Millie, at 8 p.m.

MEMBERS PRESENT:—

Jacob Garrard, Esq., Chairman.	
The Hon. William Henry Suttor, The Hon. John Davies, C.M.G., Thomas Thomson Ewing, Esq.,	William McCourt, Esq., Edward William O'Sullivan, Esq., Henry Dawson, Esq.

The minutes of the previous meeting were read, and confirmed.

The resolution of the Legislative Assembly, referring the proposed Railway to the Parliamentary Standing Committee on Public Works for consideration and report, was read.

Messrs. James Halse and Alfred Hill were sworn, and examined.

The Committee adjourned at 10.30 p.m.

THURSDAY, 23 NOVEMBER, 1893.

The Sectional Committee met at the "Royal Mail Hotel," Millie, at 9 a.m.

MEMBERS PRESENT:—

Jacob Garrard, Esq., Chairman.	
The Hon. William Henry Suttor, The Hon. John Davies, C.M.G., Thomas Thomson Ewing, Esq.,	William McCourt, Esq., Edward William O'Sullivan, Esq., Henry Dawson, Esq.

The minutes of the previous meeting were read, and confirmed.

Mr. A. Hill was further examined, and Messrs. R. Cribb, J. Fingleton, J. Duff, J. H. Murphy, J. V. Wilson, F. C. Staveley, and W. Duff, were sworn, and examined.

At 12.30 p.m. the Committee proceeded *via* Big Bumble, to Moree, where they arrived at 6.15 p.m.

FRIDAY, 24 NOVEMBER, 1893.

The Sectional Committee met at the Court-house, Moree, at 10 a.m.

MEMBERS PRESENT:—

Jacob Garrard, Esq., Chairman	
The Hon. William Henry Suttor,	William McCourt, Esq.,
The Hon. John Davies, C.M.G.,	Edward William O'Sullivan, Esq.,
Thomas Thomson Ewing, Esq.,	Henry Dawson, Esq.

The minutes of the previous meeting were read, and confirmed.

The resolution of the Legislative Assembly, referring the proposed Railway to the Parliamentary Standing Committee on Public Works, for consideration and report, was read.

Messrs. J. Cornell, W. H. O'M. Wood, J. T. Crane, C. O'Hara, A. B. Lomax, J. Jurd, and S. L. Cohen, were sworn, and examined. Mr. H. Joseph made an affirmation, and was examined.

The Committee adjourned at 5 p.m.

SATURDAY, 25 NOVEMBER, 1893.

The Sectional Committee met at the Courthouse, Moree, at 10 a.m.

MEMBERS PRESENT:—

Jacob Garrard, Esq., Chairman.	
The Hon. William Henry Suttor,	William McCourt, Esq.,
The Hon. John Davies, C.M.G.,	Edward William O'Sullivan, Esq.,
Thomas Thomson Ewing, Esq.,	Henry Dawson, Esq.

The minutes of the previous meeting were read, and confirmed.

Mr. W. H. O'M. Wood was further examined, and Messrs. R. F. Chambers, T. F. Moore, A. McIntosh, J. Munro, F. W. Kirkby, and C. B. Keene were sworn, and examined.

The Committee adjourned at 12:45 p.m.; and at 10 a.m. on Monday, 27th November, proceeded by the travelling stock route to Millie, arriving there at 4 p.m.; and at 8 a.m. on Tuesday, 28th November, proceeded *via* the Jew's Lagoon and Boolcarrol, to Wee Waa, which was reached at 2:30 p.m.

TUESDAY, 28 NOVEMBER, 1893.

The Sectional Committee met at the Court-house, Wee Waa, at 4:30 p.m.

MEMBERS PRESENT:—

Jacob Garrard, Esq., Chairman.	
The Hon. William Henry Suttor,	William McCourt, Esq.,
The Hon. Davies, C.M.G.,	Edward William O'Sullivan, Esq.,
Thomas Thomson Ewing, Esq.,	Henry Dawson, Esq.

The minutes of the previous meeting were read, and confirmed.

The Resolution of the Legislative Assembly referring the proposed railway to the Parliamentary Standing Committee on Public Works for consideration and report, was read.

Messrs. L. Brennan, J. A. St. Clair, A. C. Fenwick, and J. Maiden, were sworn, and examined.

The Committee adjourned at 7 p.m.

WEDNESDAY, 29 NOVEMBER, 1893.

The Sectional Committee met at the Court-house, Wee Waa, at 8:30 a.m.

MEMBERS PRESENT:—

Jacob Garrard, Esq., Chairman.	
The Hon. William Henry Suttor,	William McCourt, Esq.
The Hon. John Davies, C.M.G.,	Edward William O'Sullivan, Esq.,
Thomas Thomson Ewing, Esq.,	Henry Dawson, Esq.

The minutes of the previous meeting were read, and confirmed.

Mr. J. Maiden was further examined; and Messrs. W. Mackenzie, P. Rafferty, J. Gray, P. J. Ryan, R. B. Mills, S. Dempsey, S. Powell, A. Copleson, W. Bennett, A. L. Harden, W. T. Mitchell, A. Mackenzie, E. W. Jeffery, A. Hamilton, W. W. R. Holcombe, C. Kelaher, and J. W. Doherty, were sworn, and examined.

The Committee adjourned at 12:30 p.m.; and started for Narrabri at 3 p.m.; four members of the Committee travelling on the southern side of the Namoi River, *via* Molly and West Narrabri; and the remainder travelling on the northern side of the river, *via* Gundemaine and Ironbarks.

WEDNESDAY, 29 NOVEMBER, 1893.

The Sectional Committee met at the "Club-house" Hotel, Narrabri, at 8:15 p.m.

MEMBERS PRESENT:—

Jacob Garrard, Esq., Chairman.	
The Hon. William Henry Suttor,	William McCourt, Esq.,
The Hon. John Davies, C.M.G.,	Edward William O'Sullivan, Esq.,
Thomas Thomson Ewing, Esq.,	Henry Dawson, Esq.

The minutes of the previous meeting were read, and confirmed.

Messrs. L. Malone, E. H. Wall, and G. M'Farlane, were sworn, and examined.

The Committee adjourned at 9:45 p.m., and at 9:10 a.m., next day, left Narrabri West for Sydney, where they arrived at 11 p.m.

FRIDAY,

FRIDAY, 1 DECEMBER, 1893.

The Sectional Committee met at the Secretary's Office, Sydney, at 2:30 p.m.

MEMBERS PRESENT :—

Jacob Garrard, Esq., Chairman.

The Hon. William Henry Suttor,
The Hon. John Davies, C.M.G.,
Thomas Thomson Ewing, Esq.,

William McCourt, Esq.,
Edward William O'Sullivan, Esq.,
Henry Dawson, Esq.,

The minutes of the previous meeting were read, and confirmed.

Mr. Davies moved,—“That the Committee consider it expedient that the proposed Railway from Narrabri to Moree, as referred to them by the General Committee, be carried out.”

Mr. McCourt seconded the motion.

After discussion the question was put, and the Committee divided as follows :—

Ayes, 6.	Noes, 1.
Mr. Suttor, Mr. Davies, Mr. Ewing, Mr. McCourt. Mr. O'Sullivan, Mr. Garrard.	Mr. Dawson.

The motion was then passed.

Mr. Ewing submitted a draft report which was read, and ordered to be printed, and considered in detail at a meeting to be held on Tuesday next, at 1:45 p.m.

The Committee adjourned at 3:45 p.m.

TUESDAY, 5 DECEMBER, 1893.

The Sectional Committee met at the Secretary's Office, Sydney, at 1:45 p.m.

MEMBERS PRESENT :—

Jacob Garrard, Esq., Chairman.

The Hon. William Henry Suttor,
The Hon. John Davies, C.M.G.,

William McCourt, Esq.,
Edward William O'Sullivan, Esq.,

The minutes of the previous meeting were read, and confirmed.

The Committee proceeded to consider their report which was read, verbally amended, adopted, and signed by the Chairman.

The Committee adjourned *sine die* at 2 p.m.

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

PUBLIC WORKS BETTERMENT BILL.

(MESSAGE No. 10.)

Ordered by the Legislative Assembly to be printed, 24 January, 1894.

R. W. DUFF,
Governor.

Message No. 10.

In accordance with the provisions contained in the 54th section of the Constitution Act, the Governor recommends for the consideration of the Legislative Assembly the expediency of making provision to meet the requisite expenses in connection with a Bill to amend the "Public Works Act of 1888" and the "Public Works Act Amendment Act of 1889"; to make better provision with regard to the costs of arbitration; to establish and give effect to the betterment principle with regard to Public Works; to establish a sinking fund for repayment of the cost of the said works; to repeal portions of the "Public Works Act of 1888"; and for other purposes in furtherance of, or consequent on, the aforesaid objects.

*Government House,
Sydney, 23rd January, 1894.*

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

PUBLIC WORKS ACT OF 1888.

(RESUMPTION OF LAND FOR THE FORMATION OF A NEW CHANNEL FOR SHEA'S CREEK.)

Ordered by the Legislative Assembly to be printed, 13 March, 1894.

**NOTIFICATION OF RESUMPTION OF LAND UNDER
THE "PUBLIC WORKS ACT OF 1888," 51 VICTORIA
No. 37.**

NEW SOUTH WALES,) Proclamation by His Excellency The
to wit.) Right Honourable Sir ROBERT WILLIAM
DUFF, a Member of Her Majesty's Most
Honourable Privy Council, a Knight
(L.S.) Grand Cross of the Most Distinguished
Order of Saint Michael and Saint George,
Governor and Commander-in-Chief of
R. W. DUFF, the Colony of New South Wales and its
Governor. Dependencies.

WHEREAS I, SIR ROBERT WILLIAM DUFF, the Governor aforesaid, with the advice of the Executive Council, have directed that a certain public work, that is to say, the formation of a new channel for Shea's Creek, in the said Colony, the estimated cost of which does not exceed twenty thousand pounds, shall be carried out, under the provisions of the "Public Works Act of 1888," as an authorised work by the Minister for Public Works as Constructing Authority; and that the land described in the Schedule hereto, which is in my opinion required for carrying out the said work, shall be acquired by taking the same under the "Lands for Public Purposes Acquisition Act," as adopted by the "Public Works Act of 1888": Now, therefore, I, the said Governor, with the advice aforesaid, in pursuance of the "Public Works Act of 1888," do declare by this notification, to be published in the Government Gazette and in one or more newspapers published or circulated in the Police District wherein the said land is situated, that the Crown Land comprised within the description set forth in the Schedule hereto has been appropriated, and the private property within such description has been resumed, for the public purpose aforesaid, to the intent that upon the publication of this notification in the Gazette, the said land described in the said Schedule hereto shall forthwith be vested in the said Constructing Authority as a corporation sole on behalf of Her Majesty, for the purposes of the "Public Works Act of 1888," for an estate in fee simple in possession, freed and discharged from all trusts, obligations, estates, interests, contracts, charges, rates, rights-of-way, or other easements whatsoever; and to the further intent that the legal estate therein, together with all powers incident thereto or conferred by the said last-mentioned Act, shall be vested in such Constructing Authority as a Trustee: And I declare that the following is the Schedule of land hereinbefore referred to:—

SCHEDULE.

All that piece or parcel of land situated in the parish of Alexandria, county of Cumberland, and Colony of New South

Wales, being part of a grant of 1,400 acres to William Hutcheson, known as part of the Waterloo Estate: Commencing at a point bearing south 16 degrees 39 minutes west, and distant 5,879·56 links from the intersection of the south-western boundary of Alexandria Park with the south-eastern side of Buckland street; and bounded thence on the north-west by other part of the said grant as follows,—by 1,152·43 links of a concave curve of 7,768·16 links radius, the chord of which bears south 20 degrees 38½ minutes west 1,151·3 links; thence by a line bearing south 16 degrees 24 minutes west 1,006·06 links; thence by 609·29 links of a convex curve of 3,431·81 links radius, the chord of which bears south 21 degrees 29 minutes west 608·15 links; thence by a line bearing south 26 degrees 34 minutes west 868·93 links; thence by 783·56 links of a convex curve of 2,431·82 links radius, the chord of which bears south 35 degrees 12½ minutes west 730·78 links; thence on the south-west by the north-eastern boundary of land resumed by notification in Gazette of 14th June, 1889, bearing south 46 degrees 9 minutes east 1,136·36 links; thence on the south-east by other part of the aforesaid grant by 1,076·35 links of a concave curve of 3,568·18 links radius, the chord of which bears north 35 degrees 12½ minutes east 1,072·27 links; thence by a line bearing north 26 degrees 34 minutes east 868·94 links; thence by 810·57 links of a concave curve of 4,568·18 links radius, the chord of which bears north 21 degrees 29 minutes east 809·51 links; thence by a line bearing north 16 degrees 24 minutes east 1,006·05 links; thence by 983·84 links of a convex curve of 6,631·8 links radius, the chord of which bears north 20 degrees 38½ minutes east 982·89 links; and thence on the north-east by other part of the aforesaid grant bearing north 65 degrees 06 minutes west 1,136·36 links, to the point of commencement,—containing 51 acres 3 roods 9¼ perches or thereabouts, and said to be in the possession of W. Cooper, and partly in the occupation of Ah Lum, See Tuck, and others.

In witness whereof I have hereunto set my Hand, and caused the Great Seal of the Colony to be hereto affixed, at Government House, Sydney, this sixth day of March, in the year of our Lord one thousand eight hundred and ninety-four, and in the fifty-seventh year of Her Majesty's Reign.

By His Excellency's Command,

WILLIAM JOHN LYNE.

GOD SAVE THE QUEEN!

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

PUBLIC WORKS ACT OF 1888.

(RESUMPTION OF LAND FOR PERMANENT ADDITIONS TO SUPREME COURT BUILDINGS, SYDNEY.)

Ordered by the Legislative Assembly to be printed, 17 May, 1894.

NOTIFICATION OF RESUMPTION OF LAND UNDER THE "PUBLIC WORKS ACT OF 1888," 51 VICTORIA No. 37.

NEW SOUTH WALES, } Proclamation by His Excellency The
to wit. } Right Honourable Sir ROBERT WILLIAM
DUFF, a Member of Her Majesty's Most
(L.S.) } Honourable Privy Council, a Knight
Grand Cross of the Most Distinguished
Order of Saint Michael and Saint George,
R. W. DUFF, } Governor and Commander-in-Chief of
Governor. } the Colony of New South Wales and its
Dependencies.

WHEREAS I, SIR ROBERT WILLIAM DUFF, the Governor aforesaid, with the advice of the Executive Council, directed that a certain public work, that is to say, Permanent Additions to Supreme Court Buildings, Sydney, in the said Colony, the estimated cost of which does not exceed twenty thousand pounds, shall be carried out under the provisions of the "Public Works Act of 1888," as an authorised work by the Minister for Public Works as Constructing Authority; and that the land described in the Schedule hereto, which is in my opinion required for carrying out the said work, shall be acquired by taking the same under the "Lands for Public Purposes Acquisition Act," as adopted by the "Public Works Act of 1888": Now, therefore, I, the said Governor, with the advice aforesaid, in pursuance of the "Public Works Act of 1888," do declare by this notification, to be published in the Government Gazette and in one or more newspapers published or circulated in the Police District wherein the said land is situated, that the Crown Land comprised within the description set forth in the Schedule hereto has been appropriated, and the private property within such description has been resumed, for the public purpose aforesaid, to the intent that upon the publication of this notification in the Gazette, the said land described in the said Schedule hereto shall forthwith be vested in the said Constructing Authority as a corporation sole on behalf of Her Majesty, for the purposes of the said "Public Works Act

of 1888," for an estate in fee simple in possession, freed and discharged from all trusts, obligations, estates, interests, contracts, charges, rates, rights-of-way, or other easements whatsoever; and to the further intent that the legal estate therein, together with all powers incident thereto or conferred by the said last-mentioned Act, shall be vested in such Constructing Authority as a Trustee: And I declare that the following is the Schedule of land hereinbefore referred to:—

SCHEDULE.

All that piece or parcel of land situate in the City of Sydney, parish of Saint James, county of Cumberland, and Colony of New South Wales, being part of a grant of 1 rood 19 perches to the Trustees of Saint James' Church: Commencing at the southernmost south-western corner of that grant; and bounded thence by part of its southernmost boundary bearing easterly 75 feet; thence by a line at right angles to the last described line bearing northerly about 6 feet to the chancel wall of St. James' Church; thence by that wall bearing westerly about 17 feet and northerly about 4 feet; thence by a line parallel to and rectangularly distant 10 feet from the first-described line bearing westerly about 58 feet to a western boundary of the aforesaid grant; and thence by that boundary bearing southerly 10 feet, to the point of commencement,—be the said several dimensions all a little more or less, containing 2½ perches or thereabouts, and said to be in the possession of the Trustees of St. James' Church.

In witness whereof I have hereunto set my Hand, and caused the Great Seal of the Colony to be hereto affixed, at Government House, Sydney, this seventh day of May, in the year of our Lord one thousand eight hundred and ninety-four, and in the fifty-seventh year of Her Majesty's Reign.

By His Excellency's Command,
WILLIAM JOHN LYNE.

GOD SAVE THE QUEEN!

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

REPORT FROM THE SELECT COMMITTEE

ON THE

OXFORD-STREET IMPROVEMENT BILL;

TOGETHER WITH

PROCEEDINGS OF THE COMMITTEE,

MINUTES OF EVIDENCE,

AND

APPENDIX.

ORDERED BY THE LEGISLATIVE ASSEMBLY TO BE PRINTED,
13 *February*, 1894.

SYDNEY : CHARLES POTTER, GOVERNMENT PRINTER.

1894]

1892-3.

EXTRACTS FROM THE VOTES AND PROCEEDINGS OF THE
LEGISLATIVE ASSEMBLY.

VOTES No. 33. WEDNESDAY, 16 NOVEMBER, 1892.

4. OXFORD-STREET IMPROVEMENT BILL (*Formal Motion*):—Mr. Neild moved, pursuant to Notice,—
(1.) That Oxford-street Improvement Bill be referred to a Select Committee, with power to send for persons and papers, for consideration and report.
(2.) That such Committee consist of Mr. Marks, Mr. McGowen, Mr. McCourt, Mr. Perry, Mr. Hart, Mr. Gormly, Mr. Lees, Mr. Waddell, Mr. O'Sullivan, and the Mover.
Question put and passed.

VOTES No. 36. WEDNESDAY, 23 NOVEMBER, 1892.

7. OXFORD-STREET IMPROVEMENT BILL:—Mr. McGowen presented a Petition from William Brereton, Joseph Brereton, Elizabeth McAnally, Charlotte Hamilton, Mary Ann Sherlock, Theresa Agnes Moore, and Frances Brereton, setting forth that the Oxford-street Improvement Bill has been introduced into the House to enable the Council of the Borough of Paddington to close certain portions of Marshall-street in the said Borough, and a certain right-of-way leading therefrom, and to vest the fee-simple of a part of the said land in the Marshall's Paddington Brewery (Limited); that the said Bill has been referred to a Select Committee for consideration and report; and praying that, they being largely interested in the questions to be considered, may be granted permission to appear before the said Select Committee in person, or by solicitor or counsel, and, if necessary, to adduce such evidence as they may be advised, and examine and cross-examine witnesses called before the said Committee.
Petition received.
Mr. McGowen (*by consent*) moved, That the prayer of the Petitioners be granted.
Question put and passed.

1894.

EXTRACTS FROM THE VOTES AND PROCEEDINGS OF THE
LEGISLATIVE ASSEMBLY.

VOTES No. 5. THURSDAY, 25 JANUARY, 1894.

11. OXFORD-STREET IMPROVEMENT BILL:—

- (3.) Mr. Neild then moved,—
(1.) That the "Oxford-street Improvement Bill" be referred to a Select Committee, with power to send for persons and papers, for consideration and report.
(2.) That such Committee consist of Mr. Marks, Mr. McGowen, Mr. McCourt, Mr. Perry, Mr. Hart, Mr. Gormly, Mr. Lees, Mr. Waddell, Mr. O'Sullivan, and the Mover.
(3.) That the Minutes of Proceedings and Evidence taken before the Select Committee of Session 1892-3 be referred to such Committee.
Question put and passed.

VOTES No. 12. TUESDAY, 13 FEBRUARY, 1894.

5. OXFORD-STREET IMPROVEMENT BILL.—Mr. Neild, as Chairman, brought up the Report from, and laid upon the Table the Minutes of Proceedings of, and Evidence taken before the Select Committee for whose consideration and report this Bill was referred on 25th January, 1894, together with Appendix and a copy of the Bill as amended and agreed to by the Committee.
Ordered to be printed.

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1894.

OXFORD-STREET IMPROVEMENT BILL.

REPORT.

THE SELECT COMMITTEE of the Legislative Assembly, for whose consideration and report was referred, on 25th January, 1894, the "*Oxford-street Improvement Bill*,"—and to whom was referred, on the same date, *the Minutes of Proceedings and Evidence taken before the Select Committee of Session 1892-3*,—beg to report to your Honorable House:—

That they have examined the witness named in the list* (whose evidence See list, p. 5.* will be found appended hereto); and considered the Minutes of Proceedings and Evidence referred; and that the Preamble, as amended, having been satisfactorily proved to your Committee they proceeded to consider the several clauses and schedules of the Bill, in which it was deemed necessary to make certain amendments.

Your Committee now beg to lay before your Honorable House the Bill as amended by them, including amendments in the Title and Preamble.

JNO. C. NEILD,
Chairman.

*No. 2 Committee Room,
Sydney, 13th February, 1894.*

1892-3.

PROCEEDINGS OF THE COMMITTEE.

THURSDAY, 17 NOVEMBER, 1892.

MEMBERS PRESENT:—

Mr. Hart,	|	Mr. Lees,
Mr. McGowen,	|	Mr. Neild,
Mr. O'Sullivan,	|	Mr. Perry,
	Mr. Waddell.	

Mr. Neild called to the Chair.

Entry from Votes and Proceedings appointing the Committee read by the Clerk.

Printed copies of the Bill referred together with original Petition to introduce same before the Committee.

Present:—Thomas Marshall, Esq. (*Solicitor for the Bill*).John White (*Mayor of Paddington*), called in, sworn, and examined.Witness handed in plan, showing the proposed improvement of Oxford-street. [*See Appendix A.*]

Witness withdrew.

John Beveridge (*Secretary of Marshall's Brewery Company, Limited*), called in, sworn, and examined.

Witness withdrew.

Thomas Marshall, sworn and examined.

The Chairman having left the Chair.

Mr. Perry called to the Chair *pro tem*.

The Chairman resumed the Chair.

Witness withdrew.

Ordered,—That the evidence be printed and circulated to Members of the Committee before next meeting.[Adjourned till Tuesday next, at *Half-past Eleven* o'clock.]

TUESDAY, 22 NOVEMBER, 1892.

MEMBERS PRESENT:—

	Mr. Neild in the Chair.	
Mr. Lees,	|	Mr. McGowen,
	Mr. Perry.	

Present:—Thomas Marshall, Esq. (*Solicitor for the Bill*).

Joseph Brecreton called in, sworn, and examined.

Room cleared.

Committee deliberated.

Reassembling of Committee to be arranged by the Chairman.

[Adjourned.]

1894.

PROCEEDINGS OF THE COMMITTEE.

TUESDAY, 13 FEBRUARY, 1894.

MEMBERS PRESENT:—

Mr. Gornly, | Mr. Neild
Mr. Perry.

Mr. Neild called to the Chair.

Entry from Votes and Proceedings, appointing the Committee, and referring the Minutes of Proceedings and evidence taken before the Select Committee of Session 1892-3, read by the Clerk.

Minutes of Proceedings and Evidence referred before the Committee.

Present:—Thomas Marshall, Esq. (*Solicitor for the Bill*).

Motion made (Mr. Perry) and Question, That the Minutes of Proceedings and Evidence taken before the Select Committee of Session 1892-3 be adopted by this Committee,—put and passed.

Thomas Marshall sworn and examined.

Witness produced Indenture of Conveyance made between William Brereton, Joseph Brereton, and James Moore, trustees under the will of George Brereton, deceased, of the first part, William Brereton, of the second part, and Marshall's Paddington Brewery Company (Limited) of the third part, and handed in plan showing the proposed improvement of Oxford-street, Paddington, under the altered conditions, and copy of proposed New Schedules of the Bill. [*Appendix A and B.*]

Room cleared.

Preamble considered and amended.*

Question,—“That this Preamble, as amended, stand part of the Bill,” put and passed.

* See Schedule of Amendments

Clause 1 read and agreed to.

Clause 2 read, amended,* and agreed to.

Clause 3 read, amended,* and agreed to.

Clause 4 read, amended,* and agreed to.

Clause 5 read, amended,* and agreed to.

Clause 6 read, amended*, and agreed to.

Schedules 1 to 3 read and omitted.

New Schedules, to stand as Schedules 1 and 2, read and agreed to.

Title read, amended,* and agreed to.

Chairman to report the Bill, with amendments, to the House, including an amended Title and Preamble.

SCHEDULE OF AMENDMENTS.

- Page 1, Title, lines 8 and 9. *Omit* “and the remaining part thereof in the trustees of the will of George Brereton, deceased”
- „ 1, Preamble, lines 9 and 10. *Omit* “and an additional portion thereof being vested in the trustees of the will of George Brereton, deceased”
- „ 2, clause 2, line 10. *Omit* “and Second Schedules” *insert* “Schedule”
- „ 2, „ 3, „ 15. *Omit* “Third” *insert* “Second”
- „ 2, „ 4; lines 27 to 33. *Omit* “and all that piece or parcel of land described in the Second Schedule hereto shall vest in the trustees of the will of George Brereton, deceased, for an estate in fee-simple free from all rights, easements, or privileges of any person or persons therein or thereover, subject to the trusts contained in the said will which govern the lands adjoining the lands described in the said Second Schedule now vested in the said trustees”
- „ 2, „ 5, line 35. *Omit* “twelve months” *insert* “two years”
- „ 2, „ 6, lines 48, 49, and 50. *Omit* “or against the trustees of the will of George Brereton, deceased, or any of the beneficiaries under the said will”
- „ 2, „ 6, „ 50 and 51. *Omit* “and Second Schedules” *insert* “Schedule”
- „ 2, „ 6, „ 53 and 54. *Omit* “or for the trustees of the will of George Brereton, deceased, or any of the beneficiaries thereunder”
- Pages 3 and 4. *Omit* Schedules *insert* the following new Schedules.

THE FIRST SCHEDULE REFERRED TO.

All that piece or parcel of land situated in the parish of Alexandria, county of Cumberland, Colony of New South Wales, be the hereinafter mentioned dimensions a little more or less, containing by admeasurement five thousand two hundred and twenty-eight square feet: Commencing at a point on the south-east boundary-line of block L of the subdivision of the Sydney Common, at its intersection with the new building-line on the south-west side of Oxford-street; and bounded thence on the north-east by said building-line of Oxford-street bearing south fifty-five degrees forty-one minutes thirty seconds east forty-two feet seven and three quarter inches to land formerly granted to Maria Zouch, and now the property of Marshall's Paddington Brewery (Limited); thence on the south-east, north-east, and again on the south-east by the boundary-lines of that land bearing south fifty-four degrees thirty-five minutes thirty seconds west sixty-four feet four and a quarter inches, south forty-five degrees thirty-seven minutes east fifty-six feet, south forty-three degrees twenty-five minutes east thirty feet nine inches, and south forty-five degrees forty-one minutes west twenty-seven feet and a half inch to land formerly the

property of George Brereton; thence on the south-west, north-west, and again on the south-west by the boundary-lines of that land bearing north forty-three degrees thirteen minutes west twelve feet six inches, north forty-five degrees forty-one minutes east fourteen feet seven inches, and north forty-three degrees twenty-five minutes west eighteen feet and two and a half inches to other land now the property of Marshall's Paddington Brewery (Limited); thence again on the south-west, south-east, and south-west by the boundary-lines of last-mentioned property bearing north forty-five degrees thirty-seven minutes west twenty-six feet eleven inches, south forty-five degrees west four feet six inches, and north forty-six degrees forty-eight minutes west thirty-one feet eleven and a half inches; thence on remainder of the south-east by the north-west boundary-line of said property, and the north-west boundary-line of land before referred to, formerly the property of George Brereton, bearing south fifty-four degrees thirty-five minutes thirty seconds west in all twenty-seven feet four inches to the westernmost corner of last-mentioned land; thence on remainder of the south-west by the north-eastern termination of Marshall-street bearing north forty-six degrees twenty-three minutes west thirty-seven feet eight and a half inches to block L of the subdivision of the Sydney Common aforesaid, now the property of Marshall's Paddington Brewery (Limited); and thence on remainder of the north-west by part of the south-east boundary-line of that land bearing north fifty-four degrees thirty-five minutes thirty seconds east ninety-five feet seven and a half inches, to the point of commencement.

THE SECOND SCHEDULE REFERRED TO.

All that piece or parcel of land situated in the parish of Alexandria, county of Cumberland, Colony of New South Wales, be the hereinafter mentioned dimensions a little more or less, containing by admeasurement three hundred and twelve square feet, and being part of the land comprising block L of the subdivision of the Sydney Common: Commencing at the intersection of the present building-line on the south-west side of Oxford-street with the east building-line of Dowling-street; and bounded thence on the north-east by said building-line of Oxford-street, being the north-east boundary-line of said block L bearing south sixty-nine degrees forty-six minutes thirty seconds east ninety feet eight inches to the easternmost corner of said block L; thence on the south-east by part of the south-east boundary-line of said block L bearing south fifty-four degrees thirty-five minutes thirty seconds west eight feet four inches to the new building-line in Oxford-street; and thence on the south-west by that building-line bearing north fifty-five degrees forty-one minutes thirty seconds west eighty-six feet two and three-quarter inches, to the point of commencement.

And also all that piece or parcel of land situated in the parish of Alexandria, county of Cumberland, Colony of New South Wales, be the hereinafter mentioned dimensions a little more or less, containing by admeasurement one thousand three hundred and forty-five square feet, and being part of the land granted to Maria Zouch, by Crown grant dated thirtieth April, one thousand eight hundred and forty: Commencing at the intersection of the present building-line on the south-west side of Oxford-street with the south-east building-line of Marshall-street; and bounded thence on the north-east by said building-line of Oxford-street bearing south sixty-nine degrees forty-six minutes thirty seconds east thirty-two feet five and a half inches and south forty-seven degrees thirty-seven minutes forty seconds east one hundred and forty feet seven inches to the northernmost corner of land now the property of H. E. Castle; thence on the south-west by the new building-line of Oxford-street bearing north forty-three degrees thirty-six minutes thirty seconds west one hundred and thirty-eight feet six inches and north fifty-five degrees forty-one minutes thirty seconds west thirty-seven feet one and a half inch to Marshall-street aforesaid; and thence on the north-west by the south-east building-line of said Marshall-street bearing north fifty-four degrees thirty-five minutes thirty-seconds east twelve feet five and three-quarter inches, to the point of commencement.

LIST OF WITNESSES.

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1892.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

MINUTES OF EVIDENCE

TAKEN BEFORE

THE SELECT COMMITTEE

ON THE

OXFORD-STREET IMPROVEMENT BILL.

THURSDAY, 17 NOVEMBER, 1892.

Present:—

MR. HART,		MR. LEES,
MR. MCGOWEN,		MR. NEILD,
MR. O'SULLIVAN,		MR. PERRY,
	MR. WADDELL.	

J. C. NEILD, ESQ., IN THE CHAIR.

Mr. T. Marshall, solicitor, appeared on behalf of the Promoters of the Bill.

Mr. John White called in, sworn, and examined:—

1. *Chairman.*] You are Mayor of Paddington? I am. Mr. J. White.
2. How long have you been Mayor? During the present municipal year—about nine months.
3. You have been a member of the council for some years? I have been a member for two years during 17 Nov., 1892. Mr. J. White.
4. You are acquainted with the locality referred to in this Bill? I am.
5. And you know the wishes of the council and the ratepayers with reference to the proposal? Yes.
6. Is there any statement you would like to make to the Committee with reference to it? I might, perhaps, give briefly, as far as I am acquainted with it, the history of the matter: These buildings have been a great eyesore to the residents of Paddington—I refer to the buildings known as Marshall's Brewery—for a great many years past; and certain action was taken by the council with a view to the removal of a portion of them, as we considered them an encroachment on the footway. After we had several times taken certain action with reference to the matter, a petition largely signed by the ratepayers of Paddington was presented to the council, asking them to close Marshall-street, which runs at the side of the brewery upon the condition that the buildings I have just mentioned as encroaching on the foot-path were removed. When that petition was received a committee of which I was a member was appointed to try to negotiate with the brewery company in reference to the closing of the street and the removal of the encroachment. The proposal embodied in this Bill was the result of negotiations which took place between the council and the brewery company. Every action taken by the committee was unanimously endorsed by the council. We are all in accord in thinking that this improvement is urgently required, and that it is to the benefit of the residents of Paddington that it should be carried out.
7. Was the arrangement into which the council entered with the company the same as the agreement suggested in the petition presented to the council? No, it was not.
8. Is the present arrangement more or less beneficial to the council and the public than the proposal referred to in the petition? It is very much more to the benefit of the public.
9. And of course to the benefit of the borough? Yes I may say that it is to the benefit of the whole of the eastern suburbs.

- Mr. J. White. 10. And necessarily to the benefit of the city? Exactly.
- 17 Nov., 1892. 11. In what way is the proposal of the Bill more beneficial? There is a very acute angle at this point of the road, and it means the widening of the narrowest part of the roadway by 13 ft. 6 in. That additional width would be thrown into the roadway at the very point of the angle.
12. That is to say that the arrangement which it is now sought to legalise gives a greater width of roadway, and the brewery company would give up a larger area of road than was originally proposed? Yes, there is no comparison at all between the two proposals.
13. In other words, you have made a better bargain? Well, we wanted a fair *quid pro quo*. We gave up a large area of land in the street, although it was not used for public traffic, and we thought we were entitled to something in return for it.
14. With reference to Marshall-street, has the council ever treated it as a thoroughfare, and spent money on it, and so on? A very small amount. I do not think anything has been spent there for some years, but as I do not represent that ward I cannot speak definitely.
15. Was the road ever ballasted? I could not say. I do not know that it has been, it was never metalled.
16. It was never a street for much traffic? Not to any extent.
17. It has been for years largely occupied as a storage ground for tanks connected with the brewery? I do not know that it has been used as a storage ground, but it has been used chiefly by the brewery company; the whole of their traffic passes along the street.
18. Mr. Lees.] Was the street ever proclaimed? I could not say, but I should imagine that it has been.
19. Mr. Perry.] It is simply a road on paper? It has always been open for traffic.
20. But it is not a made road? No.
21. Chairman.] The council are then obtaining from the brewery company a portion of the freehold as well as the putting back of the alleged encroachment? Very nearly 2,000 feet of freehold.
22. You put in a plan showing the proposed improvements? Yes. [Vide Appendix A.]
23. The dotted line on the plan shows the present kerb? Yes.
24. The next line shows the existing building's enclosure line? Yes.
25. The next inner line is the line represented by the proper street alignment? Yes.
26. And the fourth line is the line which it is proposed to create as a building line under this Bill? Yes.
27. The space between the second and third lines shows the area of encroachment which it is proposed to give up? Yes.
28. And the space between the third and fourth lines shows the area of freehold which the Company are relinquishing to the borough? Yes.
29. The portion of Marshall-street which it is proposed to close is fronted by the property of the Marshall Brewery Company almost exclusively, a small portion, viz., 14 ft. 4 in., being fronted by the property of George Brereton? Yes.
30. The right-of-way which it is proposed to close is exclusively fronted by the property of the Marshall Brewery Company? Yes.
31. And is not used by anyone else? Not that I know of.
32. The portion of Marshall-street, opposite Brereton's property, which it is proposed by this Bill to be closed, is given as a freehold to Brereton? Yes.
33. The effect of the Bill upon Brereton's property is that he gets a westerly frontage to Marshall-street of 31 ft. 4 in., instead of a northerly frontage, as at present, of 14 ft. 4 in.? Yes.
34. Have the council received any intimation of any opposition to this proposal from either Mr. Brereton or other property-owners? None whatever.
35. Mr. McGowan.] Nor from any ratepayers? Not a single line.
36. Chairman.] How many signatures of ratepayers were attached to the petition presented to the Council? I think there were between 500 and 600; it was an enormously signed petition.
37. Mr. McGowan.] There has been no protest against the proposed act of the Council? None.
38. Chairman.] This matter has been before the council, and has been referred to in the city and local papers for several months? Yes.
39. On how many occasions was the matter before the council? In connection with the last negotiations on three different occasions.
40. And meetings I suppose have been held at intervals of some months? Yes.
41. So that there has been a very considerable degree of publicity given to the matter? The utmost publicity, and the council are unanimously in favour of the exchange being made.
42. So that you have every reason to believe that the owners of property concerned, and the ratepayers in the locality and borough generally, are thoroughly well aware of the proposal? Yes.
43. They have either approved of it definitely or have failed to give any intimation of dissent? That is so.
44. Has the matter to your knowledge been mentioned at any public meeting held in the borough? No; I do not think it has.
45. Do you remember whether it was mentioned at a public meeting held by one of the members for the district within the limits of the borough? I saw from the newspaper reports that it was mentioned, but I was not personally aware that that was the case.
46. That was a further publication of the proposal? Of course.
47. Speaking generally, from your long and intimate knowledge of borough matters, you believe that this proposal as submitted carries out the unanimous wish of the council? Yes.
48. And as far as you are aware the unanimous wish of the ratepayers? Yes.
49. Mr. McGowan.] Referring to the right-of-way off Marshall-street, do you know whether it was made by the council? I could not say.
50. Do you know if it was made for the use of the brewery company alone? That I could not say.
51. Someone must have spent a certain amount of money in the making of the right-of-way? Yes.
52. I understood you to say just now that it was not used by any persons except the Marshall Brewery Company? As far as I know it is not.
53. There is no other property affected by the closing of Marshall-street, except the property owned by Brereton apart from the property of the brewery company? That is the only property within the portion to be closed. There are two small houses at the corner of the lane further down.
54. Mr. Brereton gets a westerly frontage? Yes.

Mr. J. White.
17 Nov., 1892.

55. And is not the remainder of Marshall-street closed to his property? Yes.
56. What property is there in the portion of the street which is not to be closed? There are two small two-storey houses on the eastern side.
57. Have you received any protest from the owners of the property? No.
58. They are not affected by the transaction? Well, they are not injured by it.
59. *Mr. Perry.*] I suppose they know of this proposal? We have not communicated with them officially, but the utmost publicity has been given to the matter. The only gentlemen from whom we had any reason to expect any opposition was a Mr. Castles. Many years ago when there was an agitation of a similar nature on foot he protested against the street being closed, but on the present occasion he is thoroughly in accord with it on account of the great improvement resulting in the widening of the road. In the first instance I was opposed to the petition of Marshall's Brewery Company. I was one of the strongest opponents of the alteration upon the terms then suggested. Under that arrangement the street would have gone back only to the proper building alignment.
60. You thought the borough did not receive sufficient in exchange? No.
61. You know the right-of-way personally? I know there is such a place; but I have never been there.
62. You think that the closing of Marshall-street, and the giving of an extra width to Oxford-street, would be a distinct advantage to the borough? Not only to the borough but to the whole of the eastern suburbs.
63. You think the traffic would be in no way impeded by the closing of Marshall-street? In no way whatever. I am strongly in favour of the work being carried out.
64. *Mr. O'Sullivan.*] You appear to be giving up a great deal of land for a narrow strip in Oxford-street, but I suppose the value of the land you receive is much greater than the value of the land you give up? Yes.
65. What has been the cause of the long delay in dealing with the matter—what have been the points in dispute? The Building Act does not give us power as a municipality to condemn the buildings, and they have become really a danger to pedestrians.
66. I suppose they are likely to be removed now? Yes.
67. You say that there is a danger to pedestrians who pass these old buildings? A very considerable danger, although I believe the company have taken some little precaution in removing a portion of the timber.
68. Then the proposed improvement will remove a public danger as well as an eyesore? Yes; there is no foot-path there at all now.
69. As the line is marked on the plan it seems to strike through a portion of the Paddington Brewery Fire Brigade building;—will those buildings remain there? The buildings has been taken down, and re-erected higher up Dowling-street.
70. To what extent will Oxford-street be widened by the carrying out of the proposed improvement? About 25 ft. 6 in. The kerb goes back 13 ft. 6 in., and the building line will be 12 feet from that.
71. *Mr. Lees.*] Can you tell us how Marshall-street came into existence—was it dedicated or proclaimed? I cannot tell you that, my knowledge does not extend so far back.
72. How long has the street been there? I cannot say. It has been there a great many years.
73. But although you do not know whether the street was proclaimed or dedicated, it is under the control of the Paddington Council? Yes; we are liable for any accident that may occur in the street.
74. Were the proposed improvements approved by a resolution by the council? Yes; they were unanimously agreed to, and I believe the committee who had the matter in hand had a vote of thanks passed to them in recognition of the able manner in which they carried through the negotiations.
75. Do you know whether there are any owners of property adjacent to the street who purchased upon a plan showing Marshall-street as a thoroughfare? That I could not say.
76. You say that the owner of the piece of land between Brereton's property and the lane facing Marshall-street have not made any objection? No, not that I know of.
77. Do they approve of the alterations? That I could not say.
78. Brereton's estate is an old estate I believe? I do not know.
79. Did not the piece of land between Marshall's Brewery and the lane form part of Brereton's estate? I did not think so.
80. Have you any idea what Marshall's Brewery Company propose to do when they get the street handed over to them? I did hear that they intended building some shops, but I have not heard anything definite.
81. *Mr. McGowan.*] You have not looked upon the right-of-way as being the property of the borough of Paddington? It is only a few days ago that I knew of such a place being there.
82. You could not tell me positively that it has not been considered by any of the aldermen as forming part of the property of the borough? No; all that I can tell you is that not a farthing has been spent upon it since I have been in the council.
83. There are no private dwellings facing the right-of-way? Not that I know of.
84. *Chairman.*] The gradient of Marshall-street is pretty steep, is it not? Well, I do not know that you would call it steep in comparison with other portions of the borough.
85. Not for its length? I think I could find some much steeper grades in the borough.
86. Is it customary for persons driving vehicles to pass from Oxford-street directly into Dowling-street and *vice versa*, or to use Marshall-street when proceeding from one to the other? I never saw any vehicles in Marshall-street except those belonging to the brewery company.
87. *Mr. Perry.*] If you were driving and wanted to get from Paddington along Dowling-street some distance which road would you take; would you go along Marshall-street or would you go round the corner into Dowling-street? I should go round the corner.
88. *Mr. Lees.*] If you were on the Sydney side of Dowling-street and on the northern side of Napier-street and wished to make for Paddington would you come through Marshall-street or go round Dowling-street and turn into Oxford-street that way? I should go round by Dowling-street.
89. Would that be because the road was impeded more or less by brewer's tanks or blocked by vehicles? Well, the road has never been used for traffic. The council never spent any money on it, and as far as I know have never been asked to do so. I do not think that anyone but the brewery company ever makes any use of the road.
90. *Mr. Marshall.*] Is not the whole of the land on the northerly side of Marshall-street owned by the Marshall Brewery Company? Yes.

Mr. John Beveridge called in, sworn, and examined :—

- Mr. J. Beveridge.
17 Nov., 1892.
91. *Chairman.*] You are the Secretary to the Marshall's Brewery Company (Limited) ? I am.
92. And you are well acquainted with the proposed setting back of the encroachment and the giving up of a portion of your company's freehold for the widening of Oxford-street, in exchange for a portion of Marshall-street and the right-of-way running therefrom ? Yes.
93. Has the proposed arrangement been before the board of your company ? It has.
94. Has it been approved by your company ? It has.
95. Has it been before a meeting of your shareholders ? No.
96. Has it been incidentally mentioned to them ? Yes, it was mentioned in our last report and balance-sheet.
97. The directors have power under their articles to carry out such an arrangement ? Yes.
98. At any rate there has been no opposition on the part of your shareholders ? None whatever.
99. With reference to the right-of-way off Marshall-street is it to your knowledge used by any persons other than the proprietors of the brewery ? It is not.
100. Is it a cul-de-sac ? Yes.
101. And it can be used by no one else ? It has only one entrance, and no one can get into it as far as I know unless they are coming to the brewery ; the brewery gate is in it.
102. To your knowledge have the municipal council ever spent a penny upon it ? No.
103. Have the council ever been in the habit of spending any money in Marshall-street ? No.
104. What is the grade of Marshall-street, is it as level as Dowling-street, and has it as steep a grade ? There is an incline of 6 or 7 feet.
105. It is a pretty steep grade is it not ? Rather steep from Oxford-street.
106. *Mr. Perry.*] It would be about 1 in 10 would it not ? Yes.
107. *Chairman.*] The rise from Oxford-street to the highest part of Marshall-street would be 1 in 10 ? I think so.
108. And there is a fall from that point to Dowling-street ? Yes.
109. So that in a pretty short length of street you rise and fall with a fairly steep grade ? Yes.
110. That would be a great inconvenience for general vehicular traffic ? I think so.
111. As compared with the almost level character of Dowling-street and Oxford-street ? Yes.
112. Is there any traffic at the present time through Marshall-street other than the traffic connected with your brewery ? None whatever.
113. Have you seen a single vehicle go through the street ? I have seen no vehicles in it except the company's drays and waggons.
114. Is the street used by foot-passengers ? No.
115. Then all the traffic, vehicular and foot, passes from Oxford-street into Dowling-street direct ? Exactly.
116. Have you had any communication with the Brereton's as to the proposed closing of the street ? None whatever ; I am unable to find their representatives.
117. You have made efforts to find them ? Yes, I heard a daughter mentioned and I traced her to Redfern, I there found that she had removed and I have not her present address.
118. So that the proposal to give a piece of freehold to the Brereton estate out of Marshall-street is made without consulting the owners of the property ? Exactly.
119. But you think that the piece of land mentioned would be ample compensation for any possible right-of-way that might exist in connection with Marshall-street ? I think so.
120. Are you acquainted with the owners of the property lying between Brereton's property and the lane ? I am not.
121. Do you know whether the owners or occupiers of that property have any knowledge of the proposal contained in this Bill ? I am not aware.
122. Do you know whether they signed the petition presented to the council ? I could not say.
123. Have you or have any of the members of your company had any conversation with the occupiers of this piece of ground ? No communication whatever.
124. What is the total width of the land you propose to give up in addition to the encroachment ? At the extreme point 13 ft. 6 in.
125. The land tapers off to nothing at either end of a line about 306 feet long ? Yes, inclusive of Marshall-street. You would have to deduct some 37 feet on account of Marshall-street.
126. Upon this freehold area and upon the encroachment area you have buildings standing at the present time ? Yes.
127. And the carrying out of this scheme would necessitate the pulling down and rebuilding of the entire frontage of your brewery ? Yes.
128. And also the pulling down of the whole of the front of the old dwellings to the eastward ? Yes.
129. So that while you would obtain a piece of freehold land in Marshall-street and in the right-of-way you would relinquish a strip of land along the whole length of your frontage to Oxford-street and would do so at the expense of pulling down and rebuilding a large portion of your brewery and other premises ? Yes ; something was said some time ago with reference to tanks impeding the traffic in Marshall-street. I should like to mention that that is not the case.
130. There is no obstruction to Marshall-street by the brewery company except so far as their vehicles are concerned ? No.
131. *Mr. Perry.*] You have made every effort to find the owners of the adjacent property to which you have referred ? Yes.
132. And you have not succeeded ? No.
133. Are they asked to give up any land whatever ? No.
134. On the contrary they will receive some ? Yes.
135. So that in your opinion they will not be injured in any way by the proposed alteration ? In my opinion the only injury they can sustain is the loss of the exit to Oxford-street ; they will still have the exit to Dowling-street.
136. A perfectly level street as against a sandy hill ? Yes.

Mr. Thomas Marshall sworn and examined :—

137. *Chairman.*] You are the solicitor in charge of this Bill? Yes.
138. And you are a son of the original proprietor of the brewery? Yes; of the late Mr. Joseph Marshall, senr.
139. Have you any interest in the company at the present time? Only as a shareholder.
140. I suppose you have known this property from boyhood? For a period of about thirty years.
141. During the time you have known this property have you ever known Marshall-street to be used for vehicular or foot traffic? Never.
142. The portion which it is proposed to close has been used solely by the proprietors of the brewery? Yes.
143. Has the right-of-way ever been used by any one but the brewery company? Not since the company bought from the owners of the Brereton estate the south-west and south-east side of the right-of-way.
144. To your knowledge has the municipal council ever expended any money on the right-of-way? Not a farthing.
145. Has the council spent any money on the portion of Marshall-street which it is proposed to close? Not to my knowledge.
146. Is it ballasted or metalled? It seems to be sand.
147. You heard the evidence of Mr. Beveridge as to the owners of the Brereton estate? Yes.
148. Have you also made any effort to discover them? Yes.
149. Without success? Without success. I discovered one member of the family out Redfern way. I tried to get the people there to interest themselves in connection with the property, but they did not seem to be interested at all. They would not bother themselves about it.
150. Brereton's property is leased to the brewery? Yes.
151. For what term? For a number of years. The company are going to purchase the land.
152. Have they any purchasing right under their lease? No; but it is well understood by both parties that the company will purchase.
153. To whom is the rent paid? I believe it is paid into the bank.
154. Do you know if any effort has been made to find the persons who own the piece of land between Brereton's estate and the lane? Yes, I was informed that it belonged to Mr. John Neale, and I caused a communication to be addressed to him, but received no reply.
155. Did not Dr. Fullerton own some land there? I think you are referring to the piece of land which was bought by Mr. French, the bootmaker, who built a number of houses upon it.
156. From your knowledge of the locality you think no damage will be done to the interests of the infants under Brereton's will? No, I think not; in fact an additional value will be given to the property. I think there are eight children interested, and the property is of so little value that I believe that if it were put up for sale to-morrow it would bring only about £200. I doubt if it would bring that.
157. And you think their indifference in the matter is simply due to the fact that their interest is so small? Yes.
158. *Mr. McGowen.*] What is the width of the right-of-way? It would be just sufficiently wide for a cart to pass.
159. You heard the Mayor say, in his evidence, that he did not think the right-of-way belonged to the council? Yes; I do not think it does. It is a right-of-way left in connection with some old subdivision, and seems to have been forgotten.
160. It is not contained in the deeds of the brewery company's land? No, although it is exclusively used by the brewery. It is shut in by the brewery gate, and has been so, I think, for seventeen years. It leads up to the brewery stables. The horses go that way to the stables.
161. No one appears to possess a title to the land comprised in this right-of-way? So far as the knowledge that I have been able to obtain goes it is not vested in anyone. It appears to be there for the exclusive use of the brewery.
162. This Bill, if passed, will pre-suppose that the land was a gift from the municipal council to Marshall's Brewery Company, while as a matter of fact the council have no title to the land. If this Bill be passed Marshall's Brewery Company will possess a title? The Bill will give a title to a piece of land for which no title exists.
163. So far as you know? I think I know the circumstances of the case pretty well. I believe it was originally a right-of-way, to give access to the properties subsequently purchased by the brewery company. The land was formerly attached to the property on the south side of the lane.
164. *Mr. Perry.*] There was a well in the middle of the roadway at one time, was there not? Yes, but it was never used; it was filled with rubbish.
165. *Chairman.*] You say that the persons interested in Brereton's strip of land are several in number, and are possibly scattered over different parts of the Colony? Yes.
166. In your opinion it would be impossible to obtain decisive evidence with reference to the views of the whole number? I think so.

Mr.
T. Marshall.
17 Nov., 1892.

TUESDAY, 22 NOVEMBER, 1892.

Present:—

MR. LEES.	|	MR. MCGOWEN,
MR. NEILD,	|	MR. PERRY.

J. C. NEILD, Esq., IN THE CHAIR.

Mr. T. Marshall, solicitor, appeared on behalf of the promoters of the Bill.

Mr. Joseph Brereton called in, sworn, and examined:—

167. *Chairman.*] Are you the owner of the piece of land fronting Marshall-street, Paddington? I am interested in the piece of land there. My father has a life interest in it; it was previously my grandfather's property.
168. Will the property be transferred to you on your father's death? To the family.
169. There are other members of the family? Yes.

Mr.
J. Brereton.
22 Nov., 1892.

170.

- Mr. J. Brereton.
22 Nov., 1892.
170. Among how many will the property be divisible? Nine. I believe my father has power to give the property to any number he chooses; to divide it among them in accordance with his own wishes.
171. What is your father's name? William Brereton.
172. Where does he reside? He is living now at 53, George-street North.
173. What age is he? I could not say exactly, but I should say about 63 or 64.
174. Prior to the last few days did you know of this Bill dealing with Marshall-street? Only from what I saw about it in the newspapers.
175. Has your father, to your knowledge, seen any notification of it in the press? I think he only knows what I have mentioned to him.
176. You have conversed with him on the subject, then? Yes.
177. If you look at the plan you will see that it is proposed to close a portion of Marshall-street and the right-of-way off it edged with red, and to give it to the Marshall Brewery Company in exchange for the company setting back its buildings not only to the proper alignment, but to a further depth of 10 feet, so as to widen Oxford-street, and that it is also proposed to close that portion of Marshall-street tinted green, and to hand it over to your family by way of compensation for any loss you might sustain by reason of the closing of the portion of Marshall-street to which I have referred. Therefore, if this Bill were passed into a law you would have a westerly frontage of over 31 feet to Marshall-street. You would also have a frontage to a right-of-way 6 feet 6 inches wide, which would take the place of the present footpath on the north-west side of Marshall-street; is that a proposal which meets with your approval, and which you think would meet with the approval of the rest of your family? In the first place, I should like to ask a question. I should like to know what is supposed to be the depth of the allotment marked on the plan as owned by George Brereton?
178. I suppose it would be about 145 feet deep? Then I also want to know something about the right-of-way?
179. What information do you want on that point? I do not see any name down on the plan in connection with the property. I consider that, according to the will of George Brereton, my father is the owner of that property. My solicitor is of that opinion.
180. *Mr McGowen.*] Do you collect the rent for the portion of the Brereton property which is now let to Marshall's Brewery Company? I collect the rent for the house, ground, and right-of-way. That is the way in which the receipt is made out.
181. How often do you go to collect the rent? Generally every fourth week. I go sometimes on the first Monday, and sometimes on the last Monday of the month. The last rent was paid, if I am not mistaken, on the 31st of last month.
182. Who pays the rent? The accountant in the brewery company's office.
183. *Mr. Lees.*] Does that right-of-way as shown on the plan, affect the rear of the property which is not leased to the Brewery Company? I do not know how it would affect the property, I have not been to that portion of it for some years. It would of course decrease the value of the property if the right-of-way were disposed of, because the right-of-way is one half of the property. The Marshall Brewery Company are supposed to have purchased 18 feet 2½ inches of frontage. When they purchased, if I am not mistaken, there was a cottage on the property. We have a plan drawn showing that the cottage was on something like 13 feet of ground.
184. *Chairman.*] What do you wish to convey by that statement? I merely make it in order to show that the right-of-way should be wider than is shown on this plan.
185. You are under the impression then that your family have an interest in the right-of-way shown on the plan? Yes; a big interest, I think, considering that our family owns the right-of-way.
186. *Mr. McGowen.*] Where do you get that opinion? From the deeds.
187. Have you got deeds? Yes.
188. *Mr. Marshall.*] Have you the will of George Brereton? Yes; but Mr. Burton Bradley, my solicitor, told me not to bring it with me this morning.
189. *Mr. McGowen.*] At all events you have the will, it is in your solicitor's hands? Yes.
190. *Chairman.*] You have consulted with Mr. Bradley on this matter? Yes; he has given me a petition for presentation to Parliament.
191. It appears from your evidence that you have known what is going on. You have learned this from the press from time to time, and you have discussed the matter with your father? Only recently.
192. Have you discussed it with other members of the family? Yes.
193. When did you see them on the subject? I was talking to some of them about it last Sunday. We were waiting for the Marshalls to write to us. When I saw my solicitor in the first instance, he told me that he could do nothing until I obtained a plan and a copy of the Bill. I have been running all over the place trying to get a copy. I went to the Government Printing Office, and they told me that the Bill had not yet been printed.
194. How long ago was that? I called last Thursday for the first time, and I called afterwards on Saturday.
195. You were told the Bill was not printed? I was told that it would not be printed until it came out of Committee.
196. *Mr. McGowen.*] You called to see me on the night after the first meeting of the Committee? Yes.
197. Where did you get the information that I was a member of the Committee? I saw it in the newspaper. I then went to the Paddington Council Chambers to get a copy of the plan, but found that the Council Clerk would not give me a copy until I obtained the permission of the Mayor. I was not able to find him, and I went to see Mr. Ramsay.
198. Have you obtained a copy of the plan since? No. The solicitor said he would see Marshall's solicitor and see if he could get a copy of the plan from him; if he did not receive it yesterday he has not got a copy.
199. *Mr. Lees.*] Although you went to the brewery so often you heard nothing of the proposed changes? No; I simply went there, gave the receipt for the rent, and walked away.
200. *Chairman.*] What rent are you deriving from this piece of property? Ten shillings a week.
201. For the whole thing, buildings, and all? Yes: house, grounds, and right-of-way.
202. *Mr. McGowen.*] You are sure the right-of-way is mentioned in the receipt? Yes.
203. *Mr. Perry.*] You have not got one of those receipts? No, but I could write you one from memory.
204. We should like to see one of the receipts? Of course the brewery company would keep the receipts themselves.

Mr.
J. Brereton.
22 Nov., 1892.

205. *Mr. McGowen.*] In making out the receipts you have always written "house, ground, and right-of-way;"—you are quite sure of that? Yes.
206. *Mr. Perry.*] How long have you known the property marked on the plan as a right-of-way? The house standing on George Brereton's property, as shown on the plan, was the house in which my grandfather resided, and in it I was born. On the property marked as owned by the Marshall's Brewery Company, and fronting the right-of-way, there used to be a cottage in which my aunt lived. Very close to that, and somewhere in the right-of-way, there used to be a well. There was no water supply to Paddington in those days, and we used to get our water from that well.
207. How long back can you recollect this property? I can recollect being there in 1875, on the occasion of my mother's death.
208. Was the well in use then? I cannot recollect; I know it was used when we were living there.
209. Was the well within a fence or not? It was cased in; there was a kind of door to it.
210. Affording protection to the well? Yes.
211. As long as you can recollect there has been a right-of-way there? It used to be a right-of-way to get at the cottages to the back. I produce a plan from which you will see that the property bought in Marshall-street was 41 feet. I also produce a plan showing the land when it was first sold by auction, and when lot 7 was bought by George Brereton. The first plan I produce is a subdivision of lot 7.
212. *Mr. Marshall.*] Were houses built and occupied at the eastern end of the property and fronting the right-of-way at its eastern extremity? Yes.
213. Were those houses owned by Mrs. M'Culloch? They were owned by George Brereton, and willed to Mrs. M'Culloch, or the M'Culloch family.
214. The only access to those properties willed to Mrs. M'Culloch, was through the right-of-way? That is, I believe, the only way in which you could get to them.
215. Are the cottages to which I now refer the property of the brewery company? I could not say to whom they belong now. I never knew what the brewery company actually bought.
216. Do you not know that the property has been sold by the M'Culloch family? I believe Mrs. M'Culloch sold the Marshall family some property, but I never knew what was sold.
217. Do you not know that the particular property is now occupied by the brewery stables? I do not know how it is occupied now. I have not been there for some time.
218. On one of the plans produced by you there is shown another cottage half way up the right-of-way, and fronting it? Yes.
219. Do you know whether that cottage is now the property of the brewery company? That question I cannot answer; I do not know how much was sold to the company.
220. Do you not know that it is occupied by the brewery company? I could not say.
221. Is the property immediately in front of the last-mentioned cottage, and fronting Marshall-street, now the property of the brewery company? That is another question I cannot answer; I do not know what the Marshalls bought.
222. Do you not know that the M'Culloch family sold their property? I know they sold it, but I do not know to whom.
223. Do you not know that the tower of the brewery is built on that very property? I do not know. The only part of the brewery I ever saw was the front of it.
224. *Chairman.*] Yet you say you go there every four weeks for the rent? I go to the office only to get the rent. I do not go there to inspect the premises.
225. But cannot you see the buildings referred to from the South Head Road? Some of the Brewery buildings can be seen, but not much can be seen from the front of the street.
226. Although you know absolutely nothing about the sale of the property, although you cannot say whether it has been sold by members of your family or not, although you cannot say if it has been bought by the brewery company, although you decline to say who are the owners, or give any information whatever about the matter, you are nevertheless prepared to swear that the right-of-way is the property of your family? So far as the right-of-way is concerned you can see from the will that it has been willed to my father. I could not tell you how much property Mrs. M'Culloch sold.
227. *Mr. Marshall.*] What do you value your father's property at now? I am not prepared to give an estimate.
228. Do you think it is of a greater value than £200? Yes.
229. Do you think it would bring that in the open market? I do.
230. What do you think it would bring;—do you think it would bring more? It depends upon how much land is sold.
231. *Chairman.*] Have you or any of your family ever used Marshall-street as a thoroughfare? Yes.
232. In what way;—have you ever driven a vehicle along it? Not so far as I am concerned; but I do not know for what purposes it may have been used by other members of the family. My father lived there after my grandfather, and he may have had a conveyance.
233. *Mr. McGowen.*] You say that you have collected the rent, and that the brewery company have leased a portion, if not all, of the land of the Brereton family;—when does their lease expire? When the eldest boy in the family is 21 years of age.
234. When will that be? Next October.
235. *Mr. Lees.*] You see the piece of land upon the plan crossing Marshall-street and tinted green. Do you think that would be anything like a fair compensation for what you would lose in your present frontage to Marshall-street in your exit to Oxford-street, and in respect of the right-of-way. Do you think it would be a sufficient compensation? I do not think it would.
236. *Mr. Marshall.*] By how much do you think you would be short? I consider that we are in a position to prove that the right-of-way belongs to us.
237. But how much do you think you would be short in the matter of compensation? I am not prepared to answer that question now.
238. *Mr. Lees.*] I would like a more definite answer to my question. I will again ask you whether you consider the piece of land, tinted green, anything like a compensation for what you would lose? Of course we should lose our exit to Oxford-street if Marshall-street were closed as proposed, and we should also lose the right-of-way. I should like to know also of what use the piece of land you refer to would be. What could you do with a frontage like that? What could you put upon it?

Mr.
J. Brereton.
22 Nov., 1892.

239. *Mr. Perry.*] Putting the question of the right-of-way aside for the time being, if you received the portion of land tinted green, would it compensate you for the closing of Marshall-street? Putting the question of the right-of-way aside, if Marshall-street were closed, as shown on the plan, the value of our property would be considerably decreased, and I do not consider that the piece of land which it is proposed to give us would recoup us for our loss.
240. Do you not think that the piece of land, tinted green, with its frontage to Marshall-street, would be a sufficient compensation for your right-of-way to Oxford-street along Marshall-street? No; because we should lose a certain amount upon our original property through Marshall-street being blocked.
241. Your objection to the Brewery Company having the right to the right-of-way as proposed in the Bill is due to the fact that you consider you have an interest in that right-of-way? Yes.
242. Not as a right-of-way, but as owning the land? Yes.
243. *Mr. Lees.*] Do you know whether the triangular piece of land adjoining was laid down as part of the Sydney common when your father became possessed of the land there? I doubt it very much; I do not think it was so at the time my father became possessed.
244. *Mr. McGowen.*] You are here representing a section of your family? I am representing the family.
245. Are they aware of your coming here to-day? Yes.
246. How many members of your family are interested in this property? To the best of my belief, nine.
247. Have you communicated with the whole of them? Not with all.
248. With how many? With four; including myself, I represent five.
249. *Chairman.*] You are proposing to present a petition to the House. Have four members of your family besides yourself signed it? I fancy there are three signatures besides mine. My solicitor told me that it was necessary to get only three members of the family to sign.
250. You say that you represent four members of the family besides yourself, but only three besides yourself appear to have signed the petition? I did not get the petition for signature until about an hour ago. If I had had it before, and had looked up the members of the family, I dare say I could have obtained the whole of the signatures.
251. *Mr. McGowen.*] You think you could have got them all to sign the petition if you had had time? Yes.
252. During any portion of the time you have drawn the rent, has it been paid into a bank to your credit? No; my father has a life interest in the property, and that being so, I take it that he can do what he likes with the rent.
253. *Chairman.*] I suppose the evidence you have given this morning is given on behalf of the owners of the property, and sets forth their objection to the Bill? I do not know whether they object to Marshall-street being closed; but if it were closed they would want some compensation for it. I think they would want something more than is proposed to be given under this Bill. I have had a great difficulty in seeing the plan, and other members of the family have been unable to see it. Had I seen the plan before, I should have given you much more information on the subject.
254. Am I to understand from your last answer that your objection is not to the closing of Marshall-street, but to the insufficiency of the proposed compensation? Yes. I consider that the closing of Marshall-street will decrease the value of our property.
255. You think you ought to receive larger compensation than is proposed by the Bill? The Bill does not propose to give us anything for the right-of-way.
256. *Mr. Lees.*] Would you be prepared to sell right out to the brewery company? The family might be prepared to sell right out, but I should have to consult them on the point. I think they could do so, and to the best of my belief they would do so.
257. That would be a much better transaction in the interests of your family than the acceptance of the proposed strip of land, you think? Yes.
258. In the event of any proposal being made to you to buy your family's interest right out, on what basis would you sell? In the first place, if the brewery company would submit an offer to the family, and they were contented to take it, I would most certainly accept it. If, on the other hand, they thought they were not getting proper value, it might be determined by some other person, such as an auctioneer's valuator.
259. Richardson and Wrench, or Hardie and Gorman? Yes.
260. You would be prepared to accept the valuation of any reputable firm of valuers? Yes.
261. *Mr. Marshall.*] You only want the market value, whatever that may be? Yes.
262. Will you see the members of your family and talk the matter over with them? Yes.
263. Will you get a valuation made by some leading valuator, or shall the brewery company get a valuation made? In the first place I should like to take a copy of the plan and show it to the rest of the family in order that they may see what is going to be done.
264. *Mr. Lees.*] You have read the schedules to the Bill? Yes.
265. Does the schedule containing the description of the property belonging to the late George Brereton describe it accurately? I could not answer that question.
266. It is not correct in accordance with the plans you have produced to-day, is it? No, not according to our plans.
267. In what respect does it differ from those plans? In the frontage. Our plan shows more than the plan before the Committee. There is a difference in the width of the right-of-way.

15

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

MINUTES OF EVIDENCE

TAKEN BEFORE

THE SELECT COMMITTEE

ON THE

OXFORD-STREET IMPROVEMENT BILL.

TUESDAY, 13 FEBRUARY, 1894.

Present:—

MR. NEILD, | MR. GORMLY,
MR. PERRY.

JOHN CASH NEILD, ESQ., IN THE CHAIR.

Mr. Thomas Marshall called in, sworn, and examined:—

1. *Chairman.*] Are you solicitor for the Bill? Yes.
2. Since you were last examined has there been any dealing to your knowledge with any of the land referred to in the Bill and shown on the plan put in? The Marshall's Paddington Brewery Company (Limited) have purchased from the trustees and beneficiaries of the Brereton family, under an order of the Equity Court, by indenture of the 2nd February, 1894, all the lands to which the Brereton family were entitled fronting Marshall-street.
3. Does that purchase include any rights that were alleged to exist in the Brereton family to the right-of-way shown in the plan? Yes; the description includes that right-of-way as well.
4. Has that purchase been completed? Yes; completed, stamped, and registered, and the consideration, £500, paid. It was registered on the 5th February, 1894, No. 830, book 530.
5. Do you produce the conveyance? Yes.
6. Does the conveyance of this property to the brewery company remove every ground of objection that might have existed on the part of the Brereton family? Yes.
7. Have you since the Committee last met received any intimation of any objection on the part of any property-owner in the vicinity to the Bill? No.
8. You are then absolutely without knowledge of any objection to the measure as now submitted? Yes.
9. Do you produce a new plan showing that the property in question is now vested in the brewery company, and a plan showing the altered circumstances consequent upon the conveyance? Yes.
10. Do you hand in that plan? Yes. [*Appendix A.*]
11. Do you put in new schedules to take the place of those in the Bill, so as to meet the altered circumstances? Yes. [*Appendix B.*]

Mr.
T. Marshall.
13 Feb., 1894.

APPENDIX.

OXFORD-STREET IMPROVEMENT BILL.

APPENDIX.

[*Handed in before Select Committee.*]

A.

[Plans.]

B.

THE FIRST SCHEDULE REFERRED TO.

All that piece or parcel of land situated in the parish of Alexandria, county of Cumberland, Colony of New South Wales, be the hereinafter mentioned dimensions a little more or less, containing by admeasurement five thousand two hundred and twenty-eight square feet: Commencing at a point on the south-east boundary-line of block L of the subdivision of the Sydney Common, at its intersection with the new building-line on the south-west side of Oxford-street; and bounded thence on the north-east by said building-line of Oxford-street bearing south fifty-five degrees forty-one minutes thirty seconds east forty-two feet seven and three quarter inches to land formerly granted to Maria Zouch, and now the property of Marshall's Paddington Brewery (Limited); thence on the south-east, north-east, and again on the south-east by the boundary-lines of that land bearing south fifty-four degrees thirty-five minutes thirty seconds west sixty-four feet four and a quarter inches, south forty-five degrees thirty-seven minutes east fifty-six feet, south forty-three degrees twenty-five minutes east thirty feet nine inches, and south forty-five degrees forty-one minutes west twenty-seven feet and a half inch to land formerly the property of George Brereton; thence on the south-west, north-west, and again on the south-west by the boundary-lines of that land bearing north forty-three degrees thirteen minutes west twelve feet six inches, north forty-five degrees forty-one minutes east fourteen feet seven inches, and north forty-three degrees twenty-five minutes west eighteen feet and two and a half inches to other land now the property of Marshall's Paddington Brewery (Limited); thence again on the south-west, south-east, and south-west by the boundary-lines of last-mentioned property bearing north forty-five degrees thirty-seven minutes west twenty-six feet eleven inches, south forty-five degrees west four feet six inches, and north forty-six degrees forty-eight minutes west thirty-one feet eleven and a half inches; thence on remainder of the south-east by the north-west boundary-line of said property, and the north-west boundary-line of land before referred to, formerly the property of George Brereton, bearing south fifty-four degrees thirty-five minutes thirty seconds west in all twenty-seven feet four inches to the westernmost corner of last-mentioned land; thence on remainder of the south-west by the north-eastern termination of Marshall-street bearing north forty-six degrees twenty-three minutes west thirty-seven feet eight and a half inches to block L of the subdivision of the Sydney Common aforesaid, now the property of Marshall's Paddington Brewery (Limited); and thence on remainder of the north-west by part of the south-east boundary-line of that land bearing north fifty-four degrees thirty-five minutes thirty seconds east ninety-five feet seven and a half inches, to the point of commencement.

THE SECOND SCHEDULE REFERRED TO.

All that piece or parcel of land situated in the parish of Alexandria, county of Cumberland, Colony of New South Wales, be the hereinafter mentioned dimensions a little more or less, containing by admeasurement three hundred and twelve square feet, and being part of the land comprising block L of the subdivision of the Sydney Common: Commencing at the intersection of the present building-line on the south-west side of Oxford-street with the east building-line of Dowling-street; and bounded thence on the north-east by said building-line of Oxford-street, being the north-east boundary-line of said block L bearing south sixty-nine degrees forty-six minutes thirty seconds east ninety feet eight inches to the easternmost corner of said block L; thence on the south-east by part of the south-east boundary-line of said block L, bearing south fifty-four degrees thirty-five minutes thirty seconds west eight feet four inches to the new building-line in Oxford-street; and thence on the south-west by that building-line bearing north fifty-five degrees forty-one minutes thirty seconds west eighty-six feet two and three-quarter inches, to the point of commencement.

And also all that piece or parcel of land situated in the parish of Alexandria, county of Cumberland, Colony of New South Wales, be the hereinafter mentioned dimensions a little more or less, containing by admeasurement one thousand three hundred and forty-five square feet, and being part of the land granted to Maria Zouch, by Crown grant dated thirtieth April, one thousand eight hundred and forty: Commencing at the intersection of the present building-line on the south-west side of Oxford-street with the south-east building-line of Marshall-street; and bounded thence on the north-east by said building-line of Oxford-street bearing south sixty-nine degrees forty-six minutes thirty seconds east thirty-two feet five and a half inches and south forty-seven degrees thirty-seven minutes forty seconds east one hundred and forty feet seven inches to the northernmost corner of land now the property of H. F. Castle; thence on the south-west by the new building-line of Oxford-street bearing north forty-three degrees thirty-six minutes thirty seconds west one hundred and thirty-eight feet six inches and north fifty-five degrees forty-one minutes thirty seconds west thirty-seven feet one and a half inch to Marshall-street aforesaid; and thence on the north-west by the south east building-line of said Marshall-street bearing north fifty four degrees thirty-five minutes thirty seconds east twelve feet five and three-quarter inches, to the point of commencement.

[Two Plans.]

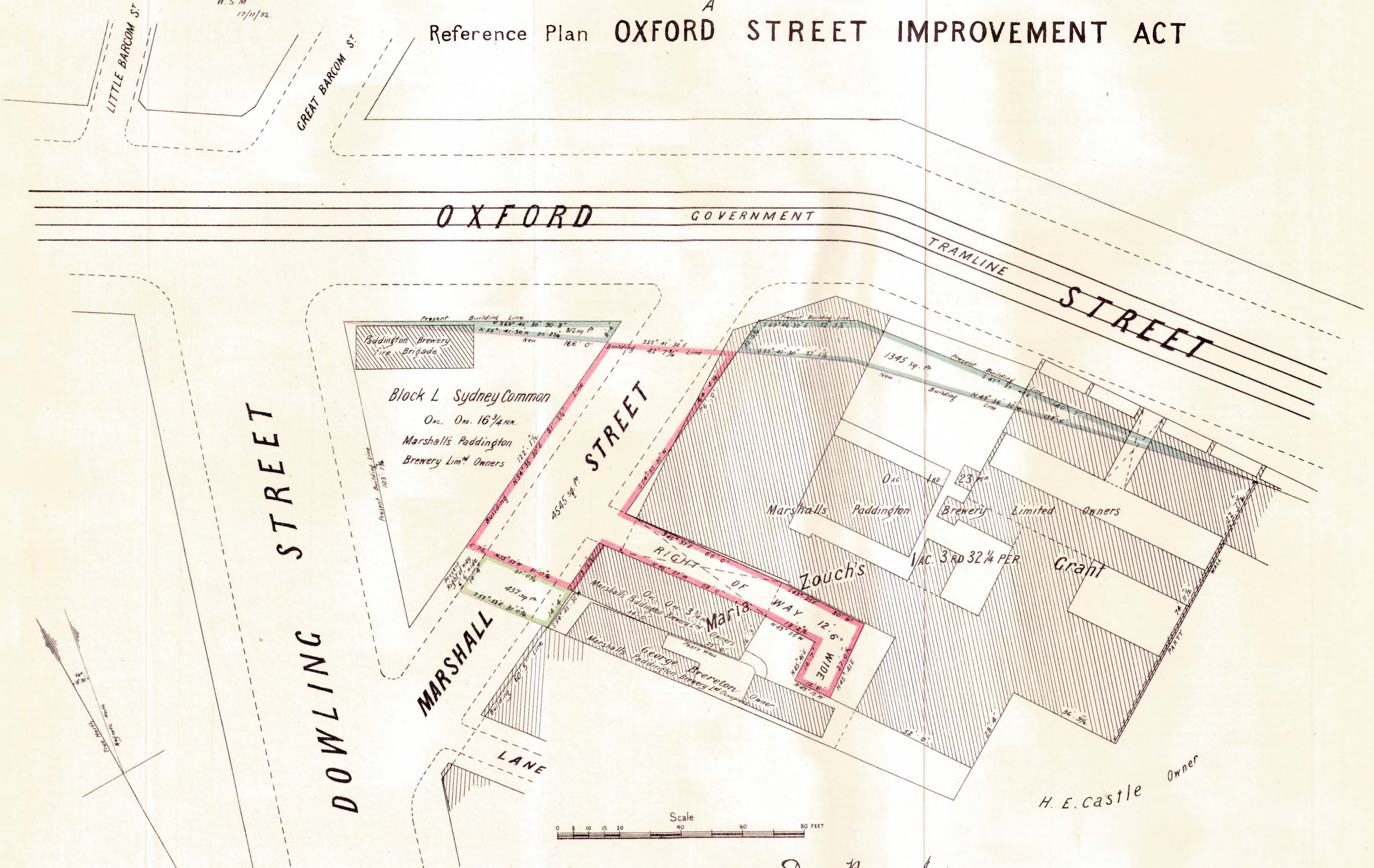
Handed in before the Select Committee on
Oxford Street Improvement Bill

W. S. M.
17/11/92.

1892-3

"A"

Reference Plan OXFORD STREET IMPROVEMENT ACT

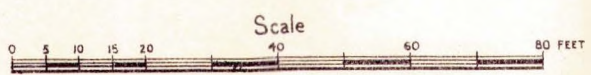


DOWLING STREET

MARSHALL STREET

STREET

TRAMLINE
STREET



David Ramsay Junr
Licensed Surveyor

PHOTO-LITHOGRAPHED AT THE GOVT. PRINTING OFFICE,
SYDNEY, NEW SOUTH WALES.

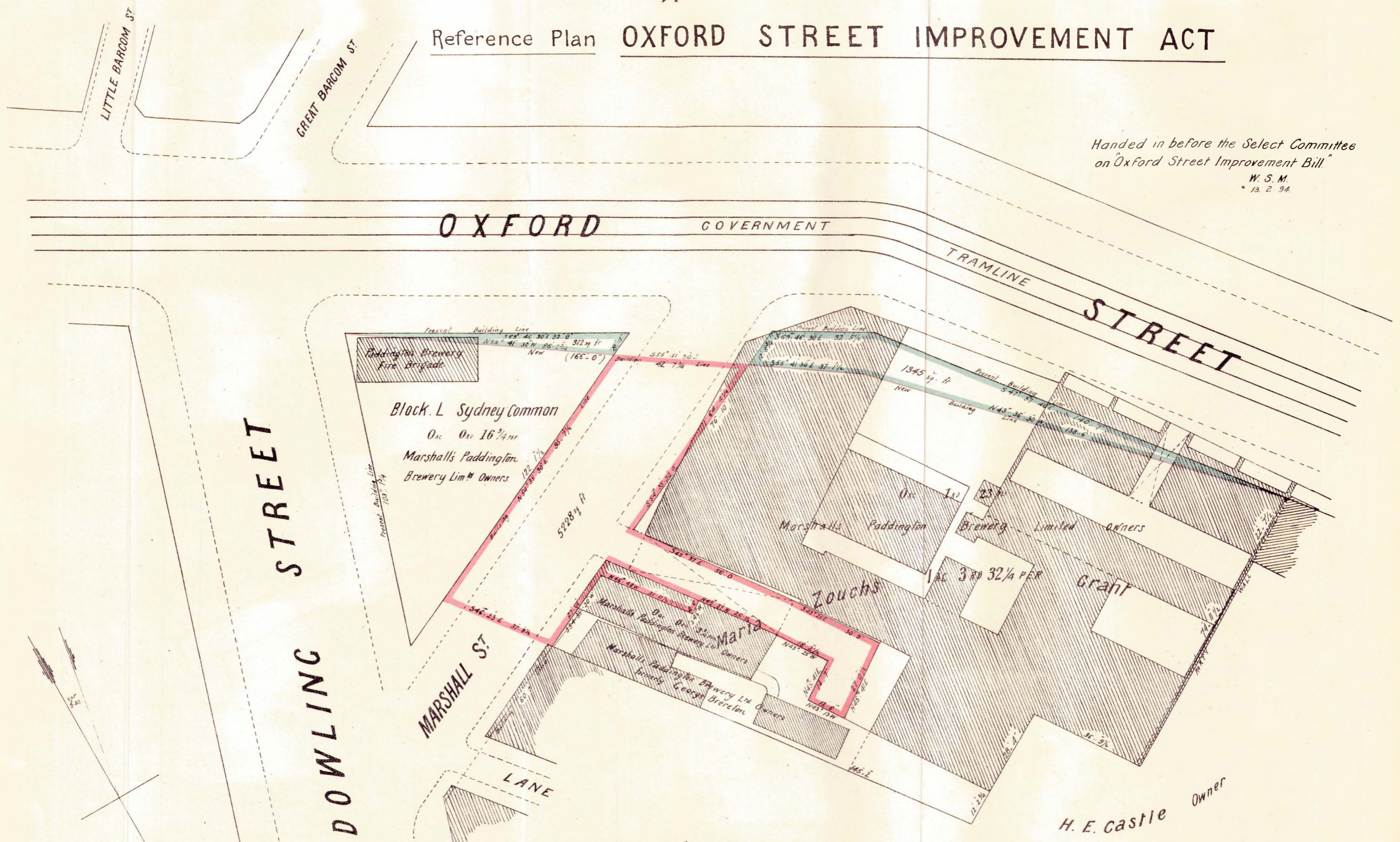
(Sig. 125-)

1894
"A"

Reference Plan **OXFORD STREET IMPROVEMENT ACT**

Handed in before the Select Committee
on "Oxford Street Improvement Bill."

W. S. M.
13. 2. 94.



DOWLING STREET

OXFORD

GOVERNMENT

TRAMLINE

STREET

MARSHALL ST

LANE

Scale 20 feet to 1 inch



David Ramsay Junr
Licensed Surveyor

PHOTO-LITHOGRAPHED AT THE GOVT. PRINTING OFFICE,
SYDNEY, NEW SOUTH WALES.

Sig 125.

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

AUSTRALASIAN RIGHTS PURCHASE BILL.

(PETITION FROM THE MUNICIPAL COUNCIL OF THE BOROUGH OF RICHMOND IN FAVOUR OF.)

Received by the Legislative Assembly, 19 April, 1894.

To the Honorable the Speaker and to the Honorable Members of the Legislative Assembly of New South Wales, in Parliament assembled.

The humble Petition of the Municipal Council of the Borough of Richmond, in New South Wales,—

RESPECTFULLY SHOWETH:—

1. That the Bill now before your Honorable House, intituled "The Australasian Rights Purchase Bill," etc., etc., has been under our consideration, and we unanimously approve of it.
2. The peculiar situation of Richmond, being so near the Rivers Colo and Grose, enables us to confidently assure your Honorable House that the scheme for generating electric light and power, as proposed by the Bill, is calculated to confer great advantages upon this Borough.
3. For many years the inhabitants of Richmond have waited for a feasible scheme for lighting the Borough. There is no probability that gas will be introduced, and even if it should be it is inferior to electricity. This Bill, therefore, if passed into law, will be the means of lighting the streets and houses of the Borough at a moderate cost.
4. Your Petitioners are deeply sensible of the advantages which will accrue to the inhabitants of Richmond by the introduction of the electric power as a cheap and highly efficient motive force for manufactories, and they welcome the proposal to supply it.
5. Your Petitioners would further humbly represent that many persons now ineffectually seeking labour in and about this Borough would find profitable employment on the works at the Colo and Grose Rivers and other places along the main cable line. In addition, a very large sum of money must be spent in carrying out the works and maintaining the same from year to year, which will be of the utmost benefit to the inhabitants of this Borough and neighbourhood.
6. Your Petitioners, therefore, humbly pray that your Honorable House will be pleased to pass the Bill referred to.
7. And your Petitioners, as in duty bound, will ever pray.

[Here follow 9 signatures.]

1894.

NEW SOUTH WALES.

DEPARTMENT OF MINES AND AGRICULTURE.

(ANNUAL REPORT OF THE STOCK AND BRANDS BRANCH)

Presented to Parliament by Command.

TO THE HONORABLE T. M. SLATTERY, ESQ., M.P., MINISTER FOR MINES AND
AGRICULTURE.

Sir,

In presenting the Report of the Acting Chief Inspector of Stock for the year 1893, I have the honor to invite attention to the increase of cattle during the past year, and to suggest that this may to some extent be due to the prospective increase in dairying throughout the Colony.

The decrease in the number of horses is so small as to need no notice, but it is very satisfactory to notice that in a large majority of the districts the breed is improving in quality and that they were generally free from disease.

In the number of sheep there was at the end of last year a decrease of 1,099,426, due to the numbers boiled down, exported, and bad seasons in some districts. It is satisfactory to find that the question of exporting frozen mutton is beginning to attract the attention due to so important a subject, and if the project which has been started to form a "Graziers Meat Export Company" should result in success, we may fairly hope that a large increase upon our present export of frozen mutton will follow. There is ample room for considerable expansion, as the Acting Chief Inspector estimates the cast of fat sheep for the ensuing season at 5,708,466, whereas so far as I have been able to ascertain our export of frozen meat for last year was only 486,709 sheep, 47,241 haunches of mutton, and 4,670 quarters of beef. Of course a quantity of tinned meat was exported, but the whole of our meat export bears no comparison to what it should be, considering the immense capabilities of this Colony and the practically unlimited market for our meat in Great Britain and the Continent. Representatives of some of the large firms in England who have recently visited these colonies with the object of taking stock of our resources have assured the Department that in various parts of Great Britain there are immense markets which have not yet been tapped. For example, the opening of the Manchester Ship Canal will enable us to reach an immense population of well-paid artisans, who may be reasonably expected to become large consumers of Australian mutton.

The success which has attended the introduction of this trade in New Zealand has, no doubt, had much to do with the present desire in this Colony to enter vigorously into an enterprise which promises to become, in the near future, one of our most important branches of industry. It has been urged, and no doubt with truth, that the proximity of the shipping ports to the pastures of New Zealand gives that Colony a great advantage over this Colony, and that consequently the success achieved in that Colony is no proof that the trade will be a success in this, but, on the other hand, it is stated that in America, where the trade is successfully conducted,

341—A

[2,015 copies— Approximate Cost of Printing (labour and material), £31 3s. 0d.]

meat

meat is carried by rail 1,000 or even 1,400 miles to the port of shipment, and though the sea voyage from America to Great Britain is much shorter than from this Colony the distances by rail are so much greater that possibly it will be found that the conditions in this Colony will enable her to compete successfully with both of those countries. Our success will probably depend, in a large measure, upon the solution of the problem, how to kill our sheep on or near their pastures, and to bring them in the best condition, and at the smallest cost, to the port of shipment. However, we may expect to receive a full report from the Chief Inspector of Stock (Mr. Alexander Bruce) as the result of his investigations into the meat trade in America, Canada, Great Britain, and the Continent, and, as he has been actively advocating for so many years the export of our mutton, there can be little doubt that the question will be exhaustively dealt with by him. While on the subject of export of frozen meat, I may perhaps be pardoned for inviting attention to the very satisfactory prices realised in London for rabbits recently sent there, and to suggest that by the aid of rabbit-proof netting an inexpensive mode of trapping on a large scale might be introduced which, if supplemented by the best methods of preparing for export, might enable this Colony to secure a large and profitable trade which would prove a boon to pastoralists and farmers, and give employment to a very large number of men.

As regards our wool clip for last year, it is gratifying to note that the estimate shows an increase of 18,160,914 lb. over the clip of the previous year, and it is equally gratifying to note that each year the proportion of our clip that is shipped at our own ports of Sydney and Newcastle is increasing, while the proportion sent through Melbourne and Adelaide is decreasing.

I have, &c.,

HARRIE WOOD,
Under Secretary.

Department of Mines and Agriculture,
Sydney, 21st May, 1894.

The Acting Chief Inspector of Stock to The Under Secretary for Mines.

Department of Mines and Agriculture,

Stock and Brands Branch, Sydney, 1 May, 1894.

Sir,

I have the honor to submit my Report of this Branch for the year 1893, and to state for your information that cattle have increased during the year to the extent of 8,426, while horses and sheep have decreased during the same period, the former in the small number of 17, and the latter to the considerable extent of 1,099,426. The decrease in sheep is occasioned by large transactions in boiling down, bad seasons in some districts, and numbers exported.

Several deaths have occurred among sheep in the Colony during the year, but the numbers dying is not unusually large. A small percentage of deaths from pleuro-pneumonia has taken place among cattle, but has not been so extensive as to warrant any special reference thereto. Altogether, I am pleased to state that the health of the flocks and herds generally will bear favourable comparison with former years, allowing for altered circumstances, which are herein referred to.

Recently reports have reached this office from some districts of several deaths among sheep, and as some of those have occurred rather suddenly, the cause has been attributed to anthrax.

From the description of the various organs after *post mortem* examination, I am convinced that the greater portion of the losses are not occasioned by anthrax, but rather to anæmia, consequent upon dropsical affection induced by liver rot, or fluke, in an advanced stage.

I am further convinced that much of these losses, from the disease last referred to, may be averted by change in the system of management.

Sheep have been placed upon country for years past which in the first instance, in my opinion, was never naturally intended for them, and by continuously stocking, and in some cases, overstocking this country, many of the original and virgin herbage and grasses have been eaten out. The surface features of the land have also changed by reason of storages of water in swamps, and breaking out of springs, and in many instances little or no attention has been paid to drainage of land which is naturally devoid of all saline properties, and by that reason most favourable to propagation by natural agencies of fluke, and owners have not, as a preventive, used salt plentifully in addition to sulphate of iron, but have, in many instances, had recourse to these substances when the disease has become firmly established.

These alternatives are not cures, merely preventives, and tending to assist any natural defect in the country by supplying the requisites to maintain health.

Further, sheep of the same age are, to a large extent, kept in the same paddocks for many months without any change; this in itself is a mode calculated to induce disease, and it is only reasonable to suppose that a change of diet is most necessary and essential to good health in sheep, as in all other animals.

Sheep of different ages require different feed, as an animal of a year old or less cannot digest, thrive, and maintain in good health upon the same diet as an animal of mature age. Neither can those that have passed the prime of life assimilate the same class of food as those of a more youthful age.

I am convinced that were sheep changed with tolerable frequency into other paddocks (although it is some labour and trouble to do so) the results would in every way compensate, and the death-rates, as occurring lately, would be, I am sure, considerably reduced, and I would desire, with all respect, to place these suggestions before the owners of sheep in this Colony in the hope that they may be induced to practically test the mode herein described, and the results will, as before stated, I feel sure, be in every way satisfactory.

Regarding anthrax, I regret to state it is undoubtedly increasing, and is largely attributable to the non-destruction by fire of animals dying from that disease, there is no better or more effectual means of destroying sources of infection than fire, and all animals dying from whatever cause should be completely destroyed by that means, and there is no surer way of disseminating this disease than leaving dead carcasses on the surface undestroyed. I have instructed the various inspectors to be vigilant in detecting and rigorously prosecuting and pressing for fullest penalties allowed by law, all persons leaving dead stock undestroyed on the travelling stock reserves or within the legal distance ($\frac{1}{2}$ a mile) of any public road.

The decrease of sheep during the year is principally through large numbers being boiled down, in consequence of saleable prices not being obtained otherwise. The past year has been one of universal depression, and its effects have been most keenly felt by those engaged in grazing and pastoral pursuits, but with the interest taken in, and attention being devoted to freezing and preserving meat in this Colony, I anticipate matters relating to stock will considerably improve in the very near future.

In order to increase the size of the frames of the sheep in this Colony in the future and render them more suitable for export a number of coarse-woolled sheep—Lincoln, Border Leicester, and Romney Marsh rams—have been imported from New Zealand. The judicious mating of these with our well-grown Merino ewes should result in a breed of sheep of good marketable size. Some 1,300 of the rams before referred to arrived here during the year and have been forwarded to different parts of this Colony for breeding purposes, and I anticipate a much larger number of a similar class of rams (and probably ewes also) will be imported here during 1894 for the same purposes.

I beg to point out the very great losses that occur to this Colony owing to many parts being infested with the Bathurst burr, and the great necessity for legislation on the subject, so that this useless, destructive weed may be destroyed, as the depreciation in value caused by the prevalence of this noxious growth is almost incalculable.

During the year I have inspected the following District Inspectors' Offices, and their books and work:—Balranald, Bourke, Cannonbar, Condobolin, Deniliquin, Dubbo, Forbes, Gundagai, Hay, Hillston, Ivanhoe, Menindie, Molong, Naranderra, Narrabri, Urana, Wanaaring, Wentworth, and Wilcannia.

This necessitated very considerable travelling and in some instances great difficulty owing to some portions of the Colony being flooded.

I found the officers in most cases performing their duties satisfactorily, while in a few cases they were not so, and I have recommended some retirements and changes which have been approved and carried into effect, and which I have every reason to believe will have the effect of improving the tone of this Branch. I am of opinion and would recommend that the whole of the inspectors' offices and their work should be personally examined by the Chief Inspector or some responsible officer of this Branch once every year. This action would, I feel sure, conduce to greater efficiency, by keeping the head of the Branch in more direct touch with his country inspectors, as personal examination into these duties and the manner in which they are performed, and notation of events referring to stock reserves, &c., is at all

times

times more valuable than documentary reports only. Further, the various owners of holdings whom I met during my visit were very pleased to meet the Acting Chief Inspector, and expressed the hope that the visits would be more frequent than hitherto, and any of the Boards of Directors I met expressed the same sentiment, and even went so far as to say that they considered these annual inspections a positive necessity. In travelling in the Bourke and Wanaaring districts I observed large numbers of camels or dromedaries roaming about the country and grazing uncontrolled; these animals are no doubt useful for carrying purposes in a climate such as the district referred to, but in my opinion they should be made amenable to the laws that regulate the movements and grazing of other stock. The Impounding and Public Watering-places Acts, I suggest, should at the earliest possible moment be amended, and their provisions extended to include these animals. The Brands Act I think should be also so amended as to include the necessary provision to allot brands, so that these animals should be branded and thus ownership established, for at the present time it is almost impossible for any but an Afghan to identify them, and in the absence of proof of ownership it is most difficult to substantiate any action for trespass, &c., &c.

The Brands Act as at present in existence, in my opinion, should be amended with respect to branding horses and cattle, and different portions of the hides of cattle selected for imprinting brands upon than those at present in existence, and which are found to interfere very seriously with the commercial value of the hides, for use subsequently as leather—other and less valuable portions of the hides should be chosen for branding, *i.e.*, such as the cheek, neck, or low down on the forearm or thigh. The portions of the hide here suggested to be branded upon, under the altered circumstances under which cattle are now kept as compared with the manner years ago (when the Act was passed), would be, in my opinion, quite as effectual for purposes of recognition, and would result in considerable increase of price for the animals and their hides.

It has frequently been reported during the year that hares in the more settled districts are becoming a source of trouble and great loss, and some persons even go so far as to say they threaten to become more disastrous than the rabbits.

In my opinion this is an exaggeration. No doubt hares are very destructive both to orchards and farms; but these, by comparison with the vast area of Crown lands upon which sheep are depastured and where the rabbits prevail unduly, reducing the country to the state of almost perpetual drought, is widely dissimilar to the ravages of hares, who practically confine their depredations to the smaller areas of orchards and farms, which in most instances are freeholds, or presumably so. These properties may be wire-netted by individual owners in the cases of orchards, and in the same manner, in groups, the farms. The cost of so doing is not an insurmountable difficulty.

This course has been adopted in the rabbit-infested country over immense areas of Crown lands, with the prospect of an early termination of lease, in very self-interest protection; and it, I think, may with advantage be followed by owners of freehold or leasehold properties.

Altogether I think the work of protecting such properties as orchards and farms from intrusion of hares may be undertaken at a cost not inconsistent with the value of the property to be defended, and the desired results obtained by the use of wire-netting as before stated.

Some experiments not yet completed are being carried out at Moss Vale under the direction of Dr. Cobb, who is, and has for some months been, scientifically engaged in investigating worms and other parasites affecting sheep, and it is hoped that, when his labours in this matter have been completed, much valuable information may be obtained.

During the year a quarantine for ships' stock has been established at the port of Newcastle, and has been extensively used; so much so that it has been found necessary to erect additional buildings for the accommodation of animals that may be quarantined there.

I have, &c.,

RICH. D. JONES,

Acting Chief Inspector of Stock.

RECORD OF INSPECTORS' WORK.

The Colony is now divided into sixty-four Sheep Districts, and there are forty-eight Staff Inspectors employed, who have made the following inspections during the year 1893:—

Stock, including horses, cattle, and sheep	...	...	...	23,911 inspections.
Reserves	...	...	...	4,343 "
Public Pounds	...	...	...	359 "
Commons	...	...	...	603 "
Dogs	...	...	...	1,313 "
Pigs	...	...	...	1,658 "
Under Pastures and Stock Protection Act	...	...	...	7,045 "
Under Public Watering-places Act	...	...	...	1,696 "
Total	...	...	...	40,928

being an average of 853 inspections by each inspector.

The total number of stock inspected was 149,593 horses, 1,000,612 cattle, and 28,499,037 sheep. This shows a decrease of 25,821 sheep inspected during 1893, as compared with the previous year, while there is an increase of 13,240 horses, and 75,847 cattle.

Homebush Sale-yards.

The whole of the stock arriving at these yards were carefully inspected on each sale day, by an Inspector of Stock and the Government Veterinarian, with the result that a considerable number were condemned as unfit for human consumption. The numbers of stock submitted to auction were as follows:—

Cattle, 110,450 head.

Sheep, 3,209,691 head.

a weekly average of 2,124 cattle, and 61,725 sheep. Compared with 1892 this is a decrease of 100 cattle, and an increase of 13,317 sheep per week. These inspections occasionally lead to the detection of stolen stock, as the inspector's duty requires him to compare the brands and marks on the stock with those in the permits and travelling statements accompanying them. These documents are filed in this office for reference, and are frequently referred to by persons inquiring about stock supposed to have been stolen.

Inspectors'

Inspectors' Mileage.

During the past year the staff of forty-eight inspectors travelled over a distance of 182,688 miles while on duty, an average of 3,806 each per annum.

Prosecutions and Convictions obtained.

Under what Act.	No. of Prosecutions.	No. of Convictions.
Diseases in Sheep Acts	86	65
Imported Stock Acts... ..	...	...
Registration of Brands Acts	9	8
Pastures and Stock Protection Acts	163	139
Public Watering-places Act... ..	54	33
Impounding Acts	6	6
Discased Animals and Meat Act	8	8
Total	326	259

The large number of cases under the Pastures and Stock Protection Acts were principally against owners who had failed to make returns of their stock at the proper time. In this respect it has been known for some time past that some owners have been in the habit of making incorrect and insufficient returns, and the inspector at Braidwood has, during the past two years, been successful in obtaining convictions against several persons for so doing, and the energy displayed by him in working up these cases is deserving of special notice.

Altogether, the number of prosecutions were less than those in 1892.

HORSES.

The number of horses in the Colony during the thirty-three years previous to and including 1893 was as follows:—

Year.	No.	Year.	No.	Year.	No.
1861	251,497	1872	304,100	1883	326,964
1862	233,220	1873	328,408	1884	337,172
1863	273,389	1874	334,462	1885	344,697
1864	262,554	1875	357,697	1886	361,668
1865	284,567	1876	366,703	1887	390,609
1866	282,587	1877	323,150	1888	411,368
1867	278,437	1878	336,468	1889	430,777
1868	280,201	1879	360,038	1890	444,163
1869	280,818	1880	395,984	1891	459,755
1870	280,304	1881	398,577	1892	481,416
1871	337,597	1882	323,026	1893	481,399

Showing a decrease of only 17 on the number returned for the previous year. In Appendix A will be found a return of the number of horses in each sheep district of the Colony, also the numbers of cattle and sheep, and total number of pigs.

Breed of Horses.

Under this head the inspectors' returns give the different breeds of horses as follows:—

	Ordinary.	Thoroughbred.	Total.
Draught	127,508	21,010	148,518
Light harness	107,894	16,708	124,602
Saddle	176,545	31,734	208,279

Grand Total 481,399

Horses introduced into the Colony.

From other Australian Colonies.—By sea—190 stud horses and mares, and 760 ordinary horses and mares; total, 950. Overland—42 stud horses, and 8 stud mares, and 4,600 ordinary horses and mares; total, 4,650.

From England and Foreign Countries.—During the year 22 horses were imported into the Colony from England and other countries, and were subjected to the prescribed quarantine of fourteen days before being allowed to go inland. Particulars as to number and breed of these horses are given below.

FOREIGN Horses imported.

Name of Importer.	Address.	Where Imported from.	Cleveland Bays.		Breeds.						Total.
					Thoroughbred.		Arabs.		Trotting.		
			Horses.	Mares.	Horses.	Mares.	Horses.	Mares.	Horses.	Mares.	
Philip Charley ...	Belmont Park, Richmond	England ...	2	4	...	...	...	...	...	...	6
A. A. Dangar.....	Neotsfield, Singleton.....	" .....	...	...	...	1	...	...	...	...	1
E. de Lopez	Sydney	America ...	...	...	...	...	...	1	...	...	1
R. Gordon	Queensland	India .....	...	...	...	...	1	...	...	...	1
J. Inglis and Son	Sydney .....	" .....	...	...	...	1	...	...	...	...	1
George Kiss	"	Batavia ..	...	...	...	1	...	...	...	...	1
Mrs. James White	Kirkham, Narellan	England ..	...	...	4	7	...	...	...	...	11
			2	4	4	9	2	...	1	...	22

Horses fit for sale, and number imported, improvement, &c.

In the several districts of the Colony inspectors' reports show that there are 26,385 draught, 27,222 light harness and 39,430 saddle horses fit for market, while of this number 21,806 are considered suitable for requirements of India and China.

3,362 horses were exported during the year. Forty-six districts report horses as improving in quality, and this is attributed to the introduction of thoroughbred entires, breeding from good mares, and generally paying more attention to the rules of breeding. Fifteen districts report that there is no improvement in the quality of horses, while in three districts they are said to have deteriorated. Unfortunately too much attention is paid in these days to the breeding of galloways for racing purposes, to the detriment of the horse stock generally. A tax on entires is advocated by a large number of breeders on this account, and which I think is desirable.

Disease.

The horses were very free from disease during the year. *Anthrax* was reported in three districts, *Australian Stranghalt* in three districts, and *Strangles*, but only in a mild form, in eighteen districts. Prurigo (mange) is still reported to have shown itself in some of the coast districts, but not to any great extent. When this disease makes its appearance owners should see at once to the cleanliness of the horse's body, and wash with caustic soda and water, $\frac{1}{2}$ oz. to a pint of water, which gives good results. Only two districts report influenza, while glanders is unknown. A few horses have been attacked with blindness, which is being inquired into by this Department. (See Appendix H as to treatment for Influenza.)

The estimated total losses in horses from disease, accidents, and other causes amount to 8,040.

CATTLE.

The returns of cattle in the Colony during the thirty-three years ending 31st December, 1893, stand as follows:—

Year.	No.	Year.	No.	Year.	No.
1861	2,271,923	1872	2,287,660	1883	1,640,753
1862	2,620,383	1873	3,794,327	1884	1,425,130
1863	2,032,522	1874	2,856,699	1885	1,317,315
1864	1,924,119	1875	3,134,086	1886	1,367,844
1865	1,961,905	1876	3,131,013	1887	1,575,487
1866	1,771,809	1877	2,746,385	1888	1,622,907
1867	1,728,427	1878	2,771,563	1889	1,741,592
1868	1,761,411	1879	2,914,210	1890	1,909,009
1869	1,795,904	1880	2,580,040	1891	2,046,347
1870	2,195,096	1881	2,597,348	1892	2,147,074
1871	2,014,888	1882	1,859,935	1893	2,155,500

From the above it will be seen there was an increase of 8,426 cattle during the year 1893, and an increase of 514,747, as against the decennial year 1883.

The number of cattle in each of the Sheep Districts of the Colony will be found in Appendix A.

209,235 head of cattle were introduced from other colonies during the year, and 60,567 exported.

Breeds of Cattle.

	Pure and Stud.	Ordinary.	Total.
Shorthorns	58,524	701,404	759,928
Hereford	31,901	220,687	252,588
Devon	11,844	64,699	76,543
Black-polled	1,535	2,110	3,645
Red-polled	24	.....	24
Ayrshire	5,558	15,319	20,877
Alderneys	2,018	2,130	4,148
Highland	32	2	34
Holstein	117	181	298
Jersey	1,449	1,822	3,271
Buffalo	7	.....	7
Crosses (first crosses)	6,630	1,027,507	1,034,137
Grand Total	.....	.....	2,155,500

The crosses are estimated as follows:—

Shorthorn and Hereford	338,105
Shorthorn and Devon	136,531
Hereford and Devon	62,480
Shorthorn and Black-polled	13,313
Ayrshire and Shorthorn	36,219
Alderney and Shorthorn	81
Jersey and Shorthorn	2,000
Unrecognisable	445,408
Total	1,034,137

Cattle Introduced into the Colony.

FROM OTHER AUSTRALIAN COLONIES.—*By sea*—25 stud bulls, 32 stud cows; total, 57.

Overland—17 stud bulls, 7 stud cows, 209,154 ordinary cattle; total, 209,178.

From England.

FOREIGN Cattle imported.

Names and Addresses of Importers.	Where Imported From.	Breeds.						Total.	
		Shorthorns.		Polled Angus.		Jersey.		Males.	Females.
		Males.	Females.	Males.	Females.	Males.	Females.		
A.A. Company, Warrah	England ...	2	.....	.....	.....	.....	.....	.....	.....
Captain Smith, Newcastle .....	" .....	.....	.....	2	.....	.....	.....	.....	.....
Mrs. James White, Kirkham .....	" .....	.....	.....	.....	.....	2	2	.....	.....
		2	.....	2	.....	2	2	6	2

Increase and Decrease of Cattle.

From thirty-four districts the cattle are reported as increasing, the principal reasons given being good seasons, introduction of large numbers of store cattle from Queensland, and more owners having taken to breeding cattle and stocking up their runs. The remaining districts say the cattle are decreasing through sales, owners not breeding or stocking up and changing for sheep.

The "Cast" of Fat and Store Cattle.

The estimated "cast" of fat cattle to be sent to market during the coming year is 342,734, and store cattle, 299,086. From fourteen districts the fat cattle are principally sent to Victoria; from two districts they are principally sent to South Australia and Tasmania; and the remaining districts supply the markets of Sydney, Maitland, Mudgee, Bathurst, Orange, Goulburn, Tamworth, and Albury. The principal markets for store cattle are Muswellbrook, Maitland, Goulburn, Wagga Wagga, and Wodonga, in Victoria.

How kept.

The number of cattle kept wholly in paddocks is returned as 1,725,093; on open runs, 281,033; and the balance, 149,374, are depastured both ways.

Improvement and Deterioration.

In thirty-nine districts the cattle are said to be improving; in twenty districts they are stationary; and in five districts deteriorating. The principal reasons given for the improvement are—introduction of good stud stock; more attention and care in selection and breeding of stock, more particularly those for dairying purposes; also, in culling and keeping in paddocks. The reason given for deterioration is inattention to breeding, many owners breeding from all sorts without respect to breed or quality, and using the same blood for years.

Their Diseases and Ailments.

Pleuro-pneumonia.—Inspectors' reports show that this disease existed in twenty-four districts, and that the cattle on 150 runs were affected; while the other districts are reported to be free from the disease.

Cumberland Disease.—From seven districts the number of cattle reported to have died from this form of anthrax is 562.

Symptomatic Anthrax or Blackleg is reported to have carried off 923 head in nine districts.

Tuberculosis.—Cattle to the number of 3,370 are reported from thirty districts to have died of cancer and tubercular swellings in the throat.

Red Water.—From two districts 16 deaths are recorded. The disease is prevalent in certain localities in the coast country at particular seasons, more so in spring.

Ophthalmia occasionally assumes an epidemic form, and the numbers attacked are in some cases considerable, causing much temporary inconvenience to stock from blindness. Outbreaks have been reported from four districts.

Poisonous Plants.—From eight districts deaths to the number of 930 are reported through eating supposed poisonous plants.

SHEEP.

The number of sheep in the Colony during the thirty-three years ending 31st December, 1893, stands as follows:—

Year.	No.	Year.	No.	Year	No.
1861	6,119,169	1872	17,873,696	1883	37,915,510
1862	6,558,896	1873	18,990,595	1884	31,660,321
1863	7,169,126	1874	22,797,416	1885	37,820,906
1864	9,082,463	1875	25,353,924	1886	39,169,304
1865	9,650,106	1876	25,269,755	1887	46,965,152
1866	11,644,593	1877	21,521,662	1888	46,503,469
1867	15,066,377	1878	25,479,484	1889	50,100,768
1868	16,000,090	1879	30,062,910	1890	55,986,431
1869	16,848,217	1880	35,398,121	1891	61,831,416
1870	16,218,825	1881	36,591,946	1892	58,080,114
1871	16,766,012	1882	36,114,814	1893	56,980,688

The

The number of sheep in the several Sheep Districts will be found in Appendix A.

A statement has been prepared, and will be found as Appendix B, giving the number of owners in each district with sheep from 1 to 500, 501 to 1,000, 1,001 to 2,000, 2,001 to 5,000, 5,001 to 10,000, 10,001, to 20,000, 20,001 to 50,000, 50,001 to 100,000, 100,001 and upwards, together with the number of sheep respectively owned by each class of owners in the several districts.

Increase and Decrease.

This shows a decrease for the whole Colony of 1,099,426.

The number of sheep imported during the year was 1,017,253, and the number exported 933,012, being an increase in the imports over the exports of 84,241 sheep.

The different Breeds.

Merino.

Combing.

	Rams.	Ewes.	Wethers.	Lambs.	Total.
Pure and stud—Superfine ...	69,113	693,606	378,666	422,529	1,563,914
Ordinary	87,919	2,371,449	1,888,721	1,156,978	5,505,067
					<u>7,068,981</u>
Pure and stud—Medium ...	53,599	1,345,291	753,888	633,720	2,786,498
Ordinary	152,739	7,373,614	5,398,126	3,212,083	16,136,562
					<u>18,923,060</u>
Pure and stud—Strong ...	49,636	1,127,412	822,329	545,102	2,544,479
Ordinary	109,246	4,226,509	3,984,541	2,118,213	10,438,509
					<u>12,982,938</u>
Total, Combing					<u>38,975,029</u>

Clothing.

Pure and stud—Superfine ...	14,061	265,606	195,972	126,608	602,247
Ordinary	25,688	535,264	550,388	221,015	1,332,355
					<u>1,934,602</u>
Pure and stud—Medium ...	28,640	803,031	512,268	350,825	1,694,764
Ordinary	68,623	2,995,166	1,913,151	1,184,276	6,161,216
					<u>7,855,980</u>
Pure and stud—Strong ...	24,030	657,131	516,099	351,726	1,548,986
Ordinary	45,371	1,751,027	1,651,470	781,794	4,229,662
					<u>5,778,648</u>
Total, Clothing					<u>15,569,230</u>

Total number of Merino Sheep 54,544,259

Long-woolled and cross-bred Sheep.

Pure and stud—Lincoln ...	21,384	78,824	60,958	54,600	215,766
Ordinary	23,090	120,071	102,857	108,358	354,376
					<u>570,142</u>
Pure and stud—Leicester ...	5,299	35,753	21,804	24,127	86,983
Ordinary	4,237	48,264	56,236	38,350	147,087
					<u>234,070</u>
Pure and stud—Downs ...	609	3,206	434	1,958	6,207
Ordinary	205	3,960	2,239	1,312	7,716
					<u>13,923</u>
Pure and stud—Romney Marsh	501	254	.....	1,530	2,285
Ordinary	138	5,500	5,400	9,864	20,902
					<u>23,187</u>
Total number, Long-woolled Sheep					841,322

Crosses.

Crosses of the above breeds (long-woolled) with Merino principally.	12,227	454,765	679,728	443,387	1,595,107
Total, Crosses					<u>1,595,107</u>
Grand total					<u>56,980,688</u>

Sexes

Sexes and Classes.									
Rams	...	...	...	...	...	...	...	...	796,355
Ewes	...	...	...	...	...	...	...	...	24,895,703
Wethers	...	...	...	...	...	...	...	...	19,495,275
Lambs	...	...	...	...	...	...	...	...	11,793,355
Total									56,980,688

Sheep introduced and imported into the Colony.

AUSTRALIAN SHEEP INTRODUCED.

Overland from other Colonies.—Stud sheep, 7,415; ordinary, 1,004,504; total, 1,011,919.

By sea from other Colonies.—5,279 stud sheep were introduced from the other Australian Colonies by sea, particulars of those sold at the annual stud sales are given in Appendix C.

The prohibition against the introduction of sheep, as well as all other stock, from Western Australia is still in force.

Foreign sheep imported from England.

Fifty-five stud sheep were imported from England, and passed through quarantine in Sydney before going inland. These were isolated for sixty days, and dressed three times with a mixture of tobacco and sulphur, in terms of the Regulations of 10th January, 1893. The following table gives the names, addresses, &c., of the importers:—

Name of Owner or Importer.	Address.	Breeds Imported.									
		Lincoln.		Border Leicester.		Shropshire.		Southdown.		Total.	
		Rams.	Ewes.	Rams.	Ewes.	Rams.	Ewes.	Rams.	Ewes.	Rams.	Ewes.
T. P. Willsallen and R. G. Higgins	Qurindi	12	...	...	...	...	...	...	...	12	...
H. M. Suttor & Co.	Bathurst	...	...	1	10	...	...	...	...	1	10
O'Neil & Sons	Narromine	2	...	...	...	...	...	...	...	2	...
H. M. Baird	Coonamberrig	...	...	2	10	...	...	...	...	2	10
F. F. Gibson	Tiranna, Goulburn	...	...	...	...	2	10	...	...	2	10
Mrs. James White	Kirkham, Narellan	...	...	...	...	...	...	2	...	2	...
Solomon Wiseman	.....	4	...	...	...	...	...	...	...	4	...
Total		18	...	3	20	2	10	2	...	25	30

The "Cast" of Fat and Store Sheep.

The annual "cast" of fat sheep for the ensuing season is estimated at 5,708,466, and store sheep, 6,656,271.

How Sheep are kept.

Paddocked	...	...	...	...	...	...	55,514,399
Shepherded	...	...	...	...	...	...	697,639
Both ways	...	...	...	...	...	...	768,650
							56,980,688

Condition of the Flocks.

In fifty-one districts the sheep are said to be improving, the principal reasons given being more attention to breeding, paddocking, introduction of high-class rams and ewes, more careful classing and culling, better management, and good seasons.

In ten districts they are said to be stationary, and in three districts they are deteriorating. The reasons given are effects of bad seasons, breeding from inferior ewes, bad management, bad selection of rams, and purchase of stores.

Lambing.

From a return of the autumn, winter, and spring lambings obtained from the Inspector for each Sheep District, the average percentage of lambing for the whole Colony is estimated at 69 per cent, *i.e.*, calculating the number of lambs marked on the number of ewes put to the rams. The autumn lambing was the highest, averaging 70½ per cent., while the spring and winter lambings averaged 67¼ and 63¾ per cent. respectively.

The Clip.

Average per Sheep.

Lambs.—The number of lambs shorn in the grease was 7,482,936; the number washed, 169,698; total lambs shorn, 7,652,634.

Sheep.—The number of sheep shorn in the grease was 45,443,757; hot water and spout-washed, 7,000; creek-washed, 85,169; and scoured, 1,000,549; total sheep shorn, 46,536,475.

The average weights of the clip are estimated as follows:—

	Lambs.		Sheep.	
	lb.	oz.	lb.	oz.
Grease	2	1	5	15
Creek-washed	1	5	3	5
Scoured	...	...	3	5

Total Clip.

The total clip in the Colony for the year 1893, according to the number of sheep, would be:—

45,348,757 sheep shorn in the grease; average clip, 5 lb. 15 oz. per sheep	=	269,258,245 lbs.
81,169 " creek-washed	" 3 " 5 " "	= 282,122 "
1,007,549 " scoured	" 3 " 5 " "	= 3,337,506 "
7,482,936 lambs shorn in the grease	" 2 " 1 " per lamb	= 15,433,556 "
169,698 " washed	" 1 " 5 " "	= 222,729 "
		<u>288,534,158 lbs.</u>

- Showing an increase of 18,160,914 lb. on the previous year's clip.

The estimated total weight of the clip is considerably over that of the previous year, but the number of sheep shorn was less, while the number of lambs was greater than that for 1892. The average clip per fleece for sheep and lambs is also higher, owing to the good seasons, good condition of the sheep, runs not being overstocked, and improved quality of the sheep.

Condition of Clip.

In twenty-seven districts the clip is reported as sound and containing a good supply of yolk; in twenty districts sound, although deficient in yolk; and in remaining districts weak, owing to absence of yolk. On the whole the clip was clean, but in a few districts the value of the wool was affected by grass-seed and burrs.

Exportation of Clip.

The clip grown in the Colony of New South Wales is shipped principally to England, America, France, and Germany, and considerable portions of it is so from the ports of the three neighbouring Colonies, as well as from Sydney and Newcastle. The portions of our clip thus shipped from the other Colonies is often mistaken as the produce of those Colonies, more particularly for that of Victoria and South Australia.

The following is an estimate of the clip sent to Sydney, and also the proportion sent across the Borders and to Melbourne, Adelaide, and Brisbane for the years 1892 and 1893:—

Port of Shipment.	1892.			1893.		
	Greasy.	Washed.	Total.	Greasy.	Washed.	Total.
	lb.	lb.	lb.	lb.	lb.	lb.
Sydney	205,870,638	3,296,462	209,167,100	218,563,673	2,544,409	221,108,082
Melbourne	46,884,104	615,782	47,499,886	53,339,634	499,692	53,838,326
Adelaide	12,756,674	683,240	13,439,914	12,456,645	799,256	13,255,901
Brisbane	266,344	.....	266,344	331,849	.....	331,849
	<u>265,777,760</u>	<u>4,595,484</u>	<u>270,373,244</u>	<u>284,691,801</u>	<u>3,842,357</u>	<u>288,534,158</u>

This shows an increase in the quantity of wool shipped during the year from the Ports of Sydney and Newcastle of 11,940,982 lb., as compared with that shipped in 1892.

Classing of Clip.

In thirty-seven districts the clip is reported as having been well classed. In the other districts it is not considered to have been so, the reasons given being, owners consider it does not pay, that prices obtained are no better, also want of convenience, sheds not large enough to warrant expense, and the difficulty of obtaining competent wool-sorters.

Wool-presses.

A great number of different kinds of presses are used; those most in favour are Ferrier's Patent and Williams' and Robinson's; rack screw and pinion presses are used. There is still room for improvement in the mode of pressing, especially by the owners of small clips.

Woolpacks.

The woolpacks used are mostly Calcutta and Dundee, of various sizes, from 4 ft. 6 in. x 2 ft. 2 in. to 5 ft. 3 in., and the weight from 10 to 12 lb.
On sixty holdings the wool is dumped before leaving.

Sheep-brands and Marks.

During the year 1893 the number of Sheep Brands and Ear-marks recorded, transferred, and cancelled were as follows:—

Recorded.										
Fire Brands	223
Tar do	1,699
Ear-marks	1,008
Total	<u>2,930</u>
Transfers.										
Fire Brands	59
Tar do	159
Ear-marks	131
Total	<u>349</u>

Cancelled.

Cancelled.

Fire Brands	301
Tar do	773
Ear-marks	425
Total	1,502

The large increase in the number of cancellations arises from the revision which has been carried out of the Sheep Brands and Marks Directory, and the cancellation of all Brands and Marks of owners who have died, or who have parted with the holdings for which the Brands and Marks were recorded. This work has now been completed and will it is believed render the identification of ownership of sheep a much easier matter than hitherto.

Ear-marking and Tattoo-marking.

In all districts the system of ear-marking sheep is now generally carried out, and the system of tattoo-marking is mostly used by owners of stud-sheep, not as yet to any great extent in the case of ordinary flock sheep, but where tried it has been found to be a good preventive to sheep-stealing.

DISEASES IN SHEEP.

Scab.—The flocks in this Colony and in the Colonies of Queensland, Victoria, South Australia, New Zealand, and Tasmania are free from scab. It exists, but to a very slight extent, in Western Australia, but it is hoped that Colony will soon be declared clean. The importation of sheep from Western Australia into this Colony is still prohibited, as well as all other stock.

Anthrax.—There have been no serious outbreaks of anthrax during the past year. Several owners have had their sheep vaccinated with M. Pasteur's "Vaccinc for Anthrax," with satisfactory results, as shown below.

STATEMENT showing the result of Vaccinations for Anthrax during year 1893.

Lots Vaccinated.	Number of Sheep Vaccinated.	Were any Sheep dying when they were vaccinated?	Number of vaccinations, 1st, 2nd, and 3rd.	Number of deaths after 1st vaccination.	Number of deaths after 2nd vaccination.	Number of deaths after 3rd vaccination.	State of Weather during Vaccination.	Remarks.
1	8,000	Yes	2nd	100	.....	.....	Fair	3,000 of these vaccinated in 1892.
2	9,400	No	1st & 2nd	.....	.....	.....	Cool	
3	7,000	" .....	"	.....	.....	.....	" .....
4	1,600	" .....	"	.....	.....	.....	" .....
5	2,000	" .....	"	.....	.....	.....	" .....
6	3,500	" .....	"	.....	.....	.....	" .....
7	2,500	" .....	"	.....	.....	.....	Mild	100 " "
8	12,000	" .....	"	.....	.....	.....	Warm	6,400 " "
9	40,900	Yes .....	"	.....	.....	.....	Fine	
10	3,000	" .....	"	.....	.....	.....	" .....
11	3,000	" .....	"	.....	.....	.....	" .....
12	600	"	"	25	25	.....	" .....
13	24,000	"	"	300	.....	.....	" .....
14	1,600	" .....	"	.....	.....	.....	" .....
15	100	" .....	"	.....	.....	.....	" .....
16	180	" .....	"	.....	.....	.....	" .....
	119,380			425	25	.....	

Foot-rot.—In thirty-eight districts the sheep have been more or less affected with foot-rot during the year, the reasons given being continued wet seasons, running on low rich pasture, unsound country, and diseased land. The principal remedies tried, with careful paring, were butyr of antimony and bluestone, bluestone and kerosene, arsenic, arsenic and lime, blue vitriol, sulphate of copper, carbolic acid, and nitric acid—with satisfactory results. Of these, bluestone and butyr of antimony have been most effective for hand-dressing, and arsenic and bluestone in troughs. For the dressings recommended by the Government Veterinarian, see Appendix G.

Fluke.—In twenty-nine districts the sheep were affected with fluke, through wet seasons, depasturing on low swampy ground, unsound country, and rank pasture. The preventives used were salt, tar, and turps, sulphate of iron, and Liverpool salt and sulphur, with good results; but the best course, where it can be followed, is to remove the sheep to salt-bush country, and, where that cannot be done, to keep the country free from surface-water by means of drains run with a plough and helped with a spade, and burn the grass when opportunity offers, besides giving the lieks mentioned.

Parasitic Worms.—In thirty-two districts the sheep are reported as having been infested with worms to an extent of (say) 10½ per cent. In seventeen districts the sheep are reported as having been infested with stomach, lung, and tape worms; in seven districts with stomach and tape worms; in six districts with stomach worms; and in one district with lung-worms. The prevalence of the worms is attributable to the frequent summer rains following upon a wet winter, which lessened the nutrition in the pasture and lowered the stamina of the sheep, while at the same time the moisture and heat tended to a large development and increase of the worms. A brief statement of the remedies used, and the result, will be found in Appendix F.

Dr. Cobb, Vegetable Pathologist for the Department, is still engaged upon the study of the life history of the worms which cause the chief losses in our flocks, with the view to find a remedy for them, or at least to ascertain when, where, and how they can best be attacked.

PIGS.

The estimated number of pigs in the Colony at 31st December, 1893, is 240,000, being a decrease of 9,512, as compared with the returns for the previous year.

From the other colonies 183 have been introduced by sea.

The prohibition which has existed for some years against the introduction of pigs from foreign countries has now been removed, and they are admitted on undergoing a quarantine of sixty days.

The number of pigs exported from port of Sydney was 633.

Four ships' pigs were quarantined during stay of vessels in port.

Diseases in Pigs.

The pigs are occasionally found to be affected with tuberculosis, cancer, and contagious catarrhal pneumonia.

According to late reports swine fever still exists in Great Britain, and there have been considerable losses, although vigorous repressive measures are being taken.

DOGS.

Thirty-two dogs were imported last year from England and other places outside the Australasian Colonies, and were subjected to the prescribed quarantine of six months before being admitted into the Colony, while 422 colonial dogs were introduced at the Port of Sydney from the other colonies.

One hundred and eighty-six dogs were inspected prior to exportation, as also forty-six "ships' dogs."

All "ships' dogs," and other stock on board foreign vessels for the use of the passengers and crew, are now quarantined during the stay of the vessel to which they belong in port, whether in Sydney or at Newcastle.

Diseases in Dogs.

Rabies is still prevalent in England and on the Continent. It is also reported from the Mauritius, India, and the Straits Settlement. The proximity of the Straits Settlement to these colonies shows the absolute necessity for every possible precaution being taken to prevent the introduction of hydrophobia into this and the other colonies, and a continuance of the present term of quarantine.

TRAVELLING STOCK (*Reserves, Roads, Tanks, Wells, &c.*).*Trespass on Reserves.*

In thirty-six districts the travelling stock and camping reserves are reported as having been trespassed upon. In twenty-eight districts they are reported as being free from trespass.

Marking of Travelling Stock and Camping Reserves.

Good progress has been made with regard to the marking of travelling stock and camping reserves, there being at present about 60 miles surveyed and about 140 miles in course of survey. The routes marked are:—

1. From Boggabilla, *via* Yetman and Warialda, to Cobbadah, with the continuation on to Breeza in course of survey.
2. From Moree, *via* Millie, to Narrabri, with the continuation *via* Boggabri and Breeza to the Liverpool Range in course of survey, and a further continuation from there to the Bulga Mountains surveyed.
3. From Walgett, *via* Coonamble, Mendooran to Uarbry.
4. From Coolah, *via* Uarbry, to Kylstone.
5. That portion passing through Terry-hie-hie holding.

With a view of making these surveys of practical benefit to drovers, stock-owners, and others, lithographs, showing lengths of between 20 and 30 miles, are being prepared containing all information available that will enable the roads to be easily followed. The lithographs will be procurable from the local Stock Inspectors at a cost of 2s. each.

Grass on Reserves and Driftways.

The Inspectors report that in all the districts in good seasons there is sufficient grass on all the reserves and driftways to enable fat stock to reach market in good condition. In ten districts there is not sufficient in ordinary seasons.

From nine districts it is reported that sheep to the number of 292,114 have passed through during the year in search of grass and water. From two districts the number of loafing sheep is given at 50,700.

New Stock Roads required.

In eleven districts new roads are required for travelling stock, and to obtain these action has been already taken in seven districts.

New Stock Reserves required.

In eleven districts new reserves and alterations of existing ones for travelling stock are required. In fifty-three districts there are sufficient reserves; but in a great many cases the reserves are leased under annual lease, and are, therefore, kept very bare of feed.

New Wells, Tanks, or Dams.

In eighteen districts the inspectors report that new wells, tanks, or dams should be constructed by the Government at places which they indicate.

REGISTRATION OF HORSE AND CATTLE BRANDS.

Brands registered.

The number of horse and cattle brands registered up to 31st December, 1893, was 71,758. The number of brands registered during the year 1893 was—Horse brands (alone), 412; cattle brands (alone), 482; and horse and cattle brands, 1,263; making a total of 2,157.

This shows a decrease of 419 in the total number of brands registered during the year as compared with 1892. There is an increase in the number of brands transferred and cancelled.

Brands

Brands transferred.

The brands recorded during the year 1893 as transferred were—Horse brands, 34; cattle brands, 48; horse and cattle brands, 68; total, 150, being an increase of 17 on previous year.

Brands cancelled.

The brands cancelled (horse and cattle) in 1893 were 193.

Addresses changed.

The number of addresses of owners changed in 1893 was 90.

Compliance with the Act.

In all the districts the provisions relating to registration and the other requirements of the Act are reported as being fairly carried out.

Benefits of the Act.

The inspectors, in alluding to the benefits of the Act, report that it prevents duffing, stock-stealing, facilitates identification, assists in recovering lost stock, and otherwise is a great convenience and protection to stock-owners.

POUNDS.

Number and Inspection.

There are 435 pounds in the Colony, some of which are at present closed for want of poundkeepers. The whole of the pounds are inspected periodically by the various inspectors of stock.

State of Yards.

Nineteen of the pound-yards are reported to be old; some require renewing, being unfit for the safe custody of stock; while others need repairs. The remainder are said to be in a fair and good condition.

Keeping and Depasturing Pound Stock.

The provision made for the proper sustenance of impounded stock, according to the reports received, is satisfactory. As a rule, poundkeepers have now paddocks for the stock.

Management of Pounds.

The poundkeepers are reported to be performing their duties, upon the whole, in a satisfactory manner, and the appointment of inspectors of stock as inspectors of pounds has had a very beneficial effect.

NOXIOUS ANIMALS.

The Districts in which the Pastures and Stock Protection Act is in force.

The Act has been brought into operation in all the districts, and during the year work has been done to the extent shown in Appendices D and E.

Receipts and Expenditure under the Act.

The amount of assessment paid by stock-owners in 1893 was £39,116 15s. 7d.; and the amount expended £46,688 5s. 8d., the difference being accounted for by the subsidy granted by the Government to the Boards, and large amount to credit of some of the Boards at commencement of the year. Six districts are reported to be in debt to the amount of £978.

In six districts full rates were levied, in forty-eight districts less than full rates, while in ten districts no rates whatever were levied.

During the year the bonuses paid by the Boards for scalps ranged as follows:—For kangaroos, from 1d. to 1s.; kangaroo rats, 1d. to 6d.; wallaroo, 3d.; wallaby, from 1d. to 6d.; paddymelon, from 1d. to 6d.; bandicoot, 2d. and 3d.; hares, from 1d. to 6d.; native dogs, from 10s. to 60s.; pups, 2s. 6d. to 10s.; wombats, 2s. 6d.; opossums, 2d.; wild pigs, 6d. and 1s.; eagle-hawks, 6d. to 10s.; emus, 3d. to 6d.; and crows, 2d. to 6d.

Increase and decrease.

Kangaroos are reported to be increasing in sixteen districts, wallabies in twenty-one districts, native dogs in thirteen districts, hares in twenty-one districts, and wild pigs in seven districts. In twenty-one districts kangaroos are reported to be decreasing, wallabies in sixteen districts, and native dogs in seventeen districts, hares in eight districts, and wild pigs in four districts.

Number destroyed.

The number of kangaroos destroyed during the past year was 49,254; of kangaroo rats, 234,528; of wallabies, 743,017; of wallaroo, 445; of wombats, 46; of bandicoots, 1,857; of paddymelons, 49,028; of wild pigs, 8,802; of hares, 734,212; of native dogs, 14,148; of opossums, 3,635; of eagle-hawks, 6,784; of crows, 44,974; and of emus, 899.

Steps taken for their destruction.

In the majority of the districts hunting with dogs, drives, shooting, trapping, and poisoned water have been adopted with satisfactory results. In fifty districts poison has been used, mostly for dogs, with fair to best results, and from four districts it is reported that the results have not been satisfactory, the dogs being too cunning to take baits.

Amendments suggested in the Act.

Owners are desirous that the Amended Stock and Pastures Bill speedily become law; and they suggest that all owners of stock, irrespective of number, should be liable to an assessment, as also owners of 5 acres of land and over; that farmers and owners of orchards and vineyards should pay to the fund; that hares be included in the list of noxious animals; that the Boards be empowered to cope with the rabbit

rabbit nuisance; that the Government should grant larger subsidy; that uniform rates be levied; that the rate of bonus be the same throughout the Colony; that all returns of stock be made on the same day; that adjoining Boards assimilate bonuses; and that the provisions of the Act *re* defaulting Boards be strictly enforced.

Losses from Tame and Native Dogs.

The losses in stock for the past year from the ravages of native dogs are estimated at 109,265 sheep, valued at £23,937, and from tame dogs, 54,327 sheep, valued at £12,700, making the loss from tame and native dogs together, £36,637.

COMMONS.

Number and extent.

The number of Commons in the Colony is 311, with an average of about 4,160 acres each.

Number of Commoners, Stock, &c.

The average number of Commoners to each Common is estimated at 86, and the average number of stock kept on each Common at 186.

In two districts some of the Commons are reported to be used for other purposes than that of grazing Commoners' stock. Many of the Commons are unfenced, consequently are trespassed upon by travelling stock, &c.

MISCELLANEOUS.

Artificial Grasses.

In twenty-five districts artificial grasses have been sown for pasture during the year to a small extent, in nine districts to a large extent, and in remaining districts none; the most successful being lucerne, prairie, and rye.

Number and Division of Runs.

The number open or unenclosed runs in the Colony is 7,474; the number enclosed is 39,053; the number partially sub-divided is 14,724; and the number properly sub-divided is 24,329.

Improvements, Fencing, Dams, Tanks, and Wells.

The number of miles of fencing throughout the Colony is estimated as follows:—1,567,948 miles without wire netting, at an average cost of (say) £38 8s. per mile, amounting to £60,219,450, and 61,914 miles with wire netting, average cost at (say) £69 16s. 4d. per mile, amounting to (say) £4,322,625.

The number of dams used for stock purposes is estimated at 59,846, at an average cost of (say) £77 17s. 6d.; number of tanks, 34,839, average cost of each, £198 6s.; and the number of wells used is estimated at 3,992, at an average cost of £203 2s. each.

Cost of fencing, £64,542,075; cost of dams, £4,657,750; cost of tanks, £6,907,852; cost of wells, £810,698; making a total of £76,918,375, as representing the amount expended by way of improvements, &c.

Plants and Weeds.

Prevalence.

In fourteen districts *trefoil burr* grows to a very large extent; in eleven districts, to a considerable extent; in nineteen districts, to a slight extent; and in twenty districts there is none reported.

In thirty districts *variegated thistle* is reported to a slight extent; in ten, to a considerable extent; in ten, to a very large extent; and fourteen districts are reported as free from it.

In twenty-five districts *black thistle* is reported to slight extent; in eleven, to a considerable extent; in thirteen, to a very large extent; and fifteen districts are reported to be free from it.

In seven districts the land is reported as being infested to a considerable extent with *Bathurst burr*; in thirteen districts, to a very large extent; in thirty-four districts, to a slight extent; and in ten districts the land is not infested.

In twenty-six districts, other noxious weeds grow to a slight extent; in thirteen districts, to a considerable extent; in sixteen districts, to a very large extent; and in nine districts there is none reported.

Legislation for Noxious Weeds.

Legislation is urgently required for dealing with noxious weeds and plants, more especially the *Bathurst burr*, the prevalence of which is inflicting very serious loss on travelling stock.

Cost of clearing Commons, Reserves, &c., of Weeds.

The cost of clearing the Commons of noxious weeds throughout the Colony is estimated by inspectors at £74,504; the police paddocks, £5,011; the travelling stock reserves and droving roads at £206,497; amounting in all to (say) £286,012.

Experiments in growing Roots and Pasture under Systematic Rotation and fattening Cross-bred Sheep.

Mr. Bruce, while visiting New Zealand with a view of inquiring into the stock-breeding and fattening industry, was much impressed with their system of rotation of crops for fattening purposes, and, being strongly of the opinion that the system could be worked with great advantage in this Colony, obtained permission from the Hon. the Minister to experiment on a small scale.

With that view he has secured the co-operation of three practical farmers well qualified to carry out the experiments, who have agreed to give it a trial for five years.

The districts selected are New England, Orange, and Monaro, which are similar in climate, soil, and rainfall to New Zealand; and, being so, Mr. Bruce holds that it only requires the adoption of the New Zealand system to make it as successful in this Colony as in that.

The area set aside on each of the farms selected is twenty acres, which has been thoroughly worked and sown with turnip seed of three different varieties, viz., Drummond's Improved Purple Top, Sutton's Champion Top, and Monarch Purple Top. This seed has been sown in drills in the proportion of 1 lb. per acre, with 2 cwt. of bone-dust and superphosphate mixed in equal quantities.

After

After feeding this crop off, which will be done by penning the sheep in lots on the land so as to compel them to eat the roots up clean as they go, the land will be broken up and sown with a grass and clover crop, either with or without a small quantity of rape, or an oat or barley crop. The third, fourth, and fifth years the land will remain at pasture. The number and breed of sheep to be depastured will be decided by the Minister, and a record kept of all returns therefrom.

The Stock and Pastures Bill.

It is hoped that the state of the Government business will soon admit of this measure, which is so urgently required, being passed to enable inspectors to deal with diseased stock, which are now, through the want of the legislation so frequently asked for, allowed to travel throughout the Colony, spreading the infection as they go. This is especially the case with Queensland cattle infected with pleuropneumonia, which frequently introduce the disease in our herds.

APPENDIX A.
RETURN of Stock in the several Sheep Districts.

Districts.	Year 1892.					Year 1893.				
	Acres.	Horses.	Cattle.	Sheep.	Pigs.	Acres.	Horses.	Cattle.	Sheep.	Pigs.
Albury	879,637	7,093	16,436	856,519	.....	677,028	7,102	15,513	801,672	.....
Armidale	3,055,213	12,067	80,435	1,785,573	.....	3,136,922	12,153	87,997	1,601,620	.....
Balmoral	3,202,995	1,873	2,701	467,263	.....	3,187,741	2,144	4,142	456,873	.....
Bathurst	1,690,835	16,019	48,078	750,625	.....	1,561,106	15,825	48,998	653,166	.....
Berrima	253,682	3,881	27,218	50,410	.....	266,384	4,085	28,643	40,386	.....
Bombala	559,683	3,817	20,775	447,261	.....	563,755	3,764	22,641	443,407	.....
Bourke	8,731,088	7,762	17,312	2,730,774	.....	9,017,585	8,132	15,630	2,493,362	.....
Braidwood	863,211	4,738	42,759	88,878	.....	396,442	6,212	45,604	85,620	.....
Browarrina	3,793,183	4,465	19,615	1,443,895	.....	3,510,127	4,709	18,577	1,317,859	.....
Broulee	230,466	3,040	29,357	4,894	.....	237,108	3,166	31,651	5,112	.....
Cannonbar	3,297,247	4,855	18,746	1,425,521	.....	3,482,516	5,653	22,042	1,447,576	.....
Carcoar	1,026,268½	8,229	26,875	916,227	.....	1,170,021½	8,389	25,926	852,935	.....
Casino	1,460,221	9,381	130,922	1,923	.....	1,445,134½	9,345	130,261	1,135	.....
Cobar	6,451,818	2,627	5,169	1,078,459	.....	5,441,670	2,882	5,341	1,255,075	.....
Condobolin	5,263,780	5,596	12,631	1,920,043	.....	5,044,404	5,546	11,434	1,829,318	.....
Cooma	1,569,468	8,294	43,140	1,019,398	.....	1,699,433	8,849	46,327	951,883	.....
Coonabarabran	2,511,440	5,147	13,540	1,275,812	.....	2,454,055	5,495	15,140	1,220,084	.....
Coonamble	2,723,708	6,070	16,005	1,837,803	.....	2,718,692½	6,934	16,989	1,829,205	.....
Oerowa	1,126,450	4,531	6,950	1,042,623	.....	1,129,231½	4,789	7,982	987,667	.....
Denilquin	2,504,808	6,228	16,448	1,600,994	.....	2,506,100½	6,403	16,262	1,453,565	.....
Denmin	315,043	4,305	35,058	50,800	.....	314,238	4,121	33,811	40,693	.....
Dubbo	3,513,696	12,275	34,331	2,055,330	.....	3,688,344	12,499	33,116	1,977,458	.....
Eden	384,981	4,217	52,268	7,283	.....	447,846	4,573	63,306	5,010	.....
Forbes	2,731,503½	10,955	34,073	2,098,305	.....	2,786,049½	11,196	34,434	2,080,255	.....
Glen Innes	2,092,435½	13,787	136,673	815,709	.....	2,070,647	14,078	109,134	734,131	.....
Goulburn	923,485	9,050	48,832	418,980	.....	923,354	9,238	54,366	357,029	.....
Grafton	721,277	18,474	77,032	9,516	.....	800,484	18,198	76,648	5,239	.....
Gundagai	1,694,706	12,172	61,073	1,233,941	.....	1,402,056	9,785	48,934	1,067,846	.....
Hay	4,955,198	8,263	10,090	1,900,058	.....	4,963,337	6,564	9,755	1,756,567	.....
Hillston	3,749,499	2,836	4,184	801,705	.....	3,835,528	3,021	5,728	862,019	.....
Hume	1,301,174	5,861	25,533	666,195	.....	1,294,720	5,776	24,320	624,759	.....
Ivanhoe	5,977,125	2,147	2,401	861,865	.....	5,651,658	2,103	2,138	934,230	.....
Kiama	275,551	8,006	62,354	2,195	.....	269,555	7,987	61,240	2,853	.....
Matfield	486,910	12,463	58,888	6,482	.....	481,288	11,294	67,514	3,415	.....
Menindie	9,546,815	4,159	4,917	1,019,652	.....	9,711,542	4,295	7,747	1,166,601	.....
Merriwa	718,554½	4,283	14,830	564,944	.....	733,915	4,568	17,098	554,211	.....
Milparinka	7,357,424	2,152	7,912	693,347	.....	6,577,781	2,200	7,160	851,486	.....
Molong	1,544,294	11,008	24,555	1,262,468	.....	1,661,163½	11,599	25,339	1,282,521	.....
Moree	3,143,012	7,497	67,495	1,463,300	.....	3,217,533	9,010	72,908	1,481,867	.....
Moulamein	2,109,464	1,549	5,838	836,674	.....	2,092,214	1,605	6,133	810,328	.....
Mudgee	1,507,271	10,922	42,074	721,180	.....	1,544,254	10,899	45,184	732,301	.....
Murrumbidgee	861,354	7,798	38,771	594,694	.....	881,197	8,143	35,111	566,192	.....
Narrandera	2,712,051	4,642	14,420	1,518,942	.....	2,745,800	4,887	14,816	1,434,866	.....
Narrabri	1,709,407	6,696	14,448	806,340	.....	1,829,000½	5,931	17,832	809,249	.....
Pietermaritzburg	247,631	4,824	33,185	7,126	.....	230,852	4,594	31,354	3,317	.....
Pilliga	1,556,800	2,733	18,096	607,861	.....	1,579,810½	3,238	20,194	639,548	.....
Port Macquarie	516,043	10,384	49,047	1,218	.....	514,071	8,556	46,765	1,136	.....
Port Stephens	614,114	7,299	52,656	1,834	.....	583,766	6,862	52,300	1,426	.....
Queanbeyan	1,136,264	4,677	26,665	615,260	.....	819,120	4,642	28,143	565,274	.....
Singleton	499,776	7,531	49,258	91,898	.....	481,063	7,245	51,373	72,491	.....
Sydney	210,000	22,683	20,490	7,767	.....	210,540	21,021	20,241	6,972	.....
Tamworth	4,182,233	23,197	99,559	2,883,541	.....	4,222,603	24,118	98,713	3,004,065	.....
Tenterfield	1,608,041½	7,373	78,774	162,984	.....	1,418,834	7,392	78,665	178,143	.....
Tweed-Lismore	824,692	8,116	34,623	262	.....	1,265,917	7,609	33,136	565	.....
Urana	1,403,608	2,998	5,608	1,185,740	.....	1,418,209½	2,973	5,401	1,111,760	.....
Wagga Wagga	2,743,208	14,465	35,668	2,181,706	.....	2,836,949	14,074	35,374	2,012,070	.....
Walgett	4,733,193½	6,465	20,141	2,270,811	.....	5,024,047	7,496	16,971	2,324,403	.....
Wanamingo	5,817,330	2,300	2,447	807,381	.....	4,521,312	2,174	2,415	897,869	.....
Warialda	3,114,425	11,643	61,769	1,479,117	.....	3,124,523	12,487	66,869	1,502,084	.....
Wentworth	6,810,549	2,135	2,619	529,216	.....	6,538,538	2,090	2,856	612,304	.....
Wilcannia	9,992,694	5,068	7,563	1,287,053	.....	9,993,140	5,155	7,911	1,570,959	.....
Windsor	203,537	8,975	19,720	5,060	.....	188,140	7,774	19,523	2,469	.....
Yaas	852,147	6,020	19,334	607,881	.....	781,678	5,682	21,102	558,897	.....
Young	2,042,659½	11,290	36,595	2,188,595	.....	2,213,019	12,020	40,237	2,051,840	.....
Total	159,439,327½	481,416	2,147,074	58,080,114	240,512	157,746,047	481,399	2,155,500	56,980,688	*240,000

* As all the returns for pigs are not to hand, the number given here is estimated.

APPENDIX B.
 NUMBER of Owners of Different Classes in the several Sheep Districts and the Sheep they respectively own.
 CLASSES.

District.	1 to 500 Sheep.		501 to 1,000 Sheep.		1,001 to 2,000 Sheep.		2,001 to 5,000 Sheep.		5,001 to 10,000 Sheep.		10,001 to 20,000 Sheep.		20,001 to 50,000 Sheep.		50,001 to 100,000 Sheep.		100,001 and over.	
	Number of Owners.	Number of Sheep.	Number of Owners.	Number of Sheep.	Number of Owners.	Number of Sheep.	Number of Owners.	Number of Sheep.	Number of Owners.	Number of Sheep.	Number of Owners.	Number of Sheep.	Number of Owners.	Number of Sheep.	Number of Owners.	Number of Sheep.	Number of Owners.	Number of Sheep.
Albury	158	34,912	58	43,883	34	52,873	28	91,249	7	54,459	5	68,102	8	272,594	3	183,600	...	...
Armidale	223	60,415	158	123,156	124	186,345	87	272,899	23	158,272	18	154,011	16	437,222	2	109,000	...	...
B. Irnald	20	2,794	...	...	3	4,882	8	24,832	7	47,096	3	39,688	6	196,586	2	140,995	...	...
Bathurst	338	69,473	80	61,410	70	90,314	36	118,792	14	93,749	7	88,342	3	77,155	1	51,931	...	...
Berrima	71	6,423	7	5,732	4	5,792	4	12,835	1	9,554	...	...	...	...	...	...	...	...
Bombala	90	17,151	42	34,245	31	43,808	18	53,564	9	69,354	5	84,465	5	140,820	...	...	...	...
Bourke	17	1,725	6	4,542	11	15,957	31	110,955	23	163,780	14	203,606	18	510,219	13	950,201	1	537,343
Braidwood	133	15,667	14	10,298	9	14,336	6	17,669	2	12,150	1	14,500	...	...	...	...	...	...
Browarrina	5	1,751	4	3,577	9	14,284	27	99,901	27	214,178	11	143,994	7	210,870	9	624,304	...	...
Broulee	51	2,880	3	2,232	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cannonbar	43	7,587	20	15,927	24	38,752	38	116,632	14	105,991	14	212,012	14	457,185	2	123,793	3	369,637
Carcoar	229	46,264	82	63,161	67	163,060	42	131,156	16	113,520	10	128,113	5	143,118	2	121,543	...	...
Casino	14	1,135	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cobar	11	666	1	900	4	6,676	9	31,954	7	45,057	18	267,425	14	434,892	5	333,037	1	135,268
Condobolin	72	13,627	41	32,173	63	91,732	54	178,155	26	189,474	11	154,955	22	716,087	5	350,950	1	101,965
Cooma	148	31,551	104	66,366	72	111,259	44	138,569	24	172,235	17	233,173	7	193,697	...	...	...	...
Coonabarabran	77	16,442	39	31,102	37	58,011	34	103,636	19	135,685	9	137,877	10	340,079	5	396,722	...	...
Coonamble	34	5,527	22	18,942	45	69,299	59	190,459	24	168,103	25	337,011	15	460,592	1	51,671	4	527,611
Corowa	91	18,147	40	30,979	48	52,131	36	108,642	5	35,421	3	43,956	13	335,322	4	313,069	...	...
Deniliquin	117	18,339	38	26,900	29	44,344	26	81,663	9	66,931	4	59,800	17	542,478	4	366,201	2	216,908
Denman	37	6,418	13	9,044	6	8,041	4	10,952	1	5,238	...	...	...	...	...	...	...	...
Dubbo	212	50,790	50	72,133	89	134,293	72	218,816	41	309,612	22	279,323	6	186,859	6	405,737	3	319,895
Eden	63	3,601	2	1,409	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Forbes	210	36,539	87	65,877	80	120,357	60	214,031	39	252,663	28	394,959	21	657,176	2	125,774	1	212,479
Glen Innes	135	26,789	70	51,416	54	76,136	34	115,935	12	69,640	4	58,093	11	316,122	...	...	...	...
Goulburn	351	52,137	51	37,264	34	51,716	26	84,601	7	48,856	6	83,425	...	...	...	...	...	...
Grafton	50	1,911	1	718	...	...	1	2,610	...	...	...	...	...	...	...	...	...	...
Gundagai	157	31,686	58	47,922	63	108,476	52	173,083	23	171,448	18	260,553	7	217,808	1	56,810	...	...
Hay	51	9,919	56	44,881	26	56,859	29	91,499	13	49,925	6	81,684	19	607,779	8	481,809	2	292,212
Hilston	30	3,090	14	11,019	9	12,567	21	72,307	8	56,665	3	47,816	10	299,440	5	358,915	...	...
Hume	46	10,125	12	9,204	13	19,886	11	44,164	19	123,23	7	101,905	9	239,602	1	71,850	...	...
Ivanhoe	4	770	...	...	6	16,740	12	41,169	5	36,166	8	123,869	7	250,762	6	351,424	1	119,400
Kiama	109	2,353	...	...	1	1,200	...	...	...	...	...	...	...	...	...	...	...	...
Maitland	79	2,215	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Manildra	37	4,344	7	4,810	16	25,005	6	17,472	2	13,343	2	23,380	9	352,960	2	157,170	5	567,677
Merrima	44	11,875	32	23,577	30	48,023	19	59,526	7	47,734	1	13,053	4	143,603	1	86,015	1	120,800
Milparinka	3	230	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Molong	285	64,190	117	89,511	104	143,150	66	197,938	15	116,734	22	313,400	13	358,598	...	...	...	...
Moree	50	7,842	16	13,301	35	56,824	35	118,245	23	149,904	12	175,479	11	365,936	4	226,010	2	368,276
Moulamein	29	8,431	22	16,874	14	21,605	9	23,298	1	6,070	1	18,844	13	478,552	2	130,191	1	106,463
Mudgee	246	52,523	107	78,954	70	104,776	38	124,564	16	103,450	7	97,252	7	170,582	...	...	...	...
Murrumbidgee	66	17,581	50	37,681	59	86,720	28	86,007	10	72,871	6	79,336	3	100,301	1	85,689	...	...

APPENDIX B—continued.

District.	1 to 500 Sheep.		501 to 1,000 Sheep.		1,001 to 2,000 Sheep.		2,001 to 5,000 Sheep.		5,001 to 10,000 Sheep.		10,001 to 20,000 Sheep.		20,001 to 50,000 Sheep.		50,001 to 100,000 Sheep.		100,001 and over.	
	Number of Owners.	Number of Sheep.	Number of Owners.	Number of Sheep.	Number of Owners.	Number of Sheep.	Number of Owners.	Number of Sheep.	Number of Owners.	Number of Sheep.	Number of Owners.	Number of Sheep.	Number of Owners.	Number of Sheep.	Number of Owners.	Number of Sheep.	Number of Owners.	Number of Sheep.
Narrandera	85	15,580	20	16,194	25	41,090	39	133,715	11	78,363	8	105,089	10	357,023	5	324,268	3	363,544
Narrabri	62	8,052	27	19,151	22	33,935	16	55,032	9	57,380	5	62,840	8	231,361	2	125,852	2	215,646
Pictou	35	2,387	1	930	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Pilliga	22	4,518	10	7,798	27	44,183	15	49,823	16	103,454	3	35,244	8	289,140	2	105,388	...	...
Port Macquarie	40	1,136	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Port Stephens	62	1,426	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Queanbeyan	127	28,994	58	44,220	37	59,626	17	51,012	8	49,932	8	109,194	7	222,287	...	...	...	...
Singleton	100	8,233	10	7,688	3	4,053	4	10,627	1	17,000	1	24,890	...	...	...	...	...	...
Sydney	165	3,672	2	1,600	1	1,700	...	...	...	...	...	...	...	...	...	...	...	...
Tamworth	241	49,246	136	103,793	140	211,528	97	321,255	39	280,690	25	344,188	21	587,782	6	422,687	4	682,896
Tenterfield	60	13,991	31	23,104	10	12,887	2	4,856	1	8,000	1	15,442	4	99,863	...	...	...	...
Tweed—Lismore	9	565	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Urana	19	3,736	14	12,145	23	36,774	25	85,022	9	57,967	7	93,814	7	213,769	3	208,563	2	399,970
Wagga Wagga	312	57,367	109	86,911	85	129,595	81	260,943	25	163,846	18	273,710	21	684,264	5	350,434	...	...
Walgett	28	2,092	12	9,733	29	46,329	37	127,797	29	210,483	17	272,576	14	460,360	10	786,870	3	408,163
Wanaaring	1	100	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Warrilda	92	16,569	25	19,600	51	76,976	37	113,794	14	97,124	9	123,062	10	309,944	5	378,733	3	366,282
Wentworth	33	8,411	16	11,918	11	17,612	13	33,383	2	14,876	1	11,062	6	181,058	4	328,984	...	...
Wilcannia	17	2,188	3	2,121	2	2,744	4	13,139	2	16,756	1	10,452	5	197,379	9	625,642	4	700,547
Windsor	45	1,944	1	525	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Yass	209	49,823	74	57,235	52	89,588	43	158,582	11	103,106	6	79,563	1	21,000	...	...	...	...
Young	290	45,211	162	131,739	132	210,956	85	253,683	33	274,351	32	451,117	14	452,179	3	202,604	...	...
TOTAL	6,193	1,105,083	2,275	1,747,860	2,041	3,110,361	1,640	5,293,544	717	5,092,939	475	6,722,825	477	14,966,272	162	11,296,811	53	7,644,973

ABSTRACT I.

Number of Sheep-owners.	Ranging—		Number of Sheep owned.
	From	To	
6,193	1	500	1,105,083
2,275	501	1,000	1,747,860
2,041	1,001	2,000	3,110,361
1,640	2,001	5,000	5,293,544
717	5,001	10,000	5,092,939
475	10,001	20,000	6,722,825
477	20,001	50,000	14,966,272
162	50,001	100,000	11,296,811
53	100,001	and over.	7,644,973
Total, 14,033	.....	.....	56,980,688

ABSTRACT II.

Number of Owners.	Number of Sheep.	
	From	To
46	100,001	150,000
8	150,001	200,000
5	200,001	250,000
2	250,001	300,000
1	400,001	500,000
62*	.....	.....

*The number of owners of over 100,000 sheep given here is greater than that given in Abstract No. I, and is accounted for by the fact that one person frequently has several holdings, and while the number on one holding is under 100,000 the total of them all is over that number.

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APPENDIX C.

AUSTRALIAN and Foreign Stud Sheep offered for Sale by Auction in Sydney during the Year 1893.

Australian Stud Sheep.

Name of Breeder.	Address.	Number of Rams.	Number of Ewes.	Total.	
				Rams.	Ewes
<i>By Messrs. Bruncker and Wolfe, on account of—</i>					
TASMANIA.					
Basil Archer.....	Woodside, Cressy	12			
J. W. Brumby.....	Ashton	17	15		
Herbert Gatenby.....	Rhodes	193	8		
Thos. Gibson.....	Esk Vale	16	19		
W. Gibson and Son.....	Scone	248	8		
Chas B. Grubb	Strathroy	122			
F. W. Grubb	Benego	31			
W. C. Grubb	Tolamo, St. Leonards	49			
W. G. Hogarth	Kirkdale Lodge	12	14		
Robt. Kermonde	Mona Vale, Ross	31	8		
E. B. Lawrence	Billopp	8			
A. M. Mackinnon	Mountford	30	6		
Norman Nicholson	Camelford, Campbelltown	38			
Allan Parker.....	Hankeh, Conara	11			
Robt. Taylor.....	Valleyfield	38	5		
Geo. F. Thirkell	Darlington Park, Cressy.....	2			
A. R. Thirkell	Retreat, Deloraine	15			
J. H. Thirkell	Rockthorpe, Cressy	9			
Robt. Viney & Son	Fernhill, Lynton	10			
E. Walker.....	Clairville, Cressy	3			
D. J. Whitechurch	Middle Park, Antill Ponds	25			
				920	83
<i>By Messrs. Goldsborough, Mort, & Co., on account of—</i>					
NEW SOUTH WALES.					
Geo. Bruce	Loombah, Molong	10			
E. K. Cruce (Estate of late)	Gungahleech, Ginderra.....	6			
Clark Bros.	Rylstone	1			
Suttor Bros	Bathurst	7			
Thompson Bros.	Brewongle	1			
				25	
VICTORIA.					
J. A. Cochrane	Geelong.....	6			6
TASMANIA.					
Joseph Archer.....	Penshanger, Longford.....	2			
W. H. Bennett.....	Bloomfield, Ross	51	16		
T. G. Bisdee.....	Sandhills, Jericho	6			
James Cox.....	Clarendon, Evandale	2			
E. Dowling	Quorn Hall, Campbelltown	7	12		
Faulkner Bros.	Longford	36			
Chas. Field	Woodfield, Cressy	12			
G. L. Finlay.....	Douglas Park, Campbelltown	49	8		
Arthur Flood	Epping	1			
James Gibson	Bellevue, Epping	191	6		
W. H. Gibson	Fairfield, Epping	82	14		
J. B. Gibson.....	Pleasant Banks.....	54	15		
A. T. Gibson.....	Antill Ponds.....	9	2		
Wm. Gatenby	Woodbourne, Cressy	56	10		
Thos. Gatenby	Fisa, Lake River	38	8		
W. A. Gatenby.....	Glasslough, Epping.....	55			
Arthur Gatenby	Lemon Springs, Oaklands	13	4		
Russell Gibson.....	Epping	1			
Geo. A. Jones	Morville	4	4		
G. W. Keach (Estate of late)	Chiswick, Ross	6	18		
James Murdoch	Craigow, Hobart	7			
D. M'Kinnon	Dalness, Evandale	51			
Geo. Parramore	Wetmore, Ross	29			
Thos. Parramore	Beaufort, Ross.....	87	5		
W. H. Ralston	Woolmers	35	108		
Thos. Riggall	Somercotes, Ross	17	6		
H. S. Smith	Harland Rise, Evandale.....	32	8		
David Taylor.....	St. Johnston, Campbelltown	24			
Thos. Turner.....	Balmoral, Campbelltown	2	5		
James Viney.....	Hagley	3			
				962	249
QUEENSLAND.					
G. C. Clark	East Talgai, Hendon	60	4		
Marshall and Slade.....	Glengallan, Warwick	3			
D. Mott.....	West Parte	1			
				64	4
NEW ZEALAND.					
E. Menlove	Windsor Park	1	16		
P. C. Threlkeld	Flexton		20		
				1	36

APPENDIX C—continued.

Name of Breeder	Address	Number of Rams.	Number of Ewes.	Total.	
				Rams.	Ewes.

By Messrs. J. H. Geddes & Co, on account of—

NEW SOUTH WALES.

Hon. G. H. Cox, M.L.C.	Pine Ridge and Burrundulla, Mudgee.	16	28	
S. Wiseman	Cliffdale, Wingan.	12		

TASMANIA.

Charles Archer	Formosa, Cressy	2	832	176
Basil Archer	Woodside	49	.....	
Frank Archer	Landfall, Newnham	13	.....	
C. W. Allen	Leicesterville, Westbury	20	10		
W. H. Bennett	Bloomfield, Ross	44	.....	
Miles Bennett	Est Farm, Longford	77	12		
S. Bendall	Delmore, Hagley	8	5		
Jonathan Best	Deloraine	14	10		
Charles Best	Westbury	26	2		
J. W. Brumby	Ashton, Cressy	10	10		
W. Burbury	Inglewood, Eastern Marshes	5	.....	
T. J. Burbury	Park Farm, Jericho	6	5		
Mrs. Exton	Outlands	8	.....	
H. R. Falkiner	Wickford, Longford	10	.....	
W. French	Glenore	60	18		
R. C. Gibson	Bolmont, Breadalbane	3	6		
Ben Gibson	Watery Plains, White Hills	9	1		
C. W. Grubb	Tolaro, St. Leonards	22	20		
E. H. Heazlewood	Melton Vale, Glencoe	20	.....	
R. G. Heazlewood	"	40	10		
C. B. Heazlewood	Chudleigh	16	10		
Geo. Hogarth	Raeburn, Breadalbane	7	5		
W. G. Hogarth	Kirkdale Lodge	12	14		
Robert Hogarth	Newstead	6	.....	
Thomas Hogarth	Crowley Hill, Breadalbane	6	.....	
G. A. Jones	Morville, Campagna	7	.....	
W. R. Jones	Brookside, Sheffield	10	4		
G. W. Keach (Estate of late)	Chiswick, Ross	53	.....	
A. Kidd	Woodlands, Evandale	3	16		
Vincent Newton	Clover Hill, Hagley	12	.....	
A. F. A. O'Connor	Benham, Avoca	21	.....	
A. Olliver	Brook Hill, Chudleigh	16	4		
B. S. Oppenheim	Forest Hill, Latrobe	8	1		
W. Pitt	Winterbrook, Bishopsbourne	7	.....	
J. F. Rigney	Bona Vista, Avoca	8	.....	
James Ritchie	Mayfield, Chudleigh	3	.....	
R. Taylor	Valleyfield, Epping	6	.....	
E. Walker	Chairville, Cressy	123	.....	
Charles White	Allan Vale, Newnham	10	.....	
R. Williams	Pleshurst, Campagna	50	9		
James Wright	Caterham, Newstead	2	4		

By Messrs. Griffiths and Weaver, on account of—

NEW SOUTH WALES.

T. Armstrong (Executors)	Noorong	12	217	9
George Bruce	Loombah, Molong	10	.....	
J. D. Cox	Cullenbone, Mudgee	11	.....	
Cox Brothers	Rawden, Rylstone	19	.....	
V. J. Dowling	Luc, Mudgee	30	.....	
James Lee	Larras Lake, Molong	20	.....	
E. D. Morrison	Eringoarrah	1	1		
D. M'Caughy	Corec	10	.....	
J. M'Vean	Mooloomoon	5	.....	
R. Rouse, junior	Biragambil, Mudgee	14	8		
W. B. Sanger	Mooroola	6	.....	
M. D. Synott	Tasnia	3	.....	
H. C. White	Havilah	76	.....	

By Messrs. Pitt, Son, and Badgery (Limited), on account of—

NEW SOUTH WALES.

Australian Agricultural Company	Warrah	19	26	
R. D. and W. Clark	Rylstone	7		

TASMANIA.

Thos. Mason	Hobart	3	16	3	16
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NEW ZEALAND.

Marlborough Farmers' Co-operative Association Company	New Zealand	12	12	
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APPENDIX C—continued.

Name of Breeder.	Address.	Number of Rams.	Number of Ewes.	Total.	
				Rams.	Ewes.
<i>By Messrs. Hill, Clarke, and Co. on account of—</i>					
NEW SOUTH WALES.					
The Collaroy Company, Limited	Collaroy, Merriwa	20	.....	
B. Cutler	Bathurst	11	.....	
J. A. Wallace	Ashleigh, Cadia	20	.....	
				51	
VICTORIA.					
J. C. Cochrane.....	Aitkenside	6	.....	6	
TASMANIA.					
C. W. Allen, jun.....	Leicesterville	18	10	18	10
NEW ZEALAND.					
J. Haydon.....	Prebbleton	7	.....	
E. Menlove	Omaru	25	23		
S. T. Seddon.....	Waikato .....	.....	10		
P. C. Threlkeld	Canterbury	12	.....	
				44	38

The New Zealand Loan and Mercantile Agency Company (Limited) in conjunction with Warder Harry Graves, on account of—

NEW ZEALAND.					
J. W. Baker.....	Wanganui.....	2	.....	
W. Boag	Canterbury	5	.....	
J. Barugh	Hamilton, East Auckland	33	.....	
H. J. Goodfellow.....	Tamutu, Waikato	12	.....	
S. Garforth	Canterbury	8	.....	
W. Grey	Milburn, Otago	39	.....	
R. Hall	One-Tree Hill, Auckland	20	.....	
W. J. Hunter	Ohapir, Waikato	6	.....	
H. Overton	Canterbury	19	.....	
M. H. Pickering	Hautapu, Waikato	56	.....	
J. G. Rutherford.....	Auckland	20	.....	
E. D. Tanner	Hawke's Bay	110	1		
P. C. Threlkeld	Inglewood, Canterbury	20	.....	350	1
	Total Australian .....	.....	.....	3,565	622

Foreign Stud Sheep sold (imported) in 1891-92.

Name and Address of Owner or Importer.	Where from.	Number Imported.		Number Sold.	
		Rams.	Ewes.	Rams.	Ewes.
<i>By Messrs. J. H. Gaddes & Co. on account of—</i>					
W. Mass	Keutzlin, Prussia.....	9	.....	
R. Gadigast	Thal Osetratz, Saxony	4	.....	
Count Schlieffen.....	Schlieffenberg, Mecklenburg.....	2	.....	15	
<i>By Messrs. Hill, Clark, & Co. on account of—</i>					
Messrs. Wood and Burns	Michigan, U.S. America.....	41	.....	41	
	Total.....	.....	.....	56	

APPENDIX D.

STATEMENT of the Operations of the Pastures and Stock Protection Boards during the year 1893.

	Amount of Assessment collected.	Amount Expended.	Kangaroo.	Kangaroo Rats.	Wallabies.	Wallaroo.	Wombats.	Paddamylons.	Bandicoots.	Native Dogs.	Hares.	Opossums.	Pigs.	Eagle Hawks.	Crows.	Emus
	£ s. d.	£ s. d.														
Albury	1,009 13 8	997 13 1		8,876				777		33	19,457					
Armidale	578 1 3	637 10 10		649	962					538	138					
Balmoral	140 12 5	185 1 4								116						
Bathurst	1,253 3 2	1,242 2 8	7,202		41,332					80	65,691					
Berrima		184 9 0								43						
Bombala	591 11 5	750 19 3			17,508					378				367		
Bourke		196 18 10								138			110			
Bradwood		139 8 4								110	720					
Brewarrina	309 5 9	127 5 6										2,856			1,752	
Brooke	403 4 1	223 4 11		2,227	3,340			31	774	145		60				
Cannonbar	431 15 10	443 13 10								111			1,065			
Carcoar	970 14 10	916 5 1		12,730	20,650					9	45,486					
Casino		238 0 0	1,782							1,607						
Colar	306 8 4	270 6 8	68							155						826
Condobolin	2,110 10 11	2,417 2 9		644	23,635			1,843		878						
Cooma	329 2 6	344 9 7								129	2,470			216		
Coonabarabran	863 19 9	1,748 13 3		14,306	104,491					893	1,215					
Coonamble	1,284 19 6	541 16 11								20			3,281	81	4,234	
Corowa	521 14 0	378 13 7		3,994				441			3,739			72	4,009	
Deniliquin	10 12 6	199 0 9		5,000			46									13
Denman	490 1 5	718 19 0		9,772	17,350					56	11,883				246	
Dubbo	383 14 10	506 18 2								176	20,857					
Eden		97 11 3	411	1,500		28										
Forbes	1,152 10 2	1,312 8 8	178	21,360	1,339			2,785		217	24,424					
Glen Innes	785 19 1	763 19 3		7,390	7,047					673	284					
Goulburn	1,669 9 6	2,170 1 2		6,838						15	100,937					
Grafton		104 12 2	616		47					83						
Gundagai	2,332 8 10	1,619 19 11								249	40,916					
Hay	142 3 6	52 0 0														
Hillston	503 7 11	521 14 8														
Hume	875 19 8	1,014 12 7		540						397						
Ivanhoe	458 17 6	443 19 6	807							31	32,908					41
Kiama	232 3 9	223 12 8	192		3,601			481		383		3,576				
Maitland	332 17 7	292 13 9			12,904					21						
Menindee	1,591 3 4	1,085 12 6								1,174						
Merrima	124 1 2	52 7 8														
Milparinka	324 3 7	40 3 3								66						
Molong		866 11 9								204	70,240					
Moree	1,339 11 0	1,912 16 6	7,609	22,336	55,248					168				452	5,230	
Moulamein	109 13 7	170 10 4	3,700							16						
Mudgee	1,135 12 8	1,018 10 7		33,353						105	59,627					
Murrumbidgee	890 4 7	1,031 9 3		15,627	24,559					128	3,083			319	1,985	
Narrandera	673 16 3	866 2 8		1,771				430		260				1,190		
Narrabri	441 8 3	496 0 4			32,391					45				80	929	
Pieter	120 1 2	123 13 6			3,425					40	6,005					
Pilliga	377 5 10	462 8 11								215				144	1,653	
Port Macquarie	231 10 10	275 14 1	655		1,009	417		6,960	404	112						
Port Stephens	213 12 11	247 14 1						6,100		398	44					
Queanbeyan	771 0 10	190 8 1								7	17,004					
Singleton	442 9 9	927 8 2			13,474					213	12,000					
Sydney	248 16 7	204 0 8								4	5,608					
Tamworth	2,469 3 4	1,684 12 0	6	17,548	48,275					439	161			762	4,562	
Tenterfield	725 2 1	1,415 17 10		10,336	68,283			117	619	620						
Tweed-Lismore	459 12 7	496 1 3						26,795								
Urana	61 16 0	217 8 2								36						
Wagga Wagga	805 13 9	960 9 3	13,017					1,120		116	15,473			12	203	
Walgett	577 5 2	430 3 8								39			590		261	
Wangaring	540 13 0	883 6 0								305						
Warialda	996 2 0	3,919 0 4	12,933	7,740	240,122					607				600	2,059	
Wentworth	608 2 3	1,163 7 7								209				2,496	17,891	19
Wilcannia	397 8 10	413 15 4								482						
Windor	208 2 2	216 6 6			2,077					20	3,537					
Yass	34 10 2	230 11 2								84	23,499					
Young	1,263 18 0	1,362 4 0		27,182				3,818		14	53,135					
Totals	39,116 15 7	46,688 5 8	49,254	234,823	743,017	445	46	49,928	1,367	14,148	734,212	3,636	8,802	6,784	44,074	899

APPENDIX E.

STATEMENT of the number of the different kinds of noxious animals killed during years from 1881 to 1893; the amount of assessment collected; the amount of Government subsidy paid; and the total expenditure for each of these years.

Year.	† Kangaroos. Number killed.	Wallabies. Number killed.	Native Dogs. Number killed.	Hares. Number killed.	Wild Pigs. Number killed.	Amount of Assessment collected.	Amount of Government subsidy paid.	Amount of Expenditure.
						£ s. d.	£ s. d.	£ s. d.
1881	581,753	43,724	2,250			17,648 19 10	749 11 2	15,517 5 4
1882	1,452,829	347,842	6,980			45,772 12 8	25,299 19 2	61,191 14 3
1883	750,846	330,109	7,195			32,781 14 2	16,381 19 6	58,132 7 1
1884	1,403,233	473,609	7,336			48,069 15 8	21,606 10 6	62,121 0 0
1885	855,676	506,372	8,474	5,878	922	61,754 15 4	23,753 3 8	64,672 8 2
1886	1,106,478	594,603	9,560	28,623	562	41,585 0 0	16,168 3 0	67,783 6 6
1887	476,438	388,088	7,739	56,628	664	32,651 13 8	9,589 9 5	37,354 11 1
1888	667,436	653,285	9,619	176,732	12,041	25,474 2 10	9,117 7 6	52,121 9 6
1889	495,673	642,782	9,142	329,683	9,700	33,257 0 3	10,000 0 0	50,525 14 3
1890	267,769	506,161	9,955	397,439	5,292	33,649 0 11	8,792 0 0	39,663 11 6
1891	402,053	705,510	11,530	649,131	20,206	31,664 8 9	8,336 4 1	46,794 10 9
1892	428,295	726,669	11,838	786,230	45,173	37,733 19 8	8,408 17 4	49,987 4 5
1893	284,082	743,017	14,148	734,212	8,802	39,116 15 7	1,543 13 11	46,688 5 8
	9,172,661	6,661,771	115,766	3,164,556	103,362	481,159 19 4	159,746 19 3	652,553 8 6

* N.B.—The whole of the accounts of expenditure for 1893 are not yet to hand. † Includes Kangaroo Rats.

APPENDIX F.

From Inspectors' Reports the following results have been gathered regarding the efficacy of the various Drenches and Licks used for Sheep for Worms:—

Drenches.

Arsenic.—For the stomach and tape worms the arsenic and soda drench is still reported as the most effective, and has been by far the most generally used. It has, however, been recommended that potash, as being less severe on the lining of the stomach, should be substituted for soda in its preparation. The arsenic and soda drench is reported by several of the Inspectors as having been also efficacious for lung-worms. No authenticated information has been received of this drench affecting the health of the sheep or injuring the wool.

Turpentine.—Turpentine, with various mediums, has been very generally given for stomach, tape, and lung worms, with good results, when repeated.

Fumigation with Sulphur is reported to have been tried in one case for lung-worms with the best results.

Sulphate of Iron, Horehound, Sulphur, Salt and Iron are reported to have been given, but not with satisfactory results.

Hayward's Specific has given very good results for lung-worms; but the reports as regards stomach and tape are conflicting.

Pottie's and Weaver's Drenches are reported to have been used in several districts with fairly satisfactory results.

While it can be said that a decided improvement follows the administration of most of the drenches generally used, it is a fact that even in the case of the most effective the *post-mortem* examinations disclose that generally where the sheep are at all badly infested some worms are still alive; and this again, it is believed, arises from the owners delaying too long in drenching, and allowing the worms to have too great a hold on the sheep before they are drenched. The consequence is that some worms are left, which keep the sheep from thriving, and, with the introduction of fresh eggs from the water and pasture—if the weather is at all favourable for the development of the worms—in the course of a few months make the sheep as bad as they were before they were drenched. To make the cure effective, therefore, sheep which have been badly infested should, on receiving one drench, be kept as near the drenching yards as possible, and receive a second drench in the course of twelve or fourteen days after the first.

But, while licks and drenches should be provided and given at as early a date and as often as required, owners should give their earnest attention to the removal of what may be termed the contributing causes of the pest by avoiding overstocking, attending to the proper nourishment of the lambs and weaners, burning off old pasture, and getting rid by draining of surface and stagnant water, as suggested in Vol. II, part 2, of the *Agricultural Gazette*.

Licks.

It is reported that the following licks have been used with good results:—

Salt and sulphur.	Salt, sulphate of iron, and Hayward's specific.
Salt and sulphate of iron.	Salt, tar, and turpentine.
Salt and turpentine.	Pottie's Preventive Lick.
Salt, sulphate of iron, and turpentine.	Salt and lime.
Salt, sulphur, and sulphate of iron.	

It is scarcely necessary to point out that a lick, if it is efficacious in warding off an attack of worms: is far preferable to a drench; and as owners in all but the purely saltbush country are now aware that it pays them well to give their sheep a liberal supply of salt, it would add very little to the trouble or expense to give once a month with the salt some of the other ingredients here mentioned which they found from experience was to any extent effective in protecting their sheep from the worm pest.

APPENDIX G.

FOOT-ROT.

DRESSINGS recommended by Mr. E. Stanley, Government Veterinarian. (For further details see *Agricultural Gazette*, July, 1891):—

Arsenic Dressing.

Arsenic, from 1 to 2 oz.
Potash, „ 2 to 4 „
Water, 1 gallon.

To be used in troughs for the sheep to walk through. The mixture to be boiled slowly for half-an-hour at least, till the arsenic is thoroughly dissolved.

Sulphate of Copper (Bluestone) Dressing.

Sulphate of copper, from $\frac{1}{2}$ lb. to 1 lb., dissolved in a gallon of water, may be used instead of arsenic. The following healing dressings may be used by hand after the above caustic applications:—

Tar Dressings.

Stockholm tar, 20 parts; carbolic acid, 1 part.
Or,
Stockholm tar, 8 parts; bluestone in powder, 1 part.
Or,
Oil of tar, 10 parts; carbolic acid, 1 part; olive oil, 1 part.

Lime

Lime Dressing.

Quick-lime, sprinkled on a dry surface, and the sheep walked through it frequently, will be found very beneficial. Before any dressings are used, the whole of the loose horn should be pared carefully from the diseased feet. It is of the greatest importance that the sheep's feet should, on the dressing being applied, be kept thoroughly clean and dry for at least three hours afterwards. They should, therefore, on leaving the troughs, or being dressed, be passed directly on to a battened or wooden floor, if it can be got, and, where neither of these is obtainable, they should be passed into a dry yard, in which there is a good coating of straw, cut grass, or dry bark, taken from trees which have been rung, or, in fact, any other thing which will keep their feet clean and dry.

APPENDIX H.

INFLUENZA IN HORSES.

(By E. Stanley, F.R.C.V.S., Government Veterinarian.)

Character.—It is a contagious equine fever, due to germinal matter invading the system, producing disastrous changes in the blood, which interfere with nutrition, excite congestion, and occasionally inflammation of important organs or tissues.

Cause.—The germs of this disease are always lurking about, and epidemics are due to exceptional climatic changes that have a lowering effect on the health of horses, and at the same time favour the vitality of the disease germs.

The worst cases are amongst hard-working horses in overcrowded sheds, with bad sanitary surroundings; next come fat horses, and the least susceptible are horses that are in good working condition, cleanly kept, and well cared for; if such have the disease at all it is in a mild form, and they speedily recover.

Symptoms.—In the onset loss of appetite, drowsy headache, pain in the limbs, general weakness; in many cases the eyelids are swollen, tears trickle down the face; there may be discharge from the nostrils, and occasionally coughing; the eye will be found scarlet and orange colour, the tongue furred, breath offensive, the heart beats feebly but quick, the pulse is small and weak, the dung is soft, and the urine high-coloured; there is a general rise of the bodily temperature.

As the disease progresses the symptoms will depend on its course, which is very variable, as the numerous names given to the disease indicate. The vital forces in many cases overcome the toxic effects and excrete the poison from the system; it is to assist this process that we have recourse to treatment.

The Treatment.—This should consist of rest, pure air, shelter from sun, rain, or wind, bran mashes, and cut green food with drachm doses of chlorate of potash, carbonate of ammonia, or nitrate of potash given in the drinking water; if the case has been taken early enough, and the surroundings are good, the fever will abate, and recovery be complete in a very few days.

Unfortunately many horses are worked at the commencement of the illness; then they are completely knocked up, and they present a variety of bad symptoms, owing to the mischief being located in individual organs, such as those of respiration, or the bowels, liver, spleen, lymphatic glands, or cerebro-spinal system. The location can only be diagnosed by the educated veterinarian, and every case should be treated to suit the nature and stage of the illness; dropsical swellings are a favourable indication, but time and patience must be allowed for recovery. No case is cured until the horse is playful at exercise.

I would caution owners to beware of amateur veterinary advice, as far more harm is done by ignorant treatment than by the disease. To illustrate my meaning, a horse with this sickness often has an anxious countenance, dilated nostrils, rapidly panting flanks due to acute pain, which may be owing to congested liver, laminitis, or other obscure complication, but the charlatan says he has got it on the lungs, and proceeds to torture the poor brute by blistering his sides, bleeding, setoning, &c. Such treatment as bleeding, blistering, or purging is very antiquated and erroneous.

My advice is to employ the best qualified veterinary surgeon available, and to see the poor animal has a good nurse, with pure air, cleanliness, rest, and comfort. It is cruel to turn sick horses out to shift for themselves.

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

GLEBE ISLAND ABATTOIRS.

(RETURN RESPECTING.)

Ordered by the Legislative Assembly to be printed, 22 May, 1894.

RETURN to an *Order* of the Honorable the Legislative Assembly of New South Wales, dated 9th May, 1894, That there be laid upon the Table of this House,—

“ A Return showing the number of horned cattle, sheep, calves, and pigs respectively, condemned as unfit for food at the Glebe Island Abattoirs for each month of the year 1893, and for the first four months of 1894.”

(*Mr. Young.*)

RETURN showing the number of horned cattle, sheep, calves, and pigs respectively, condemned as unfit for food at the Glebe Island Abattoirs for each month of the year 1893, and for the first four months of 1894.

	Cattle.	Pigs.	Calves.	Sheep.
1893.				
January ...	92	42	11	5
February ...	131	37	...	6
March ...	197	47	4	3
April ...	94	39	3	...
May ...	101	36	...	...
June ...	102	66	13	19
July ...	166	40	2	3
August ...	132	84	1	...
September ...	115	72	2	...
October ...	131	83	6	...
November ...	151	83	...	...
December ...	172	117	37	...
Total ...	1,584	736	79	36
1894.				
January ...	256	135	2	..
February ...	229	126	2	...
March ...	91	94	2	...
April ...	117	63	2	...
Total ...	693	418	8	...

[3d.]

391--

[770 copies—Approximate Cost of Printing (labour and material), £1 6s. 3d.]

1894.

 NEW SOUTH WALES.

VINE DISEASES ACT.

(REGULATION UNDER.)

 Presented to Parliament, pursuant to Act 56 Vic. No. 22, sec. 52.

Department of Mines and Agriculture,
 Sydney, 5 May, 1894.

VINE DISEASES ACT OF 1893.

PURSUANT to the provisions of Act 56 Victoria No. 22, section 52, the Governor, with the advice of the Executive Council, hereby makes the following Regulation:—

For the purpose of completing the revision of the Vinegrowers' Roll for any district proclaimed under the "Vine Diseases Act of 1893," any Magistrate appointed under section 24 of the said Act to hold a Court for the revision of a Vinegrowers' Roll, may adjourn such Court to such other place or places, and to such other time or times as may from time to time appear to him necessary.

T. M. SLATTERY.

1894.

NEW SOUTH WALES.

DEPARTMENT OF AGRICULTURE AND FORESTS.

(FIRST REPORT.)

Presented to Parliament by Command.

To The Honorable T. M. Slattery, Esq., M.P., Minister for Mines and Agriculture.

Sir,

In my report for 1892, for reasons therein given, I trenched upon the operations of 1893, so as to cover the work done up to the date on which the Departments of Agriculture and Forestry were, in the interests of economy, reorganised, and for convenience of management brought together. I shall, therefore, with your permission, restrict this report mainly to the operations of the combined Departments, say, from the 1st July last.

At the outset, I may, perhaps, be pardoned for expressing my high appreciation of the services of the Chief Clerk of the Department, Mr. W. S. Campbell. To this gentleman I am deeply indebted for his very valuable aid in the work of reorganisation, both in the Department and in the field, he having seconded all my efforts to the utmost of his ability; while his extensive and varied experience in matters relating to agriculture, horticulture, and arboriculture has given his assistance special value. Mr. Cheesborough, in the Forest Branch, and Mr. Pready, in the Agricultural Branch, and the gentlemen under them respectively, deserve my best thanks for their devotion to their duties.

Of the work of the scientists and specialists connected with the Department, I cannot speak too highly, and I desire to record my thanks to those gentlemen for the ready and able assistance they at all times render me.

Notwithstanding the heavy reduction (due to the Government scheme of retrenchment) in the votes granted to this Department, and the consequent decrease of the staff, I am happy to say the necessary work of the Department has been efficiently performed. After the reorganisation of the Department in June last, the monthly crop reporting was continued on very similar lines to those previously worked, but within such limits as enabled one officer to include it within the scope of his duties.

The crop returns from May to September inclusive were prepared by Mr. Dummicliff, under such conditions, and duly published, after which the duties were transferred to the Department of the Government Statistician, which has special facilities for such work.

The number of papers registered during the year was: Agriculture, 16,025; Forests, 7,870; as compared with Agriculture, 12,724; Forests, 10,250, in 1892. From these figures it may be inferred that the usefulness of the Departments has been in no way impaired, and that the interest of the general public in the work has not decreased.

The number of letters issued during the year was: Agriculture, 9,045 (exclusive of 5,520 post-cards and 15,630 circulars); Forests, 5,653. The decrease in the number of letters issued from the Agricultural Branch during the year as compared with the previous year, is due to certain changes in the system of working, whereby the number of letters written to officers of the Department has been reduced.

I am happy to say that the *Agricultural Gazette* is still growing in popularity, the number issued during 1893 reaching 40,800 copies, whilst 24,663 miscellaneous publications were also issued. The number of letters received during the year from farmers and fruit-growers relating the satisfactory results which have been obtained from following the instructions given in the *Gazette* for the treatment of insect and other pests is very gratifying. The best thanks of the Department are due to the gentlemen who contribute the articles, and to the editor, Mr. Gray, for his efforts to issue the *Gazette* punctually, and in a creditable form. I propose at an early date to submit a scheme under which I trust the cost to the State of publishing the *Gazette* will be considerably reduced.

Précis of pamphlets issued from 1st July to 31st December, 1893:—

Tobacco as a farmer's crop for New South Wales. Part 3. By G. F. Sutherland.—A description of the method of "hilling," "pruning," "topping," and "suckering" the tobacco plant; also a description of the best method of constructing a curing-house, with illustrations. From vol. 4, part 7, of the *Gazette*.

Tobacco as a farmer's crop for New South Wales. Part 4. By G. F. Sutherland.—Describes the method of harvesting and curing tobacco; also sorting, bulking, and packing same. From vol. 4, part 8, of the *Gazette*.
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- The cultivation and uses of the "Caper Bush." By F. Turner.—Description of the method of propagating and planting. Chemical composition and uses. Illustrated. From vol. 4, part 7, of the *Gazette*.
- Poultry, No. 6. By S. Gray.—A description of the "Plymouth Rock." General characteristics. Principal breeders in New South Wales. Illustrated. From vol. 4, part 7, of the *Gazette*.
- Tan substances.—"Canaigre." By J. H. Maiden. Description of the first efforts to establish its commercial value. Method of preparing for shipment. Illustrated. From vol. 4, part 7, of the *Gazette*.
- Heredity in Bees. By Albert Gale.—A paper on this subject appeared in the *British Beekeeper's Journal*, of 11th May, 1893, by Mr. Grimshaw, in which it is stated that the "external organs and mental characteristics in worker bees are produced by means of brood food." Mr. Gale in this pamphlet denies this, and states that the theory is wholly untenable. From vol. 4, part 8, of the *Gazette*.
- Poultry, No. 7. By S. Gray.—Describing the "Leghorn fowl." General characteristics and principal breeders in New South Wales. Illustrated. From vol. 4, part 8, of the *Gazette*.
- Lumpy jaw in cattle.—Extracts from a report on this disease prepared by the United States Government from the experiments of Dr. D. E. Salmon, Chief of the Bureau of Animal Industry, and Dr. V. A. Norgaard, Veterinary Inspector. Description of the experiments carried out. Cost of treatment. Successes of the "Iodine treatment." Description of *post mortem* examination of cattle supposed to be cured; and also of cattle suffering from this disease. Illustrated. From vol. 4, part 8, of the *Gazette*.
- Report of the Department of Agriculture for 1892.
- Cross-breeds for freezing and export.—A tabulated return obtained by the Agent-General, London, from the principal breeders in England of the weight and value of the fleeces of the leading breeds of English sheep at the ages of 3, 15, 27, and 39 months, in order to ascertain which is the best description of English ram for our merino ewes, for the production of cross-breeds for freezing and export. From vol. 4, part 9, of the *Gazette*.
- Poultry, No. 8. By S. Gray.—"Capons and caponising." A description of the tools required, and how the operation is performed. Illustrated. From vol. 4, part 9, of the *Gazette*.
- Orange culture. By A. H. Benson.—Portions of the Colony in which the oranges can best be cultivated. Climate and soil most suitable. Best method of drainage. Situation and aspect, their importance. Preparation of the land. Propagation and stocks. Laying out and planting an orchard. Directions as to general cultivation. Diseases of the orange and their treatment. Handling and marketing the fruit. From vol. 4, part 9, of the *Gazette*.
- Pruning. By A. H. Benson.—Gives directions for pruning the apple, pear, apricot, cherry, plum, peach, nectarine, fig, almond, lemon, mandarin, and various other fruit-trees. Illustrated, from vol. 4, part 10, of the *Gazette*.
- Experiments with Pulses. By Geo. Valder.—Results of experiments carried out by Mr. Valder, with a view to testing the comparative value of the pulses cultivated in this Colony. From vol. 4, part 11, of the *Gazette*.
- The Northern Rivers. By A. H. Benson.—A description of a trip taken by Mr. Benson to the Northern Rivers District, giving his opinion of the varieties of fruit most suitable to each locality visited. From vol. 4, part 11, of the *Gazette*.
- Cold Storage of Fruit. By A. H. Benson.—A description of experiments carried out with regard to the cold storage of deciduous fruit, and the results obtained with each of the following varieties:—Apples, pears, plums, peaches, nectarines, grapes, mangoes, pine-apples, tomatoes, and passion fruit. From vol. 4, part 11, of the *Gazette*.
- Corkwood or Duboisia. By J. H. Maiden.—A description of the plant, and the opinion of different authorities as to its medicinal uses. Illustrated. From vol. 4, part 11, of the *Gazette*.
- Poultry, No. 9. By S. Gray.—Description of the Dorking fowl. General characteristics. Principal breeders in New South Wales, &c. Illustrated. From vol. 4, part 11, of the *Gazette*.

The Department, recognising that the future prosperity of this Colony depends largely upon the extent to which our products, such as meat, butter, cheese, wine, fruit, tobacco, &c., &c., can find a profitable export market, is using every effort to encourage the export of these articles, so far as can be done with the means at its disposal, and so far as the producers and exporters are willing to avail themselves of the help of the Department.

I take the opportunity of inviting attention to the exports of agricultural products from the United States, America, for the fiscal year, ending 30th June, 1892, as published in the report of the Secretary of Agriculture for 1893.

It appears that during the period mentioned that these exports "attained the enormous figure of eight hundred million dollars (approximately £160,000,000 sterling), being 78·7 per cent. of our total exports. In the fiscal year following, this aggregate was greatly reduced, but, nevertheless, attained the very respectable figure of six hundred and fifteen millions (approximate £123,000,000 sterling), being 74·1 per cent. of all American commodities exported. The value of the foreign markets to our farmers, and to the entire population can hardly be over estimated. . . . In almost every line the United Kingdom and Ireland absorb by far the largest proportion."

It is clear that the Americans are fully alive to the importance of retaining as much of this trade as possible, and also of increasing it largely. The Secretary states, "It must not be forgotten that in the universal competition for enlarged trade constant efforts are being made, and will continue to be made, by other countries producing a surplus of agricultural products, to wrest from us the supremacy we now hold in supplying Great Britain and a few other countries, that are not self-providing in such products; that many of these are British colonies, and that, except as regards cotton, there are none of which we enjoy the practical monopoly." . . . To overcome impediments to trade the plan of sending agents into Germany, Sweden, and other European countries, to tell foreigners the value of Indian corn as human food, was inaugurated. . . . The missionary labours in the food-consuming fields of Europe of the special agents of this Department, which the law provides for have been extended, so that a thorough inquiry is being prosecuted as to why American meats are partially excluded; why American tobacco is not more demanded; why American wheat-flour cannot be more generally marketed in Europe; why cranberries are not sold there; why American wines are not called for; and why Europeans generally shall not be consumers of American canned goods?"

From

From this it may be seen how necessary it is for us to be on the alert; to keep up to the highest standards with our products; to suit the tastes of our customers, and use every means possible to gain a firm footing in British and Foreign markets.

To take one production alone, that of pork, I think a vast trade might be done. To give an idea of the magnitude of the American pork exports I will again quote from the Secretary's report:—"Of pork products, the total exports for 1892 aggregated in value eighty-five million dollars (£17,600,000), of which Great Britain took forty-seven millions (£9,400,000), and in 1893 eighty-five millions, of which Great Britain took fifty-three millions (£10,600,000)." This seems almost incredible. If we could export from this Colony, or even from Australia, to the extent of a tenth part of this value the benefits would be great. The production of pork in America is due to the immense quantity of maize raised. In this Colony maize can be grown even better than in America, and our average yield per acre is greater.

In connection with the export of meat, the Chief Inspector of Stock (Mr. Alex. Bruce) visited New Zealand, and furnished a valuable report, and he is now engaged in collecting information on the same subject in America, Canada, Great Britain, and the Continent.

In the meantime the following extracts from a review of the frozen meat trade (1893) by a leading firm of colonial commission agents may prove interesting.—

The importation of frozen mutton and lamb from Australia has increased from 400 carcasses in 1890 to 605,692 in 1893. The anticipated increase during 1893 in the output of the various new freezing works not being fully realised, the closing year's import exceeded the previous year's record by only 100,000 carcasses. Stocks were at that time unmanageable, the arrivals having been, on the whole, fairly regular, and thus admitting of more satisfactory handling than was possible in some earlier seasons when imports were much lighter in aggregate but not so well distributed over the year. A larger import could undoubtedly have been dealt with. Arrivals from New South Wales, Victoria, and Queensland came into competition at times with one another, besides being in a state of constant rivalry with River Plate mutton; but, generally speaking, Australian sheep sold relatively more freely and at better prices in and around London than in the northern counties. Argentine mutton arriving at Liverpool is still able to hold its own around that centre, for the threefold reason that its reputation was first established there, that its quality suits purchasers, and that its cost laid down there is necessarily lower than that of mutton landed in London and forwarded by rail to the Liverpool district, at an average cost of about one farthing per lb.

Irregularity was again the outstanding feature of the numerous shipments received from New South Wales, Victoria, and Queensland. Merino sheep under 45 lb. were not likely to command good prices, but the 45-lb. to 55-lb. carcasses helped to fill the gap between ordinary River Plate sheep and secondary New Zealand sheep, while the limited number of 55-lb. to 65-lb. crossbred sheep received intermittently from various districts in Australia, found there was room for them, too, in the same gap, but at an appreciably higher level of value. These resemble in quality and style of carcass the River Plate crossbred mutton more nearly than the crossbred mutton shipped from New Zealand. If received regularly and in large numbers, such sheep would soon establish a distinct position for themselves in the market midway between the prices secured by the two great competing sources of production. Australian and River Plate merinoes are more likely to become keener competitors as imports from the former source increase, and Australian shippers will doubtless so lay their plans as to be able to meet the inevitable struggle with their Argentine rivals for the custom of the masses of Great Britain and continent, to which our lowness of price is as much a necessity as are a reliable standard of quality and unfailing regular supply.

Supplies from Australia were again intermittent and of no great bulk, but their presence on the London market frequently prejudiced the sale of New Zealand consignments, owing to their being worth considerably less money. Shipments coming to hand early in the year were readily sold, and at no time was the market overstocked. That the prices obtained were satisfactory to shippers is doubtful, but it is not improbable that a net result was arrived at in 1893, which will prove a fair average of ordinary seasons. Lambs which are not really prime are not particularly wanted in this market, and many of the parcels received from Australia were very far from being prime, an average weight of as little as 25 lb. per carcass being occasionally reported.

The unreasonable objections raised in some quarters to the general adoption of some intelligent system of grading shipments has now practically disappeared, and almost every freezing establishment in New Zealand has a recognised mode of classifying its output. The advantages of grading are thoroughly well appreciated by everyone who desires to see the retail trade expand without hindrance. The absence of uncertainty as to quality and weights of graded parcels admits of their rapid distribution in the most suitable markets and lessens appreciably the cost of handling at this end. So well-established is now the preference for graded mutton and lamb that many of the largest London and provincial retail buyers decline to buy ungraded shipments, even at a concession in price—in other words, are prepared to pay a premium on graded parcels.

Existing systems are, however, by no means all perfect. In some cases, beyond separating merinoes and old ewes from the crossbred wethers and maiden ewes, little attention appears to be paid to anything except weight. Unless quality is considered first and weight only second, disappointment is certain to result to both shippers and buyers. Roughly speaking, the various districts in New Zealand are represented by more or less distinctive types of carcass, but in some parts, where the variety of carcasses is great, or where different works draw their supplies from the same district, it is not always possible to discover any definite basis upon which grading has been effected, except that of weight. A further element of uncertainty is introduced by shipping from one district sheep or lambs which were bred or even fattened in another district.

The following extract from the report of the Committee of the House of Lords fairly summarises the case for foreign meats as compared with home-grown meats:—

The Committee desire to draw especial attention to the possible effect which any system of marking may have on prices. It is impossible to foretell precisely what may be the result of legislating in this direction, but so far as your Committee are able to judge, any course which would affix to meat an unmistakable mark of its place of origin would, temporarily at least, produce some variation in price, and some dislocation in the trade. At first it is probable that those butchers who have hitherto supplied customers very largely with imported meat would find it necessary to restrict their purchases for a time to home-grown animals, with a corresponding diminution in their own profits. But most of the witnesses agree that as the imported meat became better known, so would it increase in popularity. While the Committee believe that it will be impossible to place before the consumer meat equal in quality to the best that can be grown in these islands, and that consequently such meat will continue to command the top price, they think that there is a large quantity of meat produced in Great Britain of less good quality, which is inferior to the beef imported from America, and even to the mutton imported from New Zealand.

The ultimate result, therefore, might be that meat would come to be divided into four general classes, with considerable variation of price.

First, the best home-grown meat; secondly, the best imported meat; thirdly, the second class home-grown meat; and lastly, the inferior meat, both home grown and imported. Whereas the third class now stands in point of price ahead of the second, the indication of the country of origin might transpose their values in the market.

It was very generally asserted before the Committee that the average excellence of imported meat was higher than that of home-grown meat.

"The Committee think that considerations such as these ought not to be lost sight of by those who are advocating this principle (marking foreign meat) in the interests of the producers of meat in these islands.

It remains for Australasian shippers of frozen beef, mutton, and lamb to follow up this most valuable testimony as to the quality of their exports. Let them take up the proposals of those who hoped to handicap the importation of meat into this country and adopt them forthwith for their own protection. By all means mark Australian meat in some such way as will prevent its being mistaken for meat killed at home. Let each freezing establishment have an official inspector, whose certificate of health, attached to each quarter of beef or carcass of mutton and lamb, will be an absolute guarantee that the meat is wholesome. In due time the public would expect to see these certificates attached, and retailers would find

find it in their interest to retain them. If registered as official trade marks by the various Colonial Governments (each colony using a distinctive colour for its certificates), it is most probable that any tampering with such labels on this side would be punishable under the existing law. These certificates could be made similar to those now used by shippers of American chilled beef (under compulsion by the United States Government), viz., stout parchment labels about 4 inches by 2 inches, firmly affixed by wire, and sealed with an official leaden stamp, so that the label cannot be transferred to any other piece of meat without the change being discoverable. This cannot, of course, prove a complete protection against fraud, but it would go a long way towards reducing it to a minimum, and would tend to increase the popularity of colonial meat. The adoption of some such scheme would not in any way interfere with the existing methods of distinguishing the meat of the various shippers by brands on cloths and on tabs.

Prior to the inquiry above alluded to, the opinion was generally held that it was best not to interfere in any way with the sale of colonial meat; but it has now been demonstrated very clearly that colonial shippers have everything to gain by marking their meat as indelibly as is possible without disfiguring it, and thus giving a practical certificate of health with each animal exported. A further advantage would be gained by the assistance thus given to introducing Australian meat into continental markets, where more strict regulations exist than in this country, and where a certificate of health is invariably required.

The import of all kinds of live and dead meat into this country now represents just one-third of the total consumption, or (say) 700,000 tons out of 2,122,000 tons. The home production of beef and mutton does not increase so rapidly as do the requirements of the growing population, and the quantities of imported dead meats of all kinds have risen from 13.5 lb. per head in 1873, to 19.1 lb. in 1883, and 29.0 lb. in 1891 (the latest official return). Apart from the question of the increasing annual consumption, these figures reveal a steadily growing dependence on foreign supplies, and afford a guarantee of a sustained demand for colonial beef and mutton. The last Census returns show clearly that, out of a population of 37,704,233 persons in the United Kingdom, about 25,000,000 represented working men and their families. Twenty years ago the great bulk of the home production of meat was consumed by the upper and middle classes, the working man using comparatively little meat then. The scale of living amongst the masses of our population is now, however, undoubtedly rising steadily, and low price of frozen meats is fostering a taste which could not be gratified until within recent years. The capabilities of this undeveloped field cannot be gauged even approximately; but at a moderate level of prices, and with the rate of increase reasonably regulated, there can be little doubt that the outlet will prove to be co-extensive with the producing capacities of the colonies.

In regard to butter, &c., the Department, through the Agent-General, obtained a valuable report from Mr. Charles R. Valentine on the grading of butter and the production and marketing of colonial dairy produce. During his visit to this Colony, Mr. Valentine, accompanied by Mr. Dunnichiff, visited the butter factories in the South Coast and Hunter River Districts. He stated that at least one of the factories inspected was equal to anything they had in England. He also complimented the Colony on the possession of such excellent dairy cattle, particularly those in the Illawarra District. During the year the Department was able to render some assistance in sending away a trial shipment of butter to the continent of Europe.

I venture to think we should use every effort to secure uniformity in the make of our butter, as I fear until we do we shall not take that position in the English markets to which we may fairly aspire. The establishment of creameries in the country, and large factories near the port of shipment, will, I think, be one of the means to this end.

The quantity of butter exported has greatly exceeded that of last year. With the shipping season as yet unfinished (on 31st January), the quantity exported has already exceeded 2,880,000 lb., valued at £114,000; against a total shipment of last season of 2,255,551 lb., of a value of £89,929. It is, however, too early in the year to furnish statistics of this industry.

It is also worthy of note that the returns from England up to date show that consignments of butter for sale in the open market have realised satisfactory prices.

The following extracts from the report of the *Herald's* Special Commissioner on the Victorian butter export have an important bearing on the export of butter question:—

"It is no use sending an inferior article to London," remarked Mr. D. Wilson, the Victorian dairy expert, as he explained the whole system to me. "The buyers there are keen judges of the quality of butter. They know the article as well as anyone in the world. Good margarine is better than bad butter, and if we cannot send the finest quality of butter, it is better to send none at all."

These words furnish the key to the whole situation, and explain the phenomenal expansion of the Victorian butter export, an expansion which is probably without parallel in the records of colonial trade with the Mother Country.

"The Corporation refrigerators to which I have already referred are leased and worked by the Government, which conducts all the operations of shipping. Here there is storage-room for some 500 tons of butter, and even this accommodation frequently proves insufficient, and many cases have to wait for days before finding room in the cold chambers. On arrival at the stores, the butter is tested by the Government expert, Mr. Waugh, who has had thirteen years' experience in the Cork butter trade, and, if found sound and pure, and of a sufficiently high grade, is stamped with the mark of State approval. The package is then placed in one of the numerous little cold chambers, and kept for a week or so at a temperature varying from 20 to 35 degrees. It is then ready for shipment, and all that remains is to run it down to the Port Melbourne railway pier, and place it in the cold chamber of the steamer.

"For all this costly work the Government generously charges nothing, so that here we have another bonus, though of an indirect character, granted to the producer. The cost of maintaining this elaborate refrigerating plant, and providing the labour needed for handling the butter three times, must be very large, though I have not, as yet, been able to ascertain the exact sum. As if this were not enough, the State also contracts for the freight to England. By an arrangement with the P. and O. and Orient Companies, the Government takes up all the space available for the cool storage of butter in each steamer. This space is then allotted equitably amongst the various shippers, the freight charged being only 1d. per lb. Small as this may seem for a voyage of 13,000 miles, an agitation is now on foot to obtain a reduction in the rate, as the shippers complain that they find it difficult, even under the present favourable conditions, to make a profit."

Extracts from the report of the *Herald's* Special Commissioner on the New South Wales butter export:—

"The difference between Victoria and New South Wales is just this: In Victoria they manufacture the butter expressly for export and sell the surplus locally, whilst in New South Wales they make for the local market and export the surplus.

"It may be interesting to Sydney consumers to learn that the export trade is only valued by the shippers in so far as it serves as a lever to sustain the local price at an artificial level. It is a discharge-valve which prevents the market from overflowing by sending the surplus away. There is no secret about the matter. Anybody in Sussex-street will explain to you how the thing works. It is all done openly in the interests of the producer, for it is not the business of the dairyman or their agents to look after the consumer. "It is better," said one dealer to me, "to lose a few thousands yearly on the export of butter, so long as we can keep the Sydney market at a satisfactory level." The same thing is printed in the report of the South Coast Company, from which I have just quoted. The directors remark:—"It is estimated that a distinct benefit of not less than £50,000 has been gained by the consignors to this company alone by this exportation movement." For the present season a large trade is anticipated, and the report winds up with the following clear statement of the situation:—"If profitable prices are to be sustained in Sydney during the summer, then the surplus must be sent to London at lower prices, and the profit and loss on London sales on this surplus is a mere nothing when compared to the immense momentary benefit derived by producers with the sustained prices from October to March."

"As far as the export trade goes, this heading is somewhat misleading, for though very excellent butter is made in Sydney, it is not for export purposes. The two chief factories belong to the South Coast and West Camden Company and the Fresh Food and Ice Company. At each of these establishments there is a first-class churning plant, capable of making the finest creamery butter, and creamery butter, it may be regarded, is now recognised as being as far ahead of factory butter

butter as the factory article is ahead of the old hand-made dairy article. It commands about 1d. per lb. better price, and any quantity of it could be made were it only possible to get the cream. This is the great difficulty. The factories, of which there are many within easy reach of Sydney, prefer to send their butter rather than their cream to Sydney, and it is very difficult to persuade them that the latter plan would be more advantageous. "We want all the butter we can make to meet local demand," said the manager of the Fresh Food and Ice Company, and at the South Coast Company's the complaint was the same, consequently the butter which is exported, instead of being specially manufactured for the purpose as at Melbourne, is merely the overplus of the Sydney market. After a long journey by steamer or rail the butter arrives in Sydney in but poor condition. The buyers select what they require of it and the balance is placed into boxes and chilled for export. It is impossible under these circumstances to give the London buyers a sound, pure, and uniformly graded article.

This method may answer for a time, but unless I am much mistaken, the butter-making industry will in a few years have increased to such an extent that the quantity of butter required for the local market as compared with the total production will be so small as to be quite unimportant, and the full importance of the export trade will have to be recognised, and the special requirements of that trade must then be the first consideration. In the meantime it may, though it is to be hoped it will not, be found that this Colony has, for the sake of securing present and temporary gain, sacrificed its chance of building up a reputation, and that it may have great difficulty in recovering lost ground. The only way in which this Colony can hope to secure a commanding position in outside markets is to send produce of first quality and uniformity, so that its brands may have a recognised value.

In view of the growing importance of the dairy industry steps have been taken to provide instruction at the Hawkesbury Agricultural College in butter and cheese making on the best known principles. To this end a number of dairy cattle have been procured, the services of a most experienced butter and cheese maker have been secured, a building which will be fitted with all the most approved appliances is now in course of erection, and as soon as arrangements are completed, non-resident students (male and female) in this special branch, will be instructed by lectures and demonstrations in all the details of dairying, cheese and butter making, &c. A very valuable work on dairying, edited by Mr. J. P. Dowling, has been published by the Department, which it is hoped will prove of great service to dairymen or to persons intending to enter upon the work of butter and cheese making.

In connection with this branch of industry some valuable experiments have been made under the Principal of the Hawkesbury Agricultural College, by the Science-master, Mr. E. C. Wood, assisted by the Chemist of the Department in the condensing and concentrating of milk both whole and separated. Some experiments were also made in the milk-producing properties of certain fodders, but as the results obtained were not quite satisfactory, it is proposed to make others under more satisfactory conditions.

An interesting report was prepared by Mr. E. Clarence Wood, in December last, on the manufacture of condensed milk as a proposed colonial industry. This was fully published in the December number of the *Agricultural Gazette*, so that it will be sufficient to refer briefly to the great possibilities of this trade, both for supplying local wants, and also for export.

The report is based upon the results of his own direct observations and experiments, and conclusively shows that, as an industry, condensed milk would be even more lucrative than butter and cheese-making, while the cost of erecting a complete plant would be no greater.

Mr. Wood gives a brief outline of the process of manufacture, which shows that the management would require neither more labour, nor more skill than butter-making—far less indeed than cheese-making.

The report is well worthy of the attention of dairy farmers, as affording another opening for their produce.

With a view to extend the New South Wales wine trade in England, the Department, acting on the suggestion of Mr. C. W. Lett, of the Imperial Institute, has taken steps, which will, it is thought at a minimum of expenditure, make known to the public in London some of the best brands of the New South Wales wines. The action of the Department in this regard appears to have met with the approval of some of the leading wine-makers of this Colony, and there is reason to believe that ere long a trial shipment to London will be made. Recognising the absolute necessity of exercising a wise discretion in regard to the wines to be shipped, the Department has invited P. F. Adams, Esq., and Dr. Fiaschi to form in conjunction with Mr. Despeissis (Consulting Viticulturist of the Department), a committee to test any wines submitted before shipment to London, and these gentlemen at once kindly consented to place their services at the disposal of the Department. Efforts are now being made to secure cellar accommodation for wines submitted to the committee. It is possible that this movement may lead to consideration of the expediency of establishing a cellar or cellars for the blending and export of our wines. In this connection it is proposed to make a systematic investigation of the wines of this Colony, with a view to assist in judging, treating, blending wines, and in selecting wines that are suitable for brandy making and so forth. It is felt, that under proper conditions and management, there is a great future for the wine industry of this Colony, and the problem which the Department has to face is how it can best help in placing the produce of our vineyards in the European and other markets, whether as wine or brandy in a manner best calculated to secure such a reputation as will ensure a permanent and growing demand without involving the expenditure of public money, and without interfering unnecessarily with the normal operations of private enterprise.

The experiments in connection with wine fermentation carried out last year were, on the whole, fairly satisfactory, and a number of wine-growers have decided to continue the experiment with fresh levures this season.

The Corowa Fruit-growers' Association tested a number of samples of wine treated with levures, together with those untreated, and reported that, taken as a whole, the levured wines were slightly the better, but it was considered premature to express a decided opinion.

From the favourable results which have followed from the use of levures in France, California, and Algeria, it is probable that better results would have been obtained if all the experimenters had the proper appliances, and thoroughly understood the process to be carried out. The Department is, therefore, issuing explicit instruction to experimenters this year, in addition to which Mr. J. D. Lankester, at Albury, and Mr. Despeissis (Consulting Viticulturist), at Tamworth, are arranging to carry out a systematic test during the 1891 vintage, the results of which will be embodied in my next report, and will be of much interest to the wine-growers generally.

In connection with the wine industry, attention is invited to the great importance of encouragement being given to the manufacture of brandy and other spirits.

If the Government in its wisdom could see the advantage of abolishing the excise duty on spirits, it should give a great impetus, especially to the vine-growing industry, and provide an important item for

It might also lead to distillation from grain, roots, &c., &c.; and if a system of licensing were introduced, whereby it would be possible to ensure that spirits made from grapes could be distinguished from spirits made from grain, roots, &c., we should be able to guard against adulteration.

The Vine Diseases Act was assented to on the 7th June last, and steps were at once taken to prepare lists of vine-growers, appoint returning officers, and make the necessary arrangements for holding the first election to the several Vine Disease Boards. The Board for the Cumberland District was elected on the 29th November last. The Board of the Murray River District was not elected till the 18th January, 1894, and the election for the Hunter River District failed in consequence of no candidates having been nominated. Steps are being taken to appoint a Board for that district.

As might naturally be expected, some little difficulty has been experienced by the Boards in putting the Act into operation, but this has been mainly due to want of acquaintance with the provisions of the Act, and inexperience in working the same, and will no doubt be readily overcome.

The fact that the Act makes no provisions for paying members of Boards for loss of time and money out of pocket in attending meetings is regarded by many of the vine-growers as fatal to the efficient working of the Boards.

Pending the establishment of the Cumberland Vine Diseases Board, and the appointment by it of an Inspector, the Department has completed the rooting up of the two small vineyards condemned by the Board appointed under the repealed Act.

In regard to the fruit-growing industry, the Department has, by its Expert, given instruction and advice in spraying and propagating of trees and eradication of insect and fungus pests, grading and packing of fruit.

A series of experiments in the cold storage of fruit, extending from 28th January to 26th August, 1893, were conducted by the fruit expert (Mr. A. H. Benson), for the Department of Agriculture, at the cold storage rooms attached to the Government meat market, at Darling Harbour; Messrs. Hudson Bros., lessees, having kindly placed a chamber of 50 tons capacity ships measurement at the disposal of the Department, free of all charge.

The system of cold storage employed was one in which an even temperature combined with a constant influx of cold fresh air was maintained, and this system, or rather principle, is the only satisfactory one for use in the case of fruit, as a merely cold air without the necessary ventilation and influx of fresh air has been proved to be insufficient to keep fruit in good condition for any length of time.

The fruits experimented with consisted of the following varieties, viz.:—Apples, pears, plums, peaches, nectarines, grapes, mangoes, pine-apples, tomatoes, and passion fruit; and were obtained from fruit-growers in various parts of the Colony.

Different materials were tried for packing, and the fruit was tested under various conditions, wrapped and unwrapped, in light cases and open well ventilated cases, and in various states or degrees of ripeness.

The average temperature maintained was 41.74 degrees, and was very evenly maintained. The extreme limit of variation ranged from 37 degrees to 51 degrees, and those extremes were only reached on two or three occasions. The ventilation was at all times satisfactory.

The general results of the experiments may be summarised as follows:—

1. Apples, midseason and late variety of pears, solid-fleshed plums, and tough-skinned, fleshy grapes may be kept in perfect condition without any appreciable loss for a period of two months, when stored in a cold dry fresh air, maintained at an even average temperature of 41 degrees to 43 degrees; provided that the fruit is carefully gathered, handled, and packed, and that all blemished fruit is discarded. Apples will keep equally as well if the temperature is raised 10 degrees, but the other fruits require the lower temperature. Two months allows for the extreme outside time required to place the fruit on the English market.
2. After being removed from the cold storage, the fruit keeps in good condition for a sufficient time to enable it to be disposed of and consumed, with only a small percentage of loss, provided that previous to its removal from cold storage, the temperature of the store is gradually raised to that of the outside air, as any condensation of moisture on the fruit, which would tend to create decay, is thereby prevented.
3. Soft fruit, such as peaches and nectarines, may be safely stored without deterioration from one to two weeks, according to variety, thereby preventing to a certain extent the glutting of the markets with these fruits during the height of the season.
4. The cost of cold storage by the method employed is much less than that at present used for the conveyance of fruit to England and the results are much better. At present the three great drawbacks Australian fruit-growers have to compete with in the export of fruit to the English market are, first, the excessive freight; second, the large percentage of loss arising through the fruit being carried without a proper system of ventilation; and thirdly, through the bad keeping qualities of the fruit when landed, which necessitates the fruit being disposed of and consumed as rapidly as possible. All these drawbacks would be, to a great extent, prevented if the fruit were carried under similar conditions to those maintained during the experiments, and a cheaper and better carriage would tend to greatly increase our export of fruit to England, which, unless such steps are shortly taken, threatens to become a thing of the past, as the prices received for our fruit in London are entirely prohibitive in the majority of cases. No doubt this is not always the fault of the high freight and bad system of carriage employed, but is often largely due to the carelessness of the growers or shippers themselves in sending worthless and inferior fruits; and this was shown many times in last year's shipments of Tasmanian apples. The English market wants one class of fruit only—the best—and that fruit put on the market in the best condition and most attractive manner; and if growers or shippers try to palm off any inferior grades they will get left every time, as the English buyers will not have them, except at very low rates.

The value of these experiments to the New South Wales fruit-grower, is that by this means the Government have practically shown the conditions that it is necessary to maintain in order to successfully keep fruit in cold storage, and also what fruits are most suitable, and what care is necessary to be taken with the grading-wrapping and packing of the fruits so as to render them suitable for cold storage, especially

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as adapted to an export trade. It is to an export trade that the fruit-growers must eventually look if the industry is to take a prominent place in colonial industries; and by showing how the export of fruit may be most economically and successfully carried out these experiments are likely to be of great value to the fruit-growers and to the Colony in general.

Experiments have been made in lemon-curing for export, and experiments with various fungicides and insecticides have also been made.

The Department has long since recognised that as a first step towards securing a satisfactory market for citrus and other green fruits in England, it is absolutely necessary that the quality of the fruit grown be improved, and that such fruit shall be properly graded, packed, and attractively got up. Efforts have been made to impress this fact upon the fruit-growers, but, of course, it is a work of time to effect an important change of this kind. In the meantime, as demonstrating the correctness of this view the Department has recently received details of the cost attending the placing on the London market of a shipment of 350 cases of oranges shipped as ordinary cargo, and the price realised there. The average cost per case was 4s. 8½d., and though the fruit arrived in good condition, the price realised was 3s. 6½d. per case. The charges are doubtless too high, and steps are being taken by the Department to secure, if possible, a reduction, but the loss on the shipment above referred to is mainly due to the quality of the fruit. It has been suggested, that before we can hope to build up a trade for our fruit in London, it will be necessary to have an agent there to see that our produce is properly marketed, and it is also urged that until we have packing companies centrally located, as they have in California and Florida, we shall not have our fruit sent to market in the most attractive form. It is quite certain that we can grow fruit equal to any in the world, and it is equally certain that if we send none but the best quality of fruit properly graded, packed and got up, we shall soon be able to establish a reputation both in England and in Canada that will command a very extensive and profitable trade.

Preparations are being made in the experimental farm at Wagga Wagga for establishing an orchard and vineyard, at which a complete course of instruction in fruit-growing nursery-work, planting out, pruning and cultivation, and after the fruit is grown, drying, canning, jam, and jelly making, raisin-making, prune manufacture, as well as grading and packing for market will be imparted.

Towards the accomplishment of this project a large number of scions of different varieties of fruit trees received from Victoria have been taken to Gosford Nursery, and worked and set out there ready for removal to the Wagga farm in June next. A large collection of American varieties of fruit-trees have been obtained from the Californian Nursery Company, and have been planted temporarily, until in due course they also can be planted out at the Wagga farm. The above-mentioned trees are all true to name.

Good work has been done by the Pomological Committee in connection with the classification and naming of Australian-grown fruit.

The objects of the Pomological Committee are as follows:—

- 1st. To endeavour to correct by degrees our very mixed fruit nomenclature.
- 2nd. To take note of, and publish descriptions of any new fruits—especially locally raised seedlings.
- 3rd. To determine the value of, and suitability of different fruits, for the various parts of the Colony.
- 4th. To take note of any other matters of interest connected with the fruit industry. The Committee held several meetings during the autumn of 1893, but it was not until the fruit season of 1893-1894 commenced that the work of the Committee got fairly into shape.

Since the first meeting, held on 16th November, 1893, meetings have been held on the second and fourth Thursdays of each month, and will be continued as long as there is any quantity of fruit to come forward. Numerous samples of fruit have been submitted, something like 400, since the Committee began work, and of these descriptions and drawings for future reference have been taken, where typical specimens have been available. Arrangements have been made with the Railway Commissioners whereby fruit submitted to the Committee is now carried free, and forms and labels have been distributed to a number of fruit-growers. A complete record of the proceedings of the Committee is kept, which will be of great value for reference purposes. It is the intention of the Committee to publish eventually a work on Australian Pomology, on lines similar to the works of Dr. Hogg and Chas. Downing.

As regards tobacco the work done by the experts is as follows:—

During the past six months Mr. S. Lamb has been busily engaged in visiting some seventy places in New South Wales, for the purpose of meeting the farmers, and giving instruction in the cultivation, curing, classing, and packing of tobacco, both on their homesteads and by means of lectures. He has visited, among other districts, the Richmond River, New England, Gwydir, Hunter, Hawkesbury, Narrabri, and Tamworth.

The lectures, which were very well attended (at Gunnedah more than fifty people being present), were followed by animated and interesting discussions upon the future development of the tobacco industry.

The result of this instruction may be gathered from the fact that no fewer than 351 farmers are carrying out experiments with a number of new varieties of tobacco seed imported from abroad by the Department, many applications having to be refused in consequence of the supply of seed becoming exhausted.

Mr. Lamb's attention will be fully occupied for some time to come supervising, as far as possible, the gathering and curing of the leaf obtained from these plots.

One of the most serious obstacles Mr. Lamb has had to combat is the prevalent opinion that the Excise duty is the cause of the present low price of tobacco, whereas the real cause has been over-production, and a consequent glut of the limited Colonial market. The true remedy for the depression therefore, lies in the improvement of the tobacco grown, so that it may be readily saleable in the many foreign markets which are open to our trade.

Mr. Lamb has also afforded information to many country newspapers, which has enabled them to publish interesting articles on the tobacco industry. These are tending to awaken an interest in the matter, and many farmers are making arrangements to plant for export next year.

At Inverell and Bendemeer Mr. Lamb found tobacco leaf which, though produced under disadvantageous conditions, was of a very excellent quality for cigarette purposes.

Mr. Lamb visited the Department's tobacco plots at Moonbi, Gosford, Richmond, and Campbelltown, at each of which a large quantity of acclimatised seed of Havana, Virginia, and other varieties will be available for distribution next season.

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At Moonbi the experiments were carried out on a more extensive scale, and a curing-shed is being erected, in accordance with Mr. Lamb's instructions.

Mr. Sutherland has been engaged giving advice to farmers as to the best methods of growing, curing, and preparing their tobacco for home and foreign markets, and also in carrying out a demonstration at Tumut in air-curing, and the subsequent process, after the American fashion. The latter work was much impeded owing to the want of proper accommodation, and to the fact that only Chinese labour was supplied during the early part of the experiments, and the Chinese were found to be very hostile to the introduction of the new and improved methods of curing, as practised in America.

Mr. Sutherland was unable to personally supervise the harvesting operations, and as a consequence a large percentage of immature leaf was housed against his orders; besides which, much damage was done to the crop from the careless way in which it was handled.

In the stripping and sorting of the leaves Mr. Sutherland obtained the assistance of Europeans, who took a keen interest in learning the improved methods adopted.

The tobacco-shed was merely an open-sided iron-roofed building, the walls being temporarily enclosed with loose-hanging strips of flimsy hessian, which was penetrated by the rain.

The perfect command of the internal atmosphere, so requisite to good curing, and subsequent handling of the tobacco, was, therefore, quite unobtainable, but it was considered desirable to test the efficiency of existing appliances.

The results, though, not altogether unsatisfactory, conclusively show that such structures as described are perfectly worthless for the purpose of tobacco curing, and the improvements which the Government so earnestly desire to see effected in the tobacco industry can only be brought about by the use of improved buildings, such as are employed in the most advanced tobacco-growing countries.

Some 400 or 500 lb. of this crop were prepared, but a deal of it was destroyed by the rain, owing to the need of proper accommodation.

Still, the advantages of the system adopted were fully shown by the fact that the first consignment of leaf sent to Sydney (53 lb.), sold for 7½d. per lb., chiefly on the merits of its "put up." A glut occurred on the market, however, shortly afterwards, and it is doubtful if the latter consignment forwarded will realise more than 4d. or 4½d. per lb. This again points to the urgent necessity for opening up a foreign market, and it will be interesting to see what price will be obtained for a case of the same tobacco which was forwarded to England from Tumut.

Much of Mr. Sutherland's time was occupied in visiting the surrounding farmers, and giving them instruction in connection with the experimental plots of the new varieties of seed introduced by the Department, which they are cultivating.

It is gratifying to note that Dr. Mason, of Tumut, raised plants of seven of these varieties sufficient for 20 acres, and if the season is favourable Mr. Sutherland anticipates having sufficient leaf to thoroughly carry out the proposed curing experiments in the new shed, which is now erected.

Owing to the low price of tobacco in the local market, and the complicated labour necessary for its cultivation, together with the better prices obtainable for wheat and maize, the Europeans are almost universally adopting the latter crops, to the exclusion of tobacco.

The industry is, therefore, at present practically in the hands of the Chinese, who grow the plant fairly well, but absolutely refuse to adopt the improved methods of curing, which are necessary to ensure increased prices.

Mr. Sutherland visited the Albury district during October, where the industry is also chiefly in the hands of the Chinese, and here again the leaf had been cut in an unripe stage—some very green. The so-called curing had been carried out in the usual unprotected shed, and the mass of leaf was uniformly bad. This is the more remarkable as the local circumstances of soil and climate are favourable to the industry.

Mr. Sutherland subsequently visited Richmond College, Gosford, and Rooty Hill. At the former place plants of the sixteen varieties of imported seed had been successfully grown, and were being cultivated for the production of seed.

During October and November "blue mould" appeared in the Tumut district, and repeated spraying with eau celeste and Bordeaux mixture were made by Mr. Sutherland. The results clearly showed that if systematic spraying had been made with these fungicides upon the first appearance of the plant above ground, as advised, the "blue mould" would have been effectively kept in check.

While in Sydney Mr. Sutherland took the opportunity of interviewing a number of the leading merchants regarding the possibilities of the tobacco industry. The opinion was freely expressed that with the favourable conditions existing in New South Wales if proper attention were given to the details of curing, sorting, and packing, it would lead to an immediate improvement of local prices, besides enabling the merchants to open up an export trade, which they are unable at present to do with any prospect of success.

Mr. Sutherland suggests the bestowal of a small bonus per lb. of leaf for consignments selling in foreign markets for (say) over 6d. per lb, which inducement, coupled with the opportunities now afforded to the growers for instruction in improved methods, would, he believes, give a great impetus to the trade.

In accordance with permission granted by the Minister, experiments have been made to test the values of our citrus orchards for the production of essential oils, &c., suitable to the manufacture of perfumes and flavouring essences, &c. The matter was placed in the care of Mr. Dunncliff, and I was fortunately enabled to secure the co-operation of W. H. McKeown, Esq., of Pymble, in the work, who generously placed his orchards at the disposal of the Department. Having made arrangements for the necessary apparatus, these were fitted up, and, with the assistance of Mr. B. G. Hardy, a practical distiller and perfume-maker, and two children to pick leaves, operations were commenced on 10th September. These operations were continued for over four months, during which Mr. Dunncliff attended at the orchards on over fifty separate days, and at both early and late hours.

The experiments have clearly shown that plenty of profitable employment and much wealth may be obtained from sources which have been hitherto neglected or unrecognised. Some fine specimens of essential oils have been produced, and much valuable information has been obtained, which may serve as encouragement or warning to those disposed to take up the work as a permanent industry, and which will be fully set forth in the report on the same now in course of preparation.

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These experiments were visited, almost daily, by many persons interested in the prospect of new sources of industry, the opening of fresh avenues for trade or safe investments for capital, and received many complimentary expressions of opinion on the value and usefulness of their character. The local and immediate results of these tests, Mr. Dunnicliff anticipates, will be some extensive plantings of the Seville orange next season, together with increased care in the cultivation of orchards generally.

In order to arrive at an estimate of the value, from a commercial point of view, of the oils and perfumes prepared in this series of tests, Mr. C. S. Taylor, of the firm of W. J. Bush & Co., distillers of essential oils, &c., &c., London, Grasse (Alpes Maritimes), Messina (Sicily), and Melbourne, was invited to inspect samples, and the following is a copy of a very interesting and encouraging letter received by the Department from that gentleman respecting the oils and perfumes brought under his notice:—

Dear Sir,

"Hotel Australia," Sydney, 17 February, 1894.

Referring to my visit to your office this morning, made, I understand, at the request of your Department, I cannot too deeply commend the spirit and enterprise displayed by your Department in their endeavour to promote new industries, having for its object the promotion of the interests of the people of this Colony. I have pleasure in testifying, as one having had a long and special knowledge of essential oils, both to the skill and merit displayed by you in relation to the experimental drawing of certain essential oils from raw materials grown, I understand, under the auspices of your Agricultural Department. These comprise oil of petit grain, oil of mandarin, oil of bitter orange, oil of sweet orange, oil of lemon, and oils obtained from the leaves of the lemon and orange trees.

Considering the very crude appliances at your disposal, and other difficulties with which you have made me acquainted, and with which you had to contend, the samples submitted as "first attempts" are "very creditable productions," and, while not equalling the Sicilian, nevertheless point in the right direction for further development in the near future.

The two leaf-oils* shown me are unknown to commerce, hence they would have to force their way into permanent existence.

It should not be lost sight of that every country possesses in itself certain climatic advantages over that of others (simply from its geographical position) for the culture of raw material, from which manufactured goods are produced. New South Wales, being particularly well favoured in this respect, should, in my opinion, have much to give the outer world generally, and the English-speaking people in particular, in the way of new essential oils and perfumery, drawn from some of its strongly-odoriferous plants and flowers.

Your Department and those embarking in the industry should not be daunted by a few apparent failures in the "first attempts"; but, as all experience should tend towards ultimate success, so in this industry experience alone can bring great results.

My firm, Messrs. W. J. Bush & Co., of Distillery-lane, London, and 170, William-street, Melbourne, will always be glad to do what they can in furthering the commercial aspect of this most important question.

I am, &c.,

C. SANSOM TAYLOR.

* These were the oils of mandarin leaf and sweet orange leaf.

In respect to special plantings of flowers for perfume purposes, the Department has made a beginning by setting out at the Hawkesbury Agricultural College several hundred strong clumps of the tuberose, kindly presented by Messrs. Pearce Bros., florists, of this city. Beyond this we have not yet gone, but there is a continuous demand for reliable information, based upon local experience, which can only be obtained as the Department is enabled to proceed with experiments in this section of the industry. Awaiting this knowledge we have from the country many indications of an intention to immediately prepare land for this particular work, which it is thought may be safely entered into by careful men, with a certainty of success.

Further, in connection with this work, it may be interesting to mention that Mr. Dunnicliff prepared for, and took charge of an attractive exhibit at the recent United Horticultural Societies' Show at Prince Alfred Park, where each day and night he attended and explained the various processes to some scores of visitors. The exhibit attracted a good deal of attention, and curiously enough appeared to possess greater interest for the foreigners present than for our own people, judging by the questions asked. Mr. Dunnicliff also prepared the samples and explanatory circular regarding essential oils and extracts, which the Hon. Mr. Mackenzie Bowell was kind enough to take charge of on his return to Canada, as well as duplicate samples and notes which were sent to Messrs. Oppenheimer Bros., of Vancouver, and it is thought that in that country there is ample scope for products of this kind to create a very considerable and profitable branch of trade.

With a view to demonstrate that sericulture may be made a suitable and profitable industry in this Colony, the Government has secured the services for a term of years of Mr. Charles Brady, who is regarded as the most experienced sericulturist in New South Wales, to give instruction in all the branches of sericulture, including the selection of mulberry-trees according to the soil and climate in various parts of the Colony, and the treatment of such trees, in order to produce the requisite kind of leaf for feeding worms in their several stages, the means to be adopted to procure healthy and suitable graine, and the best methods of preparing graine and cocoons for market. Preparations are being made for the establishment of mulberry plantations in suitable localities, but in the meantime the Department has secured for a term of years the plantation at Booral, belonging to the Australian Agricultural Company, so that instruction may be given without delay, and also that the valuable parcel of graine brought by Signor Martelli from Italy, and presented by him to this Department, may be at once provided for.

It seems somewhat surprising that no general efforts have been made by settlers in this Colony to vary their crops to any considerable extent, or to give attention to the production of small auxiliaries to the main crops on which dependence is placed for a livelihood. This is probably due to a want of knowledge, for many of the persons who settle on the land are entirely ignorant of farming or the production of crops. Even amongst many of those who have had experience, there seems to be an entire absence of economy in not raising a sufficiency of (or, perhaps, not any) wholesome and useful products for their family's consumption. Take, for example, coffee. In some of the warmest districts it would be quite possible for every family to grow sufficient for its own requirements, and some to spare, and the time occupied in this work would not be missed. Again, the growing of fruits and vegetables is strangely neglected, and so on with many other things which might add considerably to the comfort of the family, and considerably lessen the cost of living. Occasionally, hard-working thrifty families are to be met with, generally foreigners, who produce on very small areas, nearly sufficient, or quite sufficient, for their needs, with the exception of clothing and groceries. Grain and roots are grown for the feeding of pigs, cows, and poultry, and bacon and pork are cured for use. A few bees produce ample supplies of honey. A fruit garden of no very great extent provides sufficient fruit for drying and making into

preserves to last through the year, and milk, butter, and cheese are always available. Such economy, however, is unfortunately only too rare, and unaccountable indifference and carelessness seem to pervade a considerable section of the farming population.

It is probable that many small industries might add considerably to the farmers' income, if taken in hand by them intelligently, and, it is reasonable to think, a great deal of fairly light employment might be given to poor women and also to many men who are physically or mentally incapable of hard hand or arduous head work, and who are either the recipients of charity or next door to it. Amongst these industries may be mentioned silk culture, scent farming, and bee culture, all of which are likely to prove sufficiently profitable to give employment to many persons. The success of silk culture will depend entirely upon the extensive planting of the proper varieties of mulberry. It is simply a matter of providing food. When this is forthcoming in abundance the industry will prosper and may extend to considerable proportions, as it has been proved that the climate is admirably suited to the mulberry silkworm, and silk of the best quality can be produced here. The scent farming, too, is likely to succeed well and become profitable, judging from experiments made by the Department. Bee culture is gaining ground rapidly in the Colony, and many persons who have mastered the art of managing bees have found this small industry to be profitable. There are many other things which might be successfully combined with the above, such as the growing and making arrowroot, olive growing, osier willows, the caper, broom corn, chicory, flax and hemp, the growing of nuts, including the ground nut, oil plants, fruits for drying, &c., according to locality.

There are other crops, too, well worthy the attention of farmers to produce on a large scale, such as the growing of barley, hops, and fibre plants, such as flax and hemp, for if these can be produced of the very best quality, the demand is likely to be considerable. With our varied climate and soil, together with proper management and good seed, that excellence should be obtained.

Pig raising, for bacon, should be a profitable industry for export purposes, as the best of food can be cheaply raised. Such an industry has attained enormous proportions in the United States of America. Every small farmer should be able to raise a few pigs.

Hawkesbury College and Farm.

The progress made at the Hawkesbury Agricultural College during the past year has been eminently satisfactory, fully realising in its results the anticipations entertained concerning it at the commencement of the year.

The fifth session of the institution opened with 48 students, 15 of whom formed the diploma class, 11 the second session, and 23 the first session students.

Early in the year, on Saturday, the 11th March, the first diplomas were presented, and the two initial years of the work of the College, which was necessarily accomplished under very difficult circumstances, was found to be productive of very gratifying results. Eight students had won their diplomas, and were presented with them by the Minister. Through the generosity of Sydney Burdekin, Esq., M.P., each student receiving his diploma was presented with a silver medal, suitably inscribed. This generous act of Mr. Burdekin's is, upon that gentleman's unsolicited promise, to be repeated annually.

Among these diploma men the dux of the College, Student Henry Shute, received the Ministers' gold medal, which is awarded to the best student for practical work upon the farm, and the gold medal presented by the Principal to the dux of the College. This student subsequently accepted the position of experimentalist on the College farm.

Another diploma student, Elliot John Rien, who took special prizes, has been engaged to take care of the bees and poultry. It is gratifying to find that erstwhile students have so amply realised the benefits of the institution as to qualify themselves to be enrolled among its trusted officers.

The presentation of the first diplomas was honoured with the presence of, in addition to the Hon. T. M. Slattery, the Hon. John Kidd (Postmaster-General), Messrs. Burdekin, T. Waddell, R. Barbour, C. J. Jeanneret, and J. Stevenson, M's.P., P. H. Ridge, Esq., the Mayor of Richmond, Professor Shelton (Queensland), and Professor Lowrie (South Australia), Mr. A. Pearson, of Victoria, Mr. Farrer, of Queanbeyan, and the Rev. Thompson, of Tasmania (the five last-named gentlemen being members of the Sub-committee of the Rust in Wheat Conference), A. Bruce (Chief Inspector of Stock), T. Collier, (Mayor of Waterloo), A. Rogers, J.P., A. Redwood, J. L. Purves, J. T. Wiltshire, G. L. Matheson, J. Ross, W. Bloxham, and the Rev. Principal J. Kinross from Sydney, the Revs. Dr. Cameron, Jas. Kinghorn, B. Keenan, and other distinguished residents of the district. I also had the pleasure of being present. The company completely filled the hall of the School of Arts.

The improvement in practical work during this session by contrast with the previous one was very marked, and the progress of the students, taken as a whole, was a matter for congratulation.

The sixth session commenced on the 15th August, when there assembled a full complement of students, numbering 53, 1 of whom was non-resident. The diploma class numbered 12, the third session 8, the second session 16, and the first session 16. Of the 10 students who sat for their diploma examination, 8 passed. In addition, 2 ex-students were allowed to sit for this examination, 1 of whom passed.

The results of this, the second diploma examination, were highly satisfactory. The examiners of the candidates for the diploma for both the class and the practical work on the farm were gentlemen of distinction and ability, outside altogether of the College, and even the Department. They set the several papers, and subsequently examined them, allotting the marks, and, as each paper was only recognisable by a number, the name of the candidate was unknown, and a decision on pure merit was secured.

The gentleman who set and examined the paper on "Agriculture," Professor W. Brown, the Principal of the Dookie Agricultural College, Victoria, reported of the papers submitted to him, "Several are exceptionally good, and most of them carefully got up. The thorough teaching of details is marked." The reports of the other gentlemen who set and examined their several papers were of a correspondingly satisfactory nature, and one of them states he noticed a marked improvement upon the previous year.

In their farm, orchard, and dairy work, the gentlemen who examined them reported in brief as follows:—F. B. Kyngdon, Esq., M.R.A.C., writes: "I spent many hours on the farm with the students, and inquired into every branch, more especially from a strictly practical and economical point of view." Mr. Edw. Whitaker, who examined these students in orchard work, says: "Having examined these students in practical orchard work, such as grafting, budding, pruning, and the general working of an orchard with a view to profit, I find that they possess a satisfactory knowledge of the subject."

The

The report of D. L. Dymock, Esq., J.P., of South Coast (the gentleman who examined these students in dairying), is eminently satisfactory, and shows that (to quote his words) he was pleased to report "a general interest in their studies for a definite purpose."

The temporary expedients inseparable from the use of two buildings, the distance of the students from the scene of their practical operations, the absence of the necessary farm buildings and appurtenances, are still the difficulties this institution has to contend with, and yet the Principal, supported by his staff, is enabled to make advances of a most encouraging nature. With the termination of the next year of college work, it is anticipated the buildings and furnishings of the College and farm may be completed, and the fifth year of the existence of this excellent institution be inaugurated with a completeness in its appointments worthy of the institution, its objects, its Principal, staff, and students.

An experiment made during last session of receiving a young lady non-resident student for special branches of study thoroughly practical, in apiculture and poultry-farming, has encouraged the Department to yield to the desires of several, and anticipate the desires of others, in forming classes and sessions for non-resident students, male and female. The lady referred to (Miss Manning), after two months' tuition and practical experience, passed a very creditable examination in the management and practical working of an apiary, and received a certificate of her qualifications and abilities to manage one from the Rev. J. Ayling, the Vice-President of the Bee-keepers' Union of New South Wales, who conducted a *viva-voce* examination, in addition to a very exhaustive written one.

Arrangements are being made, and in part approaching completion, in the erection of suitable buildings, &c., to afford the necessary facilities for special instruction in dairying work, bee and poultry farming, which, it is believed, will meet a widespread and recognised want.

A desire, too, for short sessions has been expressed by many who are anxious to gain the advantages of a practical instruction in special branches, farm work, &c., and who cannot afford either the time or cost of the two years' complete College course.

It is intended to make provision to meet this requirement in the organisation of this institution in the near future, so that those desiring it can receive as non-resident students a short session in dairying work in all its branches, orchard work, apiculture, and poultry-farming.

During the year the operations on the farms have been carried on with a fair proportion of success. Greater results might have been accomplished but for numerous drawbacks.

Farm.

A most promising crop of melons and pumpkins, together with one of sorghum and maize, was practically destroyed by a terrible hailstorm which occurred on the 18th January of last year, involving the district in the loss of thousands of pounds worth of produce, in which the College Farm unfortunately participated to a great extent. Following this, later on during the year, the baneful effects of a prolonged drought, broken by sudden heavy tropical rains, told terribly on a fine promising heavy crop of oats and wheat, which became so luxuriant that the rust set in to such an extent, and with such rapidity, that it had to be cut for hay immediately.

This hay was harvested and stored in a first-class hay-shed erected for the purpose of conserving the hay produced upon the farm.

One hundred and thirteen tons of first-class swedes and mangolds were placed upon the market during the year, and realised full market prices. Two acres of cabbages yielded the fair return of 10 tons to the acre. Four acres of potatoes have given a return of 16 tons.

There are 25 acres prepared and sown with sorghum, which is now standing, and 55 acres planted with maize, which promises a good yield.

Orchard.

The orchardist has during the year replaced 1,000 vines, planted 300 pear-trees, 425 orange and lemon trees, 1,000 apple-stocks in the nursery for budding and grafting, besides peach, pear, and quince stocks; also a bed of tuber roses; all of which are looking well. The usual work of pruning and budding has been carried on. Five acres have been subsoiled for vineyard, levelled, pegged, and planted out. Another 5 acres have been planted out with pumpkins, melons, and vegetable-marrows, the yields from which are excellent.

The vines planted only two years ago are now bearing, and the fruit is pronounced to be of a first-class quality.

Experimentalist.

The experimentalist has been occupied during the year in testing the relative values of seeds, manures, and the various methods of cultivation.

Among his numerous experiments with grain may be cited an experiment made with sixty-five varieties of wheat reputed to be rust-resisting. Every care and attention was given this experiment, and the result was that no sample of milling-wheat was obtained from amongst the lot, each one being more or less destroyed by rust.

Another interesting experiment was made in the direction of sowing wheat at depths varying from 1 to 8 inches. Only 100 grains in all were sown. It was found that of the seed sown at the depth of 8 inches, only 8 per cent. germinated; while of that sown at the depth of 2 inches, 74 per cent. germinated. The seed planted at a depth of 1 inch was destroyed by birds. The weight of the crop harvested was shown to average from 1½ ounces from the seed planted at 8 inches to 149 ounces from that planted at 2 inches.

The value of manures was tested by numerous experiments, which have proved of the highest educational value, and of which one may be mentioned. Peas were tried with and without manure. The result showed those without manure yielded 7 bushels to the acre; those with manure, 12 bushels to the acre.

The value of all these experiments educationally considered is great, and they are conducted with the greatest fidelity and care.

The following are being grown on the experimental plots:—Cow-pea, chick-pea, prickly comfrey, tobacco, buck-wheat, salt-bush from seed, and many other plants of a kindred nature.

Dairy.

Dairy.

Extensive experiments have been carried out with regard to the effect of different feeds upon the milk production of the cow, but the results, although of a highly educational value, can hardly yet be considered conclusive. The importance of this work is acknowledged to be sufficiently great to warrant a continuation of the experiments during the present year.

The dairy herd consists of 124 cows and heifers, among which are 100 of the famed Illawarra dairy cattle. At present there are 60 cows being milked daily. There are four bulls, including the Ayrshire "Warrior," and five small bulls together with thirty-three calves.

The dairying industry will be most sedulously advanced on the College Farm.

Bees and Poultry.

The apiarist has thirty-seven full colonies of bees, seven nuclei, and two swarms of native bees. All the bees are being Italianised, but owing to their close proximity to other swarms of black bees in the town a larger percentage of the queens are mis-mated. The removal of the bees to the farm will, however, greatly relieve this difficulty.

The poultry consist of various breeds:—Houdan, Langshan, White Leghorn, Brown Leghorn, Spanish, Plymouth Rock, Golden Wyandotte, Silver Wyandotte, Light Brahas, Colonial Game, Black Hamburgh, and a number of ordinary barn-doors.

Among the ducks are Black Muscovy, White Muscovy, Peking, Aylesbury, and a number mostly Rouen and crosses.

There are two incubators, "Hearson," one a 50- and the other a 200-egg; but owing to the limited space of the temporary premises the work of breeding has been greatly checked.

Improvements.

These are as follow:—About 15 acres have been thoroughly pipe-drained, and progress is still being made with the main drain for the purpose of more effectually draining the farm-lands.

Stock-yards, cow-sheds, and subdivision fencing have been constructed. The saw-mill has been kept busy preparing the hardwood required for capping stock-yards, erecting milking-sheds and other buildings now in progress on the farm. A large and substantial hay-shed covering a space of 90 feet by 53 feet has been erected and filled with hay, as before mentioned. A cottage for the orchardist, weather-board roofed with iron, plastered inside, and containing seven rooms, has been completed, and is now occupied by that officer. A milking-shed, orchardist's tool-house, and storage have been built. A cottage for the dairy expert, three cottages for workmen, a portion of the square of farm buildings, and a residence for the Principal are in progress, and it is anticipated will be completed by the end of May.

Murrumbidgee Experimental Farm.

On the Murrumbidgee Experimental Farm during the year, under the management of Mr. John Coleman, there has been erected about $9\frac{1}{2}$ miles of boundary seven-wire fence, six plain No. 8 best steel and one barbed wire along the tops of centre of posts.

Posts are placed 7 feet apart, 2 feet in the ground, and $4\frac{1}{2}$ feet out, squared up 7 inches wide by 4 inches thick. Straining-post every fifty-sixth post, 3 feet in the ground, with a stay on each side for extra strength, thus making a thoroughly neat and substantial fence. In addition, the experimental paddock of about 50 acres has been enclosed with rabbit-proof wire netting.

Fourteen pairs of double gates have been erected the same pattern and style as those at the Hawkesbury College, painted with three coats of paint, and completed in a workmanlike manner. Three pairs of temporary scantling gates are erected to enclose the farm from the Common until such time as the boundary-fences are completed.

All that portion proposed for orchard and vineyard site, about 80 acres more or less, has been cleared. Also experimental paddock on the western side of Sister Hills, about 50 acres more or less, 30 acres of which are cleared and ploughed; the remainder is grubbed, and is now being cleared and ploughed as quickly as our strength will allow.

All the boundary-fence lines, also roads, are cleared in readiness for erection of fences in the future.

I may add that all the timber grubbed has been utilised for fencing, and the firewood carefully saved, either for market or for future use if required on the farm.

All the vineyard and orchard site has been ploughed 12 inches deep, and about 50 acres have been cross-ploughed 9 inches deep. All has been harrowed and cross-harrowed, to give it the benefit of the sun to air and sweeten the soil.

The 30 acres previously mentioned in the experimental paddock have been kept thoroughly harrowed down after the plough, so as to have the full benefit of the sun for next season's wheat crop.

A trial shaft has been sunk 16 feet in depth, and the recent showers we have had filled it with water, which stands well, showing it is good soil to hold water.

The tender for the tank is now under consideration.

A trial shaft is now being dug at bottom of vineyard site to try for water. A little was found at 26 feet in depth, but not sufficient for good supply. It is hoped that a better spring will be found at a lower depth.

In commencing operations we were late in the season, consequently the experimental wheats were not planted until late in May and beginning of June, thereby not having quite so good a chance as could have been wished.

There were planted, under the direction of Dr. Cobb, about 400 varieties of wheats, and, by a little extra cultivation and care during their growth, they came out at harvest fully equal to the expectation of Dr. Cobb, and were all harvested in good condition.

They are stored in the granary at Estella, in readiness for autumn sowing.

The few varieties of wheats tried separate from those put in under the direction of Dr. Cobb came out very satisfactorily.

Two varieties of oats were tried. Algerian, which only came out very moderate, and Carter's Royal Cluster, which is without exception the best variety of oats seen by Mr. Coleman. It is proposed that these should be all sown this season for distribution next year amongst the farmers.

Two varieties of rye were sown. Common English and Arctic, the latter being by far the best, producing nearly double the crop of the other variety.

Mr. Coleman considers malting barley stands next to wheat in importance for this large district, and he states he has seen samples produced here equal in quality to any that the Colony, or even the world, could grow, and thinks in a few years it will become one of the leading cereal crops in the Wagga Wagga district.

Carter's Prolific, a first-rate malting barley, was tried, and had a fair crop, which would have been much better if sown earlier. Goldthorp, another good variety, did not germinate well, it is thought through the seed being heated. About sufficient of the latter variety to sow 1 acre next season has been saved. Of the former variety sufficient seed has been saved for 4 or 5 acres.

Other varieties of barley were grown—Algerian and Cape; also Skinless Barley, which is used for Pearl Barley. All these produced good crops, and are worthy of cultivation.

All the peas grew well, and would have produced very heavy crops if sown earlier.

Early sowing for peas, Mr. Coleman thinks, is the true secret of growing heavy crops in the Wagga district. The following varieties were planted:—Maple, Dunn, Black-eyed Susan, White Field, Blue Imperial, Blue Prussian, and Yorkshire Hero.

All these were harvested in good condition, and saved for future sowings if required.

The following varieties of potatoes were planted—some on the 11th August, and the others 12th September, the first plantings producing very much the heaviest and best crops:—Brownell's Beauty, White Elephant, Imperator, and Magnum Bonum, "all good heavy croppers"; Flourballs and Early Rose only moderate and diseased. Myatis Ashleaf, Scotch Greys, Flounders, and Rubys a failure, not worth the planting. This ordinary forest soil without good cultivation is too raw and green to grow successfully certain varieties of potatoes.

On 30th August 16 varieties of tobacco were planted, but only three or four sorts germinated, and I should think not more than thirty to forty plants grew; most of these have dwindled away and died; the soil seems too poor for tobacco. In this district it is grown on the rich alluvial river-flats, and only in small quantities, by Chinamen. It was very much more extensively cultivated a few years ago, but was found to be a non-paying crop.

A team of eleven yoke of oxen, two draught-horses, harness for same, farm-dray, one double-furrow digging-plough (Howard's), and a set of three harrows were purchased last December, and are now at work clearing and ploughing the remainder of experimental paddock in readiness for autumn sowing. The great drawback is want of water; it is necessary to take all stock every day to the river to drink, occupying at least two hours daily, thus delaying our work very considerably.

All the cereal crops grown on the farm are carefully stored in granary at Mr. Coleman's residence, in readiness for sowing when required.

The following work is intended to be done during the coming season:—

To complete the boundary and road fences about $4\frac{1}{2}$ miles more is needed, and an extra mile of fencing will be required between the land of W. Mathews and the orchard and vineyard before the rabbit-proof netting is erected.

Five pairs more gates will be required for roads and entrance to paddocks when fence is completed.

In addition to the tank about to be dug, one will be required in central paddock below the experimental paddock, of about the same size and capacity. Stables and implement-sheds are much needed, and some additional implements will be required for next season.

Mr. Coleman suggests that special attention be given to growing on this farm the very best varieties of pure seed for distribution at a fair price amongst the farmers. First-class wheat, oats, and malting barley can be grown to perfection throughout this large district.

During these last few days repeated applications have been received from large wheat-growers for good early varieties of seed-wheat; and it is thought that if good seed is grown there will be a ready sale for it at a price that will cover the working expenses of the farm.

The work done on this farm reflects the greatest credit upon the manager, Mr. John Coleman.

Experimental Farm, Richmond River.

The area set apart for this farm is situated at Wollongbar, on the southern side of the road from Lismore to Ballina, and midway between these towns. It has a considerable frontage to the main road, and also a frontage to Merom Creek. The soil is typical of the "red soil" of the important and large tract of country lying between and about the Richmond and Tweed Rivers, locally known as the "Big Scrub."

About two years ago, 50 acres was felled and the timber burnt off, under the supervision of this Department, but no further steps were taken to establish the experimental farm until in November last Mr. W. S. Campbell proceeded to the land and commenced operations. Tenders were accepted for the stumping and ploughing of 8 acres, which area will be quite sufficient at present for autumn planting. The work of preparation of the soil will be most thorough, to determine whether good cultivation will not prove far more profitable than the slovenly system which at present obtains generally in the district. Mr. M'Keown, who was engaged for some time at the State Nursery, Gosford, has been appointed to the charge of the farm. He is a capable man, and takes great interest in the work.

On this farm experiments will be made to determine the most suitable fodder-plants for the district, and to ascertain the best way to manage them in the peculiar climate. This alone will be a matter of great importance, as dairying is likely to develop into a very great industry. At the present time the method of sowing grasses and fodder-plants which obtains in the district is of the rudest description.

Steps have been taken to experiment with all the varieties of sugar cane that can be procured from this or other countries, to determine their value and suitability. A number of different kinds have lately been received from Jamaica through Kew Gardens, and they have been planted, and are being attended to by Mr. M'Keown. From time to time various experiments will be carried on in planting and cultivating sugar cane, and doubtless the results will prove of considerable value.

As the future prosperity of this Colony will to a great extent depend on its exportation of produce, it is of the utmost importance that the produce raised for that purpose be of the best quality only, and suitable for British and foreign markets. From information received from exporters, it appears that the quality

quality of our citrus fruits (oranges and lemons) which have been placed on the London market is of an inferior quality, and, consequently, it cannot possibly pay the expenses connected with the packing, sending, &c.

As all kinds of citrus fruits thrive to perfection in the north-eastern coastal districts, a considerable portion of the area being prepared on the experimental farm will be devoted to the growing of plants belonging to the citrus order, to test varieties, and establish a standard orchard, where all varieties will be kept perfectly true to name. As many kinds as possible will be obtained from time to time from various parts of the world. Seedlings will be raised, and every means taken to improve quality.

Various semi-tropical, as well as many tropical plants and fruits, will be experimented with, and tested, and their suitability, or otherwise, for the northern coast district determined. The good and progressive work that can be done on this farm is unlimited, and there is perhaps no portion of the Colony where a demonstrating and experimental farm is more needed, or where it will be more welcomed. The cost of managing and working this will be but little in comparison with its usefulness.

Experimental or Trial Stations.

As showing the great advantage of having the administration of the Public Watering-places Act under the Minister for Agriculture, I may perhaps be permitted to refer to the great success which has attended the establishment of Experimental or Trial stations at some of the artesian bores in the arid country between the Darling River and the Queensland Border. The Superintendent of Public Watering-places has been able to obtain not only suitable seeds from the Agricultural Department, but advice and assistance from the officers of that Department, and it is largely due to the harmonious relations existing between the officers of these branches of the Department of Mines and Agriculture that so much useful work has been done. It is intended that experiments with new crops shall be continued from year to year, so as to practically demonstrate what can, and what cannot, be grown with profit. In this way, it is hoped that bores belonging to the Department will be let to advantage, and that the tenants thereof, as well as other occupiers of land in that part of the Colony, will be taught how to grow produce that will reduce to a minimum the disastrous effects of droughts, and will render the transit of goods practicable in all seasons of the year, besides materially reducing the cost of living. Fruit grown at these bores can be brought to Sydney fully a month earlier than from most other parts of the Colony, so that fruit-growing may, within certain limits, be a profitable industry.

Steps are also being taken to establish on a small scale similar stations at some of the public watering-places in other parts of the Colony, with a view of showing how these public watering-places can be made more profitable, whereby persons may be induced to lease them, and thus save the Department the cost of employing caretakers.

Date-palms have been sent to a number of the caretakers of tanks, who planted them. In some cases these have failed, but generally they have proved a great success. Fruit-trees and timber-trees have been planted at several of the public watering-places, and are making good progress.

In the General Report for 1891 to the hon. the Secretary for Mines and Agriculture, on the subject of artesian boring, the Superintendent of Public Watering Places draws attention to the possibilities of the north-western portion of the Colony by means of irrigation from artesian bores. This subject, so far as I am aware, had not been previously touched upon in any way. The attention of the Minister was drawn to the supply of water from the artesian bores available in excess of stock requirements, and the question arose as to how the supply in excess of those requirements could be made available for other purposes which would assist the progress and development of that particular district. Taking the experience gained in other countries of irrigation by means of artesian water, it was submitted as to whether one or more of the bores sunk by this Department could not be utilised for experimental farms, and before a decision on the matter was definitely arrived at, the question was referred to the Chief Engineer for Water Conservation for an expression of opinion on the points affecting his Branch.

The opinion of the Chief Engineer was given on the 4th January, 1892. It recapitulated the possibilities of the use of artesian water for irrigation; but he was of opinion that the scheme of an experimental irrigation farm would be less satisfactory than the leasing of the bores under special arrangement. The Director of Agriculture was subsequently addressed upon the subject, and after analysis of the soils, furnished a report based upon that analysis. He considered that it would be unwise to do more than at present to conduct experiments on a small scale. An experimental cultivation has been carried out at the Native Dog and Barrington Bores, on the road from Bourke to Hungerford, and more recently areas have been planted at the Engonia and Belalie Bores with fruit and forest trees. So far, the reports submitted have been highly satisfactory, and tend to show that the fears which have been openly expressed, that the alkalinity of the water would ultimately have a detrimental effect upon the growth of the produce, have not been realised. The Department is retaining the Barrington and Native Dog farms for conducting its own experiments in cultivation. The soils at these two farms are widely different and typical of the two classes of soil in the district, one being red loamy soil and the other black alluvial soil of the river flats. Samples of the soil were taken from the Native Dog bore after some eighteen months of irrigation by means of this water, and in only one sample out of seven could be found a trace of the alkalinity, while the growth of vegetable produce has been almost phenomenal. There are a great variety of plants cultivated at these two bores, but with few exceptions they have proved highly satisfactory. The result obtained should go far to remove from the minds of the sceptical the idea that artesian water is unsuitable for irrigation.

The following are details of the various crops planted, and the results:—

Experimental Farm at Native Dog Bore.

Farm laid out October, 1892. Operations commenced during November and December, 1892. Planting, cereals, July, 1893.

Fruit trees.—Apricots, peaches, mulberries, apples, plums, nectarines, quinces, figs, and bananas, all doing well; guavas, loquats, and citrous fruits failed; date palms and olives did not arrive at farm in good condition.

Forest trees, mostly pine, willow, and poplars.—The pines did not thrive; the willows and poplars are doing very well.

The grape vines that struck are doing well.

Maize.—

Maize.—A very good crop; togosaste seed did not germinate; calabash growing very well.

Sugar-cane.—Doing very well; planted on 20th October, now more than 3 feet high, and healthy.

Wheat.—Two varieties of wheat sown; good crop from both.

White Clover, Red Clover, Giant Hybrid Clover.—Good crop, yielding a good cutting every six weeks.

Two varieties of potatoes planted, and found to grow well.

Pop-corn.—Two varieties, Porcupine and Large White; both did fairly.

Pumpkins, water melons, rock melons, and cucumbers did very well.

Seven varieties of clover,—Bokhara, Alsike, Sutton's Giant Cow, Red Clover, Cow Grass, and White Dutch Clover,—were sown on 16th October, but this date was apparently too late, very little of the seed germinating.

Several kinds of seed, such as carob bean, ceara rubber, &c., were sown, but too late in the season to succeed.

Water was applied to all the above crops, ranging from three applications to the wheat to ten to the vines, at different times throughout the season.

The caretaker is of opinion that the results would have been very much better had some of the crops been planted earlier, so as to attain during cool weather sufficient hardihood to withstand the summer heat.

Some splendid samples of lucerne were received from this farm, indicating the suitability of the soil and district for that crop. The caretaker reports that he has been cutting this lucerne every two months for feed for working horses.

Among the samples of produce received at the Department from the Native Dog Bore were:—

Allora Spring Wheat—Sown, 16th June, 1893; harvested, 6th November, 1893; watered three times; yield, 35 bushels per acre; weight, 65 lb. per bushel. Plants exceptionally strong and healthy.

Farmer's Friend Wheat.—Sown, harvested, and watered as above; yield, 32 bushels per acre; weight, 63½ lb. per bushel.

Blount's Lambrigg Wheat.—Sown, harvested, and watered as above; yield, 24 bushels per acre; weight, 56½ lb. per bushel.

Lucerne.—Last cutting, 19 October, 1893; specimen cut, 3 December, 1893; average height, 3 feet; strong and healthy, and plenty of leaf.

Barrington Bore Farm.

Laid out about December, 1892, and the following crops, &c., were sown in July, 1893:—

Wheat, two varieties, did well.

Brown Red Clover, White Clover, Giant Hybrid Clover, succeeded very well (yields cutting every six weeks).

Potatoes, two varieties, succeeded very well.

Popcorn, two varieties, succeeded very well.

Seven varieties of clover (Bokhara, &c.) were sown, but caterpillars destroyed the plants as they showed above ground.

Maize looks very well.

Fruit trees, 200 different kinds—apricots, peaches, figs, apples, pears, bananas, pine apples, date palms, oranges, and lemons. All except the three last named doing well.

Grape vines.—A good many vines failed, but the rest are healthy and looking very well.

Calabash, doing well.

Sugar-cane, growing very well, and healthy.

As at the Native Dog Bore, the miscellaneous seeds (ceara rubber, carob bean, &c.) did not germinate, having been sown too late in the season.

All the above crops were watered—wheat, three times; clover and sugar-cane, seven times; potatoes and popcorn, five times; maize, four times in the season; fruit trees and vines, every month.

Lucerne grows well at this bore, and yields a cutting (on an average) every month.

Among the samples received from this bore were—

Lucerne.—Once watered. A month's growth of about 28 inches.

Cabbage.—Splendid sample from good crop, which received four waterings.

Specimens of onions, potatoes, and kohl rabi all very good.

Belalie Bore Farm.

The area for planting at this bore was laid out during July, 1893, and the following trees, &c., planted:—Forest trees, 747; fruit trees, 128; grape vines, 600. The forest and fruit trees were of similar varieties as those sent to Native Dog Bore. The majority of forest trees did well. A large proportion of the fruit trees and vines are doing very well. They were watered at the rate of a pint a day each until drains were laid out, in October, since when water has only been applied once a month.

Engonia Bore Farm.

This farm was laid out in July, 1893, and the following trees, &c., planted:—Forest trees of various kinds, fruit trees of various kinds, grape vines. Water was applied every two or three weeks. The greater proportion did well, and are now thriving. In October a small sample of wheat was sown, with good results.

Coolabah Tank.

Fifty fruit trees, 30 ornamental trees, including a few elms, poplars, and willows, for which the soil is suitable, 220 forest trees planted out, and the majority looking well.

Byerock

Byerock Tank

An assortment of forest and fruit trees were sent to the above tank, and also sufficient privet to form a hedge to surround the tank. This and other trees have flourished, the only failures being a few fancy varieties of pines. The bananas forwarded are now showing great promise.

Waddell Tank.

An assortment of similar trees were sent to Waddell Tank, and they are reported to be doing well.

Moongulla Bore.

Packets of seed of the Orinoco, Virginia, and Yellow Prior varieties of tobacco were sent for trial at the above bore.

The growth of the plants was exuberant, and samples of the leaf are now being cured.

Newcastle Sand-drift.

An extension to the plantation was made during July, 1893, and some young trees, consisting of *Pinus pinaster*, *Lagunaria patersoni*, and Norfolk Island pines, were planted. Between the trees Marram grass (*Psamma arenaria*) was planted in rows, as well as a row of *Arundo donax*.

The Marram grass has proved a great success, and is growing most luxuriantly, being now about 3 feet in height. The planting of this grass seems to be the most effectual means of binding the sand and preventing it drifting. The same variety of grass, planted on the steep bank facing the ocean some years ago, has grown well, and has become a dense mass. The Norfolk Island pines, *Arundo donax*, *Lagunaria patersoni*, *Pinus maritima*, and *Tamarix*, planted some years ago, have proved to be successful, and are able to stand against severe ocean winds in this exposed locality. The rubble sea-wall has been extended, and its total length is now about 6 chains. It is a great protection to the edge of the bank of sand over which the grass has now grown. But for this wall the waves would have encroached considerably. The caretaker, Mr. M'Carthy, has considerable difficulty in preventing damage to the plants by the numbers of men and boys who bathe on the beach in front of the plantations.

Forestry.

Notwithstanding the reductions in the staff the forestry operations during the latter half of the year have been conducted on a scale quite equal to those of a like period in any previous year.

The following is a brief statement of the planting and thinning operations of the Department for the year:—

Oxford Plantation.

One thousand and eighty young trees have been planted, consisting of Silky Oak, Coachwood, Blueberry Ash, Cork Oak, Citron-scented Gum, English Oak, Elm, Colonial Deal, &c.

Those planted during 1892 have been cleared round, and are generally looking well. It is estimated that the plantation now contains some 23,750 trees.

Moonbi Plantation.

An area of 50 acres was cleared, fenced, and prepared, and 8,692 young trees planted, consisting of Catalpa, Cedar, Ash, Pines, Oaks, Elms, Coachwood, &c.

The planting on this reserve has been very successful, notwithstanding the fact that operations were not commenced until very late in the season. The Catalpas have made wonderful progress, some having attained a height of 5 feet already, and other plants are doing well, the percentage of failures being very small.

Wyong Plantation.

It has been decided to abandon this site, as it is found to be subject to inundation, and to be otherwise unsuited for the purpose of a forest plantation.

Wilcannia Plantation.

Planting operations were continued on this area, but recent reports show that the work has not been attended with success. The apparent reasons for the lack of success are:—

1st. Extremely dry season.

2nd. Too many open-rooted plants sent.

3rd. Owing to the scarcity of suitable plants at the Gosford Nursery the overseer was obliged to send a great many open-rooted plants of varieties not suited to the district.

The caretaker (Constable Pyvis) reports that some of the trees planted in 1892 are, owing to the long drought, dying, although apparently well grown and strong.

Wattle Plantations.

The Wattle Plantations at Bargo, Tomago, and Oxford have been protected from fire, and otherwise attended to, and will be ready for stripping next season.

Thinning.

Thinning operations were commenced in May last on the Monma red-gum forest reserves, where an area of about 300 acres was dealt with, at a cost of £86 5s. 7d. On this area there are now growing between 350 and 400 trees per acre. Owing to the country being flooded in June the men were moved to the Wahgunyah pine forest reserve in the county of Denison, where about 1,300 acres were thinned, at a cost of £240 11s. 6d., leaving about 350 trees to the acre, representing 455,000 trees, which, when matured, and at the present market rate, would yield on this reserve alone royalty of about £51,187 10s.

Work was discontinued early in October owing to there not being any funds available to defray the cost.

It is anticipated that the timber on these reserves will be of great value to the State in a few years' time. Some idea of the value may be gained from the fact that even at the present rate of royalty charged the gum trees are worth from 5s. to 30s. each and the pine about 2s. 3d. each.

Specimens

Specimens sent to the Imperial Institute.

The curator of the Imperial Institute, who takes a great interest in the timbers of the Colony, has been supplied with the following specimens for exhibition in the Institute:—

				<i>Railway Sleepers.</i>	
Vernacular Name.					Botanical Name.
Red mahogany		<i>Eucalyptus resinifera.</i>
White mahogany		” <i>acenioides.</i>
Swamp mahogany		” <i>robusta.</i>
White box		” <i>hemiphloia.</i>
Grey gum		” <i>saligna.</i>
Spotted gum		” <i>maculata.</i>
Forest red gum		” <i>tereticornis.</i>
Blackbutt		” <i>pilularis.</i>
Tallowwood		” <i>microcorys.</i>
Bloodwood		” <i>corymbosa.</i>
Turpentine		<i>Syncarpia laurifolia.</i>
Apple gum		<i>Angophora lanceolata.</i>

Gun Stocks.

One finished and one unfinished of each timber.

				<i>Gun Stocks.</i>	
Vernacular Name.					Botanical Name.
Blackwood		<i>Acacia melanoxylon.</i>
Lightwood		” <i>peninervis.</i>
Black bean		<i>Castanospermum Australe.</i>
Coachwood		<i>Ceratopetalum apetalum.</i>
Maiden's Blush...		<i>Echinocarpus Australis.</i>
Mountain Ash		<i>Evdia micrococca.</i>
Negrohead beech		<i>Fagus Moorei.</i>
Red bean		<i>Dysoxylon Muelleri.</i>
Rosewood		” <i>Fraserianum.</i>
Pigeonberry ash		<i>Elæocarpus obvatus.</i>
Teakwood		<i>Endiandra glauca.</i>
Spotted gum		<i>Eucalyptus maculata.</i>

One hundred specimens tested by Professor Warren; sixty specimens polished, size 6 inches by 4 inches by 2 inches; twelve finished walking-sticks, each made of different timbers; 150 unfinished walking-sticks, thirty-one different kinds of timbers; seven panels, each panel made up of six kinds of timbers; one inlaid table.

Specimens of timber have also been sent to England, Germany, and British Columbia, through private persons, who are trying to open up a trade for railway-sleepers and wood-paving blocks.

Revenue.

Owing to the general depression in all classes of industrial pursuits throughout the Colonies, and the falling off in railway and other public works, there has been a considerable decrease in the returns for royalty and license fees for the last year, as compared with previous years. This has been most marked in the case of the revenue from the Murray forest reserves. These reserves usually furnish about half of the total revenue of the Department, and as Victoria is the chief market for the timber, it may be seen that the stoppage of public works in that colony has mainly been responsible for the decrease in the revenue.

The State Forest Nursery, Gosford.

At this establishment the propagation of plants suitable for street and avenue planting, and timber trees suitable for putting out on our forest reserves has been carried out as usual.

Further work was carried out upon a portion of the area not previously utilised, resulting in about an acre of ground being cleared and stumped, and a permanent cart road made to the extent of about 12 chains in length. Eighty chains of additional drains have also been made.

About an acre of land has been permanently planted with fruit-trees, named varieties, and an acre has been also planted with timber-tree seeds and cuttings of various varieties.

Three hundred and fifty young trees were planted on permanent borders.

The various shade sheds have been repaired, and new roofing of tea-tree put on them where necessary.

In order to make more room for potted plants, and concentrate the sphere of operations, one new shade shed for pot-plants was erected, and an addition made to one of the old sheds.

The estimated number of plants and shrubs fairly established at the Nursery is:—

Open rooted plants and shrubs	...	...	...	...	...	400,000
Trees and shrubs in pots...	...	...	...	...	...	23,000
Trees and shrubs in boxes	...	...	...	...	...	30,000
Total	...	...	...	...	...	453,000

It may be perhaps as well to note that the Nursery has seed-beds now coming on containing many thousands of red cedar (*Cedrela australis*) seedlings, and it is anticipated, therefore, that a large stock of these valuable embryo timber trees will be available during the coming, and next planting season. Particular attention has also been given to the propagation of the most valuable varieties of ironbark timber trees, also to such timbers as silky oak (*Grevillea robusta*), beefwood (*Stenocarpus salignus*), colonial deal (*Podocarpus elata*), black apple (*Achras australis*), &c.

The total output from the Nursery of forest, fruit, and ornamental trees and plants has been:—

Reserves, plantations, and artesian bores	...	...	...	...	...	...	127,911
Schools and public bodies	...	...	...	...	...	...	46,547
Total							174,458

The expenses attached to the working of the Nursery has been very considerably reduced, without impairing the efficiency of the establishment, as the following statement will show:—

January, 1892.	Wages	...	...	...	...	...	£	s.	d.
January, 1893.	Wages	...	...	...	...	...	168	3	0
January, 1894.	Wages	...	...	...	...	...	72	9	8

Statement of Revenue, 1893.

REVENUE.

Forest reserves under Class A, B, and C:—		£	s.	d.
1.	Permit licenses, class C	586	0	0
2.	Timber-cutters licenses, classes A and B (without royalty)	1,132	15	0
3.	Miscellaneous, wattle-bark licenses, &c.	184	5	0
				1,903 0 0
<i>Royalty.</i>				
1.	Regulations of 2nd December, 1889, at per 100 superficial feet...	3,825	19	0
2.	Regulation 29 of 2nd December, 1889, at per tree	174	19	0
				4,000 8 0
<i>Crown Lands.</i>				
1.	Wood-cutters licenses	2,704	15	0
2.	Cedar licenses	201	10	0
3.	Proceeds of sale of seized timber	232	11	4
4.	Penalties	112	6	6
5.	Quarry licenses	241	0	0
6.	Rent of prickly-pear leases	150	14	0
				3,642 16 10
Total revenue for the year				9,546 14 10

Heads of Expenditure.

		Year 1892.		Year 1893.					
		£	s.	d.	£	s.	d.		
Salaries	...	11,773	16	4	*10,157	18	4		
Travelling expenses	...	5,865	11	4	3,735	6	6		
Contingent	...	2,443	11	10	2,271	14	4		
Nursery and plantations	...	2,843	14	4	2,288	8	6		
Thinning out reserves	...	869	9	2	472	2	6		
Paid for drawings of the Forest Flora of New South Wales	...	261	8	5	†222	10	8		
Eradication of Prickly-pear (not including travelling expenses)	...	129	17	6	157	0	0		
Experimental plantations at Broken Hill and Wilcannia	...	447	6	10	154	7	1		
Total		£24,634		15	0	£19,459		8	8

Pathologist.

During the year 1893 the work of the pathologist, Dr. N. A. Cobb, has been carried on according to the plans submitted at the beginning of the year, and approved by the Minister for Agriculture. The work has related to,—

1. Rust in wheat.
2. Diseases of the Sugar-cane.
3. The Parasites of Sheep.
4. Various less important matters.

1. The plans submitted with regard to wheat have been carried out successfully, the most marked success being at the experimental farm at Wagga Wagga. Mr. Wm. Farrer has had entire charge of the wheat sown at Lambrigg, and the entire results, which he will, no doubt, soon publish, are due to his well-known aptitude in, and enthusiasm for, this work. Messrs. Warboys (Spring Hill), Bragg (Narromine), Quick (Tamworth), Berthoud (Corowa), have each done good work in raising seed-wheat pure and true to name, and each has stated that he considers it a paying business (Mr. Berthoud excepted). Only one of these seed-growers has received a small amount of aid from the Department in the shape of subsidy, this being granted only as a special case, and not to be repeated. The pathologist visited all these farms except Mr. Quick's, and is pleased to report that the work undertaken by these seed-growers has been carefully done. Mr. Berthoud, by treating his seed (supplied by the Department) with too strong a solution of bluestone, injured its germinating power, and his results are less satisfactory on that account. There is every prospect that the new and improved sorts of wheat raised specially for seed will sell readily at prices varying from 5s. to £1 per bushel. The publications on the subject of rust in wheat undertaken by the branch are continued in the *Agricultural Gazette*. The descriptions of colonial wheats have had a good reception, the demand—not by any means confined to this colony—having exceeded the supply by some thousands.

As

* Including £1,326 10s. 8d. paid from Treasurer's Advance Account, Retired Officers, &c.

† Paid from Contingent Vote.

As chairman of the Intercolonial Wheat Nomenclature Committee, the pathologist called a meeting of that body early in 1893. The meeting was held in Sydney, and was attended by every member of the Committee, viz.:—A. N. Pearson, Esq., Department of Agriculture, Victoria; Professor Lowrie, Roseworthy Agricultural College, S.A.; Professor E. M. Shelton, Instructor in Agriculture, Department of Agriculture, Queensland; Rev. E. H. Thompson, Tasmania; Mr. Wm. Farrer, New South Wales.

The Committee examined the result of the work done under its direction in this colony and by this Department, with the result that a number of most important points were settled, and a plan adopted for 1894. It is fully expected that at the forthcoming conference in Brisbane final action will be taken by this Committee, which will settle once and for all the many difficulties that surround the subject. To show the importance of the subject it is only necessary to point out that no reliable recommendations on the subject of what wheat to grow can be made until the different varieties have been defined and named. Until recently the utmost confusion prevailed, but this is certain shortly to disappear before the clear ideas of the specialists delegated to give the matter attention. It is a very pleasant feature of this work that all the colonies have engaged in it and contributed equally to it, and that the result will be a uniform system of naming wheats throughout Australia.

2. Diseases of the Sugar-cane.

The investigation of the diseases of the sugar-cane were undertaken on the Clarence River, that being the locality where disease was most prevalent. The work occupied two months, and the preparation of the report six weeks. The report was published in the *Agricultural Gazette*, and was issued as a special publication for thorough distribution on the northern rivers, wherever sugar-cane is grown. At the request of the Department of Agriculture, Queensland, a special edition has also been issued for distribution in that Colony. This edition was paid for by the Queensland Government.

This report has been well received, and the results of the investigations are regarded as correct. The recommendations based on the results of the investigations have been acted on, and with much benefit already.

3. The Parasites of Sheep.

This subject has been dealt with at the special experiment station erected at Moss Vale, on the property of the Honorable John Lackey, President of the Legislative Council. The results thus far attained are in every way satisfactory. They are as yet unpublished. Both from a practical and theoretical point of view, our knowledge of these baneful animal parasites will be advanced considerably by these experiments. It is hoped that no more than a few months will elapse before a preliminary report will be before the public.

4. Various less important matters.

These are the partial investigation of a variety of diseases of both animals and plants, the answering of correspondence, the publication of a host and habitat index to the Australian fungi, and the publication of the descriptions of the various free-living nematode worms found about the roots of diseased banana plants, sent to this Department at the instance of His Excellency Sir J. B. Thurston, Governor of Fiji.

Publications.

The publications of the Pathological Branch for 1893 cover the equivalent of upwards of 200 pages of the *Agricultural Gazette*, and are accompanied by over 200 figures, mostly in the text, and for the most part drawn by the pathologist. Beside the matter relating to practical agriculture they contain the record of over sixty new species of animals and plants, discovered during the investigations.

The work done by the artist, Mr. Grosse, since June, 1893, was as follows:—

June.—Engaged making numerous drawings of wheat in connection with Dr. Cobb's experiments.

July and August.—Drawing botanical plates for reproduction in the *Gazette*. Developing a large quantity of photographic plates taken by Dr. Cobb at Harwood, in connection with sugar-cane disease. Making drawings of sugar-cane and spores of diseases attacking same.

September, October, November, and December.—Engaged extensively at Moss Vale with Dr. Cobb, investigating the parasites of sheep, and making photographs of same through microscope. Making a large number of botanical plates for reproduction in the *Gazette*, also several plates of poultry to illustrate Mr. Gray's articles for the *Gazette*.

During July Mr. Helms was, to a great extent, occupied in assisting Dr. Cobb making preparations for the microscope, and in other ways. At the same time during periods when not otherwise occupied, he arranged and labelled some of the collections made by him during the early parts of the year. He also began in July with some experiments in connection with the effect of the spore preparations of *Botrytis tenella* upon the larvae of beetles that infest the ground, to the detriment of plant life. These were continued during August, and the remaining time of that month was filled in with arranging collections as before mentioned, and by attending to different subjects to which his attention was diverted, which included a number of replies to letters in connection with bee diseases. He also assisted for some time at the spraying experiments carried on in the orchard of the Rookwood Benevolent Asylum. During September and part of October he assisted Dr. Cobb in connection with his researches about the cane diseases, and corrected the proof of the "Habitat Index" of the fungi of Australia, which occupied his time about a fortnight on account of the intricacy of the references. During the latter part of October, and the whole of November till the beginning of December, he assisted Dr. Cobb, at Bong Bong, in his investigations of the intestinal parasites of sheep. The greater part of December has been occupied in experimenting for the suppression of certain bee diseases, for which purpose he spent most of his time at Campbelltown.

Chemist.

The work done by the chemist, Mr. F. B. Guthrie, in the chemical laboratory of the Agricultural Department since 1st July, 1893, is as follows:—

The analyses made include the following:—

Soils, 30; fertilisers and manures, 15; fodders, 8; wheats, 20; sugar-beets, 8; waters, 4; milks, 26; condensed milks, 3; butters, 8; insecticides and preservatives, 6, making a total during the year 1893, of soils, 82; fertilizers and manures, 41; waters, 9; fodders, 9; wheats, 20; milks, 29; sugar-beets, 8; butters, 8; insecticides, &c., 10, in addition to numerous miscellaneous analyses such as plants for various ingredients, soils for special points, &c., reports, and replies to correspondents seeking advice, &c. As

As in the previous year the analysis of soils has occupied a large proportion of time. From the results of these analyses, which are made as complete as possible, and from other information as to the surrounding conditions of the soil, advice has been given as to the best method of treatment and manuring for different crops, particularly in the matter of the use of artificial chemical manures. That this information is valued is attested by the large number of soils sent in for analysis by farmers from all parts of the Colony.

As the number of these soils renders it impossible for us with our small staff to keep pace with them in a satisfactory manner, it is proposed next year to limit the complete analysis of soils to such as are typical, or of special interest, as the time hitherto devoted to them can be more profitably employed in other and more important work.

The analyses of manures and fertilisers are undertaken in the interests of the farmers as a check upon the different manures on the market, a complete list of which is kept, as far as possible, together with their manurial value as determined by analysis. Information as to the best and cheapest manure for different purposes can thus be readily obtained. The substances examined included also several waste products with a view to determining their value as manures.

The analyses of insecticides and preservative substances are in the same way a check upon the different specifics offered for sale. They were undertaken principally with the object of guiding the departmental experts in their selection and recommendation. It is hoped to extend this line of work during next year.

The analysis of wheats was instituted, in the first instance, with the object of determining the amount of gluten in the different varieties of wheat, the gluten content indicating the milling value of the grain, and being an important factor in the choice of wheats in connection with their ability to resist rust. In the course of the work several interesting points bearing on the constitution of the grain have presented themselves, which it is intended to work out.

During the year a series of experiments upon the milk-producing values of different fodders was instituted.

In September the Principal of the Hawkesbury Agricultural College placed three cows at the disposal of Mr. E. C. Wood, the science master, for the purpose of this investigation. The feeding of the cows, and their treatment during the period the test lasted, was superintended by Mr. Wood, who determined also, at frequent intervals, the fat percentage, the butter produced, and other points of comparison.

The fodders were analysed and the milk-testings checked by Mr. Guthrie.

The result of these experiments, though of interest to those concerned, has failed so far in establishing any fixed relation between the fodders used and the quality or quantity of the milk produced. The experiments have, however, been of value in indicating methods of overcoming the difficulties of detail which are inseparable from a first attempt to solve a problem presenting so many complex points.

The problem presented is one the solution of which is of the first importance to dairy-farmers, and it is, moreover, one that we must solve for ourselves, as the experience of other countries applies only in a limited degree to our own conditions.

Mr. Guthrie bears testimony to the painstaking care and scientific exactness with which Mr. E. C. Wood conducted the experiments.

A circular is in course of preparation inviting wine-growers and merchants to submit samples of their wines for analysis. The result of a systematic investigation of this kind, which has not hitherto been attempted, will be of interest in comparing our wines with those of other countries, in assisting in the judging of wines, in suggesting proper treatment and blending, in indicating the wines that are suitable for brandy-making, and in suggesting improvements in the treatment and cultivation of the soils and vines.

The composition of the different varieties of the fruits grown in the Colony will also be the subject of investigation, especially in reference to the composition of their ash. The experience of others shows that differences of soil and climate materially alter the chemical composition (and with it the properties) of the same fruit, and the line of investigation here indicated will show to what extent the conditions prevailing with us have affected the nature of the fruits, and will indicate improved methods of treatment.

Mr. Guthrie's assistant (Mr. E. H. Gurney) has rendered valuable assistance in the analytical work of the Department.

Entomologist.

A considerable amount of time of the entomologist has, as usual, been devoted to the work of preparing the material obtained by collectors and sent in by correspondents, for the collection of economic insects which is in process of formation.

From correspondents we have received a fair amount of specimens which make a valuable addition to our collection; and a considerable amount of advice, as to remedies and preventives, has been supplied to those sending and bringing in insects to the Department.

During the month of August the entomologist made a tour through the vineyards of the Mudgee district, embracing the towns of Cullenbone, Coolah, Cassilis, and Merriwa.

The objects of this tour were to make field observations upon various matters of economic interest and to experiment upon those root-feeding insects, which cause so much loss to agriculturists, with the so-called "*Parasite du ver Blanc*" (*Botrytis tenella*), with the view of ascertaining whether its use as a means of eradicating these pests is of any practical value in Australia.

To this end many experiments were made in selected places in the districts which were visited, but without any gratifying results, the fungus having no apparent effect upon the grubs. Not satisfied with these results, Mr. Olliff brought a large number of grubs of cockchafer beetles—which live on the roots of vines and other plants—to Sydney with him, and this material was handed over to Mr. R. Helens to experiment with. This gentleman found, after treating these, as well as other specimens received from various sources, with excessive quantities of spore matter, that none of the larvæ were in the least affected by the fungus, and in fact appeared to be not the least troubled by the treatment, and a few weeks afterwards were found to have progressed in their metamorphoses towards pupation.

Through the kindness of Mr. A. K. Bovil, acting principal forest officer of Vicosia, Cyprus, we have been supplied with several consignments of Capri figs containing the caprifigation fig-insects (*Blastophaga psenes*).

These

These consignments, unfortunately, arrived in a rather dry condition, and upon opening the figs the voyage had, in every instance, proved too much for the insects.

Mr. Bovill has been informed of this, and has been advised as regards packing the figs, and has also been asked to favour us with another attempt to introduce the useful insects.

During the year an epidemic broke out among some of the apiaries around Sydney, and the disease appearing to be of a micro-organistic nature, its investigation has been undertaken by Dr. Cobb and Mr. Helms.

From time to time a number of notes have appeared in the Departmental *Gazette*, dealing with such subjects as the codling-moth, the potato-moth, the Bugong-moth, and crickets—which latter insects have been the cause of much trouble in orchards lately. In part 9, vol. 4, of the *Gazette*, an article appeared upon the brown and salt-bush scale-moths (*Thalpoceares spp.*), which was accompanied by a beautiful drawing in colours of the life-histories of these insects, which have been worked out in this Branch, and in the case of the salt-bush scale-moth for the first time.

Botanical Branch.

Since July last the consulting botanist (Mr. J. H. Maiden) has performed all the botanical work required for the Agricultural Branch, in addition to his botanical investigations made for the Forest Branch. The whole of this work has been effected promptly and satisfactorily. Numbers of miscellaneous plants sent in by the public or collected by officers of the Department have been named, and information respecting them has been supplied.

In addition to this work for the Agricultural Branch a report has been made on *Sida rhombifolia* (Paddy's lucerne), a pest in the coastal districts.

A report on potato flour and spirit, on oil-seeds, fibre-plants, &c.

Reports on fodder-plants, bee-plants, plants supposed to be injurious to stock, tan-plants, the native bread or truffle, noxious weeds, and other miscellaneous subjects too numerous to individualise.

Some articles and miscellaneous notes on plants interesting to the agriculturist and pastoralist have been furnished to the *Agricultural Gazette*.

For the Forest Branch the consulting botanist has performed a considerable amount of work in the determination of herbarium specimens and timbers sent by the foresters, several of whom show a considerable zeal in the acquisition of an accurate knowledge of the timber-trees of their districts.

Seeds of timbers have been sent by some of the foresters. These have been named, and form the stock from which the State Forest Nursery at Gosford is supplied, and exchanges effected.

Some fine specimens of cabinet woods and timbers for structures have been named for transmission to the Imperial Institute during the year.

Report on *Duboisia* leaves now used for the preparation of drugs used in ophthalmic surgery.

Report on the extraction of kino from red-gum trees.

Supervision of the drawing of illustrations of our indigenous flora.

Supervision of collections of timbers and tan barks for Canada, which are likely to further trade between that country and Australia.

Nomenclature of plants at the Gosford State Nursery.

The most important, or rather laborious, item of the year, was the examination of the replies to the circular letter sent to Foresters in the matter of ringbarking and sapping.

Report on wattle-plantations, West Bargo.

A most valuable report on Don Dorrigo Forest Reserve.

Enrichment of the herbarium by a large number of interesting species now under examination.

Reports on tan-barks.

Articles on timber-trees in *Agricultural Gazette*, which are of considerable value.

Fruit Expert.

During the past six months the work of the fruit expert (Mr. A. H. Benson), has been of a somewhat varied nature, and has included visits to various parts of the Colony, practical spraying experiments at Rookwood, propagation of fruit-trees at Gosford, lectures in different parts of the Colony and before the Fruit-growers' Union at Parramatta, completion of the cold-storage experiments, experiments with lemon-curing, work of the Pomological Committee, and several reports and articles both for the *Agricultural Gazette* and for Departmental use. His visits included a tour through the Northern Rivers District from Coff's Harbour to the Tweed, during which he gave several lectures and spraying demonstrations, and made a general report on the district, which has been published in the *Agricultural Gazette*. In connection with the Northern Rivers District he also prepared a report on the growth of fruit-trees suitable to the district, which was sent to the members for the district, and published by them in the local papers. He also visited Orange, where he gave a spraying exhibition; Bowning, where he visited orchards and gave a lecture; Wagga Wagga, where he visited the experimental farm and prepared a report on the proposed orchard and vineyard; also a number of places near to Sydney, where he visited orchards and gave general advice on fruit-growing and the eradication of insect and fungus pests. A series of experiments was carried out by him at Rookwood with various fungicides and insecticides on a number of different trees, and has made a full report thereon, which will appear in the February number of the *Agricultural Gazette*.

A large number of scions of different varieties of fruit-trees were received from Victoria late in the season, and although there were no stocks on which to work them he managed to save a large number of the varieties by root-grafting. The scions were taken to the State Nursery at Gosford and worked and set out there, and will be removed to Wagga Wagga next June.

The experiments in the cold storage of fruit were completed for the season; the result of the experiments was, on the whole, satisfactory, as it has definitely proved the necessary conditions to be maintained in order to keep the fruit successfully, and it has also shown what fruit to store, and how and when to store it. A full report on the experiments has been published in the *Gazette*.

An experimental curing of lemons was also made, the lemons being cut the beginning of July, and being still in use. Samples were sent to various persons, and a small box was sent to the Honorable Mackenzie Bowell on his departure for Canada.

The

The Pomological Committee held their first meeting on 16th November, three subsequent meetings having been held. About 100 samples of fruit have been submitted, and arrangements have been made whereby samples may be more readily forwarded to the Department. A number of forms for the classification of different fruits have also been printed, and a description and drawing of all the different fruits have been kept for future reference, with the ultimate view of publishing a work on Australian-grown fruit.

The fruit expert has given a series of lectures before the Fruitgrowers' Union on Manuring, Utilisation of Fruit, Draining and Liming, Packing, Grading, &c., and has written articles for the *Agricultural Gazette* on Orange-culture, Pruning, Orchard-manures, Cold Storage, Northern Rivers, and Orchard Notes for each month. He has also made a number of reports for Departmental purposes, and has answered a number of official letters on all subjects connected with fruit-growing. He has also given information to a large number of persons on various matters who have visited him at his office. In connection with the proposed orchard and vineyard at the experimental farm at Wagga Wagga, he has obtained a large collection of high-class American varieties of fruit-trees from the California Nursery Co., through the Universal Nursery Co., which have arrived in first-class order, and are at present temporarily planted at Wahroonga, but will be removed to and planted out at Wagga Wagga in June or July next, so that the foundation of an experimental orchard for reference purposes will be laid.

He visited the Paterson River district for the purpose of making a report on the cause of the orange and other citrus fruits dying out. A full report of his visit was at the time sent to and published by the local press.

Seed Branch.

The work done in the Seed Branch under the charge of Mr. G. Valder during the half-year ending the 31st December, 1893, has been very satisfactory.

The interest taken by farmers in the introduction of seeds of new commercial crops by the Department is still on the increase, and the applications received for these seeds by far exceeded the supply. The number of packets distributed was not equal to that of the same period last year, but this is accounted for by the fact that the quantity of seeds available for distribution was not nearly so large this year as last. Last year a considerable sum was expended in obtaining seeds, but this year only a very small sum was spent, most of the seeds being either obtained by exchange or grown by the Department. The first six months of this year 779 persons were supplied with 4,675 packets of seeds, and the last six months 2,257 persons with 5,158 packets. The totals for the two years were as follows:—

	Persons supplied.	Packets distributed.
1892	3,182	13,235
1893	3,036	9,813

The following table gives the names of the principal crops of which seeds were supplied, and the number of packets of each that were distributed:—

SEEDS, Roots, and Cuttings distributed during the half-year ending 31st December, 1893:—

	Name.	Persons supplied.	Packets distributed.
Seeds	Tobacco, sixteen varieties	351	1,075
	Chocho	187	386
	Pigeon-pea	132	132
	Mung-bean	157	157
	Cow-pea, three varieties	74	172
	Carob-bean	146	146
	Tagosaste	227	227
	Teosinte	49	49
	Bokhara-clover	128	128
	Sugar-beet, two varieties	34	34
	Mangels, nine varieties	82	278
	Thousand-headed kale	135	135
	Rock-melon. Imp. Cassaba	147	147
	Native grasses	26	112
	Black wattle	32	32
	Miscellaneous	86	86
			1,993	3,296
Roots	Potatoes, six varieties	114	292
	Sweet potatoes, two varieties	14	28
Cuttings and Plants.....	Basket-willows	14	504
	Grape	25	480
	Sugar-cane	77	438
	Smyrna fig	12	72
	Giant lemon of Fiji	8	48
	Total	2,257	5,158

Upwards of 2,000 reports were received regarding results obtained from the seeds distributed by the Department last year. From these some very valuable information has been gathered, and the reports are being collated for publication in the *Gazette*. The sorghums cultivated in this Colony have of late years become much deteriorated in consequence of inoculation and mixing. The varieties imported by the Department from America and India, viz., "Coleman," "Collier," "M-Lean," "Dari," and "Black African," were, therefore, watched with great interest by our farmers, and as they all did remarkably well, in many instances proving themselves far superior to the varieties previously grown here, they will no doubt prove a very valuable introduction. Several letters were received thanking the Department for the good work done in introducing these sorghums.

Among other forage crops, teosinte, bokhara clover, pearl millet, and tagosaste gave some very fine results, the yield in several instances being very heavy.

Samples

Samples of sugar beets were sent in which had been grown from seed supplied by the Department. As was the case the previous season, it was found on analysis that they contained a very satisfactory percentage of sugar, proving how suitable this Colony is for the cultivation of that crop.

Of the pulses distributed, the "Cow Pea" (*Vigna catieng*, Endl.), appears to be the most valuable. It thrives remarkably well here, producing from 8 to 10 tons of green fodder, and from 30 to 33 bushels of dry pulse per acre. As this plant is valuable in several ways it will no doubt soon be largely grown here. Of the other pulses sent out, pigeon-pea, Chick-pea, and Soy-bean appear to have given the best results.

Samples of mountain rice grown from seed supplied by the Department were sent in by several farmers from the northern rivers. These were submitted to an expert, who reported that it would be worth while to try the experiment on a larger scale, as the samples were of a very good quality. This is now being done by several farmers, and the experiment will no doubt be watched with great interest, as some idea will be obtained of the value per acre of this crop.

In October last year Mr. G. Valder made a sowing in measured plots of fifty-four varieties of pulses and a number of other new commercial crops, with a view of obtaining definite information regarding their value in this Colony. The produce from these sowings has been harvested, the seeds of the most suitable varieties distributed (amounting to nearly 2,000 packets), and the information gathered therefrom is now being published in the *Gazette*. A number of packets of these seeds were sent to the artesian bore farms, the products of which have lately been exhibited in Sydney.

From the herbarium 273 specimens of our native grasses and fodder-plants have been sent to foreign herbariums, and some 300 specimens have been received in exchange, including 100 specimens of native grasses of the United States of America. A number of specimens of grasses, fodder-plants, weeds, and other plants of interest to agriculturists have been added to the herbarium.

About 400 specimens have been added to the Museum, and many of the exhibits have been relabelled and classified. The whole of the exhibits have been moved to the building in the Domain lately occupied by the Technological Museum, and will there form a portion of the Mining and Agricultural Museum.

In August last Mr. Valder spent a fortnight at Booral pruning, spraying, and propagating the white mulberry trees at that plantation. He also, in September, spent a fortnight at Gosford, assisting the fruit expert in propagating fruit-trees, and inspected several wheat-plots in connection with the rust-in-wheat experiments.

A large number of letters have been answered by Mr. Valder regarding all branches of agricultural and horticultural subjects, especially those referring to the sowing and cultivation of farm and garden crops.

Subsidies to Agricultural Societies.

In consequence of the reduction of the vote for subsidising Agricultural Societies, and the alteration in the terms of the vote, the work of disbursing it has involved strict scrutiny into the revenues of Societies, and the classification of the same under the heads of "Members' Subscription" and "Contributions" respectively. The introduction of a new method of dealing with claims for subsidy, rendered necessary by the terms of the Appropriation Act has no doubt given extra trouble to the officers of the Societies, but as soon as it was made clear to them that the change was unavoidable they cheerfully acquiesced, and rendered every assistance to Mr. Fitzgerald (the officer in charge of this work) in the performance of his onerous and difficult duties. Much of the success which has attended the introduction of the new method is due to the excellent management of Mr. Fitzgerald. In future, it is hoped this method will work without trouble either to the Societies or to the Department.

With regard to the work actually done, some 282 separate accounts of claims have been rendered, of which 148 claims had to be returned for revision, and the claims of sixty-seven Societies have been passed for payment. These claims refer to forms "A," which is confined to actually-paid annual subscriptions of members. The claims in respect of donations, &c., dealt with on form "B," cannot be dealt with until all claims under "A" have been paid, and the balance remaining for distribution has been ascertained. Some seventy letters have been written by Mr. Fitzgerald to officers of Societies in reply to questions of detail upon agricultural and pastoral show subjects and subsidy, and he has kept a statement of accounts showing moneys paid in subsidy, and reasons for claims being returned to Associations, and nature of information required to be supplied by these Societies. An account is also kept of the dates of all Shows, to admit of information in that regard being supplied to business people of the Colony, and also for *Gazette* and other purposes.

The books and accounts and butts of receipts given at Inverell, Glen Innes, Tentersfield, Armidale, Maitland, Dubbo, Forbes, Orange, Cootamundra, Wagga, Albury, and the Royal, also various Horticultural Societies in and around Sydney, have been examined and initialled, and the officers of many Societies have been advised concerning future requirements.

In conclusion, I may perhaps be permitted to express a hope that during the year 1894 we shall be able to demonstrate in more marked manner the advantages of the reorganisation and amalgamation of the Departments of Agriculture and Forests.

I have, &c.,

HARRIE WOOD,
Under Secretary for Mines and Agriculture.

Department of Mines and Agriculture,
19 February, 1894.

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

GOVERNMENT LABOUR BUREAU.
(SECOND ANNUAL REPORT.)

Ordered by the Legislative Assembly to be printed, 14 March, 1894.

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The Superintendent, Labour Bureau, to The Principal Under Secretary.

I HAVE the honor to present herewith the second Annual Report of the Labour Bureau, viz., from 18th February, 1893, to the 17th February, 1894.

Labour.

The general depression which has prevailed throughout the colony for the last three years, and particularly during the last year, has been keenly felt by all classes of the community, and particularly by the industrial classes. It has, indeed, been an era of adversity. The terrible financial crisis which the colony has passed through has had a depressing effect on trade in every direction. It has, naturally, checked the circulation of capital, while the high rate of interest prevailing has had a most disastrous effect on enterprise. Heavy financial losses have blighted the prospects of thousands of employers of labour, and a feeling of uncertainty as to future developments has had the effect of entirely shaking confidence. As a result, retrenchment has been the order of the day in all the avenues of industry, and thousands of men having been thrown out of work the labour market has been congested to an unprecedented extent. Among the men who have thus unexpectedly been deprived of the means of livelihood is a class who have suffered acutely. I refer to clerks, accountants, and professional men with families, who, unfitted for heavy manual labour, have found it very difficult to obtain employment in the country districts, where the principal demand has been mainly for farm or other labourers. It can therefore be readily understood that the absolute privation, the terrible struggle with poverty and destitution which these, as well as other industrious deserving men have undergone, has been very severe and painful. Despite all efforts not to reveal their poverty, they have been at length compelled to seek assistance from the relief department of the Bureau.

The state of the building trade, which is, as a rule, a correct index of the labour market generally, has been for some years, and is still, very much depressed, resulting no doubt from the collapse of so many building societies, and the failure of banking and mining companies.

At a meeting recently held in Sydney of those directly connected with the building trade, it was stated that no fewer than 6,000 operatives connected with that trade had been thrown out of employment through the general depression, and the statement does not appear to me to be much exaggerated. It is pleasing to note that large numbers of tradesmen connected with the building trade, who have lost their employment, have shown their bona-fides in the matter of desiring to obtain work by taking whatever has

offered, and in almost all kinds of farm work, as well as even less remunerative callings, they have shown their readiness to make use of whatever legitimate means there were to hand to enable them to tide over the depression. It will thus be seen that through the extra strain of increased supply from an unusual quarter there has been a corresponding difficulty added to those seeking the ordinary laborers' work offering.

It almost invariably follows that where the building trade is prosperous the labour market is in a satisfactory condition; and as the trade is in such a depressed state, not only in this colony but in the other colonies as well as in other parts of the world, the condition of the labour market generally in New South Wales can be adequately gauged.

In spite of the depression however, its severity, and widespread character, I am inclined to think that there are not so many persons unemployed this year as there were last.

The number of unemployed registered during the past year (1893) amounted to 12,145, consisting of 5,048 married men, having 10,215 children depending on them; and 7,097 single men, while the number of unemployed registered during 1892 was 18,600, consisting of 7,449 married men with 16,854 children. This shows a decrease for the past year of 6,455 as compared with the year 1892.

The number assisted and sent to work last year (1893) is 10,349, while the number for the year 1892 was 8,154. These figures show a decrease of 6,455 in the number registered last year, and an increase of 2,195 in the number outgoing for 1893, as compared with that of the previous year. It may also be noted that the percentage assisted and sent to work from the unemployed registered during the present year was equal to 85½ per cent. of the whole, while that for 1892 was equal to 44 per cent.

In addition to those sent to work by the Bureau an estimated number of 1,500 registered as unemployed have found work incidentally, but have not informed us that they have done so. Taking this into account the total number sent out for the year would be 11,849; deducting this number from those registered, and allowing for a percentage for double registrations, and taking into consideration a number of others registered, who have gone into the country or to the other colonies on their own account, also a large number who are partially employed, and taking further into account the number of unemployed at the beginning of the year, and the difference between those registered and sent to work this year, I estimate the number of unemployed in Sydney and suburbs at the present time at about 6,000.

There has been a considerable demand during the last six months for bush clearers and farm labourers.

No doubt this demand has been brought about in consequence of the reduction in wages, owing to the large number of unemployed throughout the colony.

Landowners finding that they are able to get men at reduced wages are clearing land throughout the country, which under ordinary circumstances would have been left in a state of nature, and everything goes to show there will be next year a large increase in the acreage under cultivation as compared with last year, although that exceeded the acreage under cultivation in any preceding year. In addition to a number of gangs of men engaged for "clearing" bush land, batches of miners have been engaged as tributors to work mines which have ceased operations, owing to their properties getting into more or less serious difficulties. Many of these mines are now being worked on the share or co-operative principle. These two sources of employment have been the means of providing at least a living to a large number of men in various parts of the colony.

Although there has been a rush of unemployed registered at the Bureau during the past month (January), there has also been an increase in the number sent out. Indeed, the indications all round, so far as I am able to judge, are that there are some signs of an improved state of affairs, as far as the working classes are concerned. Although wages are lower than formerly, if we could have public confidence restored, there would be every reason to hope that we have seen the last of the terrible wave of depression which has been passing over New South Wales, as well as the other Australasian colonies, and has in fact been world-wide in its disastrous effects.

It has, however, taught us this lesson—however bitter the experience may be—that land-booming extravagance and reckless investment are not the best methods to adopt to become a happy and prosperous nation. With a cheaper money market enterprise and confidence would follow, and as the industrial classes generally found employment prosperity would again return.

The large number of public works for which contracts have been accepted recently have given employment to a very large body of men. I may be permitted here to respectfully suggest that if possible it would be very desirable in the case of any public works contracts not requiring expensive plant or machinery in carrying them out, should be let in small sections, and thus enable gangs of unemployed men to tender for them, or do them at schedule prices.

If this could be done it would undoubtedly tend largely to relieve the present congested labour market. I am informed that in New Zealand an experiment in this direction has been found to turn out well, and with the present seriously over-crowded labour market the present time would be opportune to give the matter a trial. If this could be satisfactorily arranged by the unemployed themselves in their own interests coming forward and doing their part in an honest and conscientious manner, which under the circumstances I am certain many would do, it would increase the hope that a better state of things, so far as labour is concerned, is nearer than may be imagined.

A Select Committee was appointed during the year to enquire into the working of the Bureau, and having taken evidence of various witnesses, sent in a report to Parliament, which has, however, not yet been adopted by the House.

A severe depression in the coal trade has thrown out of employment a very large number of miners at Newcastle, Greta, Lithgow, and Wollongong. I visited Newcastle on three different occasions, and found a large number of able-bodied men in great poverty. I sent away from Newcastle and district alone no fewer than 857 men to the old goldfields in different parts of the colony to try and make their living by fossicking. At Greta, which I also visited, there was likewise a large number of miners unemployed, and from whence I despatched 49 men fossicking. Wollongong, Lithgow, and Goulburn were subsequently visited by me, and from these places I sent away 99, 52, 148 men respectively to try and make a living fossicking.

Fossicking

Fossicking.

In August last the Under-Secretary for Mines prepared a minute showing that a number of the unemployed might make a living on the old goldfields of the colony. This minute was approved by the Minister for Mines, and afterwards by the Premier, the result being that a board was appointed to give effect to the minute. The board consisted of Mr. Harrie Wood, Under-Secretary for Mines, Mr. W. Dowell, M.P., Mr. W. J. Slee, Chief Inspector of Mines, and the Superintendent of the Government Labour Bureau. This board met from time to time to consider the best means to be adopted, with the view of sending out fossicking those of the unemployed who desired to do so; and it is, perhaps, surprising the large number of them who have taken advantage of this means of obtaining a livelihood.

The mode adopted is, that those desirous of going on the old goldfields apply to Mr. Slee, at the Mines Department. If the applicant is considered to be suitable he is given a recommendation to the Superintendent of the Labour Bureau, who is empowered to grant a railway pass and a miner's right, the cost for which each man signs a guarantee to refund when able to do so. Those in destitute circumstances receive in addition to the miner's right and railway pass, the following rations to assist them to their destination, viz.,—10 lbs. flour, 5 lbs. sugar, and $\frac{1}{2}$ lb. tea, costing 2s. 6d. each.

During the six months that this means of finding employment has been in operation no less than 4,516 men have been assisted and sent to the different gold-fields of the Colony. Many of those who are sent are strong able-bodied men with years of mining experience.

From Sydney alone the number of men sent fossicking is 2,989; from Newcastle 857 were despatched; from Greta, 49; from Wollongong, 99; from Lithgow, 52; and from Goulburn, 148. The total number sent include some of the best miners in the Colony. They have been requested to write back to the Bureau giving information as to how they succeed; and, while many have complied with this request, a large number have not done so. Taking into consideration, however, the many hundreds who have corresponded with the Bureau, it is satisfactory to know that among all these men a large proportion of them have done fairly well, while the great bulk of them have succeeded in making a living.

Some, of course, have not been successful, and in not a few cases this has been because they have not had means to purchase necessary tools and machinery. In other cases some have found work at wages, whilst others have made up tribute parties. The very best evidence that a number of the miners have succeeded is the fact that no less than 122 have written to the Bureau asking for their wives and families to be sent to them, which has been done, their prospects being such that they look forward to making a living and a home for themselves and families.* Although this means of finding employment has been in operation six months, it increases in favour with the men themselves, as is evidenced by the fact that the large number of 1,530 have been sent out fossicking since 1st January to 17th February this year, being a daily average of nearly forty.

Considering the large numbers of men who have been sent out in this way, many of them thoroughly practical miners with lengthened experience, it is but reasonable to expect and sincerely to be hoped that some of them may succeed in finding payable fields, and thus be largely instrumental in reducing to a minimum the depression from which the Colony is now suffering.

The offer of a Government reward of £1,000 to the finder of a payable alluvial gold-field is much appreciated by old miners, and such an inducement will no doubt have a stimulating effect, and cause still more life to be thrown into this line of industry. And before leaving this subject it might be noted that numbers of those who have gone out to old patches where they know they can make at least bare living, or have done so previously, remain there pending the passing of the Mining on Private Property Act, so that they may be near the spot they desire to operate on the moment it becomes law.

The number of miners' rights issued to those going fossicking during the last six months is 3,623, at a cost of £1,240 15s.

The number of miners' rations issued to date is 2,278, costing the sum of £285 10s. 2d.

Labour Settlements.

The Act to establish and regulate labour settlements on Crown Lands was passed in June, 1893, and under that Act the Minister set apart land to form three settlements as a commencement, namely, one at Bega, one at Wilberforce, and one at Pitt Town.

The regulations governing these settlements are somewhat different in principle. The Wilberforce is more of a company of shareholders, who put down so much money each, to be all expended previous to any Government aid being obtained. There are at present on the settlement—men, 38; women, 22; children, 69; being a total of 129 souls.

The Bega settlement differs somewhat, each settler having his own area of land, but is co-operative in principle, and there are at present—men, 18; women, 18; children, 61 upon the settlement, making a population of 97 souls.

The Pitt Town settlement with which I am more conversant, being a member of the Board of Control appointed by the Minister soon after the passing of the Act. The regulations governing this settlement are communistic and co-operative in principle. The settlers consist of men taken from the ranks of the unemployed, and were without means. The funds for carrying on this settlement are advanced by the Government under the regulations, viz., £25 for a married man with family, £20 for a married man without family, and £15 for a single man. Under the Act I was appointed to receive and register all applications and report on the fitness of applicants to become settlers.

Up to the present time 723 applications have been received, consisting of 614 married men, with children representing 1,986, and single men and widowers, 119, making a total of 3,333 souls.

On the Pitt Town settlement there are at present 90 married men with wives and children numbering 265, and also 6 single men, being altogether 451 souls. It has now been in existence six months.

There are many who speak in favour of the possible ultimate success of this settlement, whilst others criticise it adversely. It is, perhaps, too soon to express an opinion as to the ultimate success of either of these settlements, but it is considered very doubtful by some whether the communistic co-operative principle will succeed. I am, however, afraid the want of incentive, which has made our pioneer

* NOTE.—This represents 122 women, with 350 children in addition, permanently settled in the country.

pioneer farmers successful, will be the chief obstacle to the success of these settlements, viz., by hard work and perseverance, looking forward to ultimately becoming the owner, and receiving the benefit of such industry and perseverance for themselves and families.

The chief elements, however, in any successful settlement under the Act must be good land, plenty of water, and convenience to market.

If, after time, experience shows that these settlements are going to succeed, it would be in the interest of the country to establish many more under the Labour Settlements Act.

Wages.

The Bureau has nothing whatever to do with the rate of wages; its functions being merely to bring employer and employee together, leaving the question of wages and terms to be settled by themselves. However, from the large number of letters received daily from employers in all parts of the Colony, and stating the wages to be given, it is evident that the general rate of wages for the past year has shown a reduced tendency all round, though in some branches it is more noticeable than others.

In the latter category it may be noted that amongst the country engagements farm and orchard hands are paid from 10s. to 20s. per week and found, as against 12s. to 25s. last year; station carpenters, 15s. to 32s. 6d. per week and found, as against 25s. to 35s. last year; married couples, £50 to £80 per annum against £55 to £90, the average rate showing a deduction of from 10 per cent. to 15 per cent. upon the previous year; bushmen, 10s. to 25s. as against 15s. to 30s.; camp cooks, 12s. 6d. to 30s. against 27s. 6d. to 30s.; general station hands, 10s. 6d. to 27s. 6d. against 15s. to 30s.; handy and general useful men, from 8s. to 20s. and found. A large number of elderly men are glad to accept employment at merely nominal wages in order to get a home.

Within the metropolitan area the building trade shows reduced wages, though with first-class tradesmen this is not noticeable as the scarcity of demand is for such services. Of foundry hands, blacksmiths, bootmakers, tailors, &c., it may be said that their trades are still very dull, though the wages appear to remain much the same as for the greater portion of last year.

Clerical engagements are small by comparison with the number who have been retrenched, and when fresh hands are employed the rate of wages shows a general reduction to have taken place of from 10 per cent. to 25 per cent.; indeed, many educated men are offering their services for anything they can get.

Refunds.

The refund of fares—rail, and steamer—as compared with last year shows a considerable increase, although there is still a very large amount owing on the account.

The “fossickers” are mainly responsible for the latter, but as the system of drafting men off under this head has only been in operation six months, and they have had to provide themselves with tools, &c., it is not surprising that only a small return has at present been made by them, but it is to be hoped that after a further short extension of time a substantial refund from this source will be received.

In many cases men who have gone mining have sent for their wives and families, and in these instances time must be allowed for them to settle down before expecting payment. Liberal time is granted in all cases, and payment by instalments taken.

The total amount received for the year 1892 was £1,135 16s. 1d., and for the last year, 1893, the sum of £2,676 10s. was paid, showing an increase of £1,540 13s. 11d. on the year, and being at the rate of about 44 per cent. on the total outstanding amount due by those sent out to their employment through the Bureau, and less than $\frac{1}{2}$ per cent. only on those sent out fossicking.

The system of refunds for papers came into operation in July, 1892, and the total amount received is £3,812 6s. 1d.

Relief Department.

It is to be much regretted that the nature of the report under this head is of an unsatisfactory character in many important respects.

During the past year, notwithstanding the extensive ramifications of the several charitable organizations and relief committees outside of this department, there has been a vast increase in the number of applicants here, showing that the depressed state of the labour market is still at a low ebb, and that the means have become exhausted with those who have struggled on against adverse circumstances for, perhaps, several years past.

The distress has been more varied, far-reaching, and painful in many cases than hitherto, and this more particularly is obvious among the non-manual labour class, such as professional men, clerks, accountants, shop hands, and those whose callings have to a large extent unfitted them to cope successfully with adversity.

One reason for what may be looked on as a temporary increase, is that so many have been sent out lately fossicking for gold, and in the meantime have left their families to be provided for through the Bureau, until they can either send them means to live on, or, as many have done, get their families sent to them when they have found they could make a living at their present occupation.

This department mainly concerns itself with relief of the women and children who have no means of livelihood. Unfortunately it is a fact that the effect of receiving relief on many hitherto manly dispositions has been deplorable, in that their sense of independence is gradually being sapped, and is being allowed by themselves to drift away, and in its place is slowly, but surely, asserting itself all the attributes of what go to make what is known as the “loafer” pure and simple. The sooner this is remedied the better for all concerned, and the best method for so doing seems to point to the system adopted in older and more experienced countries, viz., for every applicant for relief to earn the cost of such relief in whatever way may seem best to meet the special case.

By this means, whilst a man might not reap pecuniary profit for his labour, he at least would remain an independent citizen, and his moral and manly feelings would not become saturated with indifference and wholly debased, as they are now in danger of being under the present system of getting food without effort. This subject is further referred to with suggestions in this report under the heading of “loafers.”

It is further to be noted in this connection that there are not infrequent instances when men (and, sometimes women) refuse work offered, giving the reason that the wages are not sufficient (or not standard), while at the same time they expect to obtain the relief, which, except under extraordinary circumstances is, of course, refused.

An adult's ration given by the Bureau consists of 4 lb. bread, 3 lb. meat, $\frac{1}{2}$ lb. tea, and 2 lb. sugar, and in providing for the supply of a family two children are reckoned as one adult. The cost since September last is 1s. 5d. per ration, previous to which date it was 1s. 6d. In special cases of sickness infants and sick mothers are allowed a little milk, sago, or oatmeal, and there is no doubt that this has assisted to prevent an increase of infantine mortality (and possibly of crime) in the city.

While there has been so many cases of genuine distress relieved by the Bureau, these have been accompanied by attempted impositions of a kind that will call for condemnation; for instance, a few days ago an application was made by a man of means who was erecting a house for himself; another case, a woman could not be "bothered" replying to questions put to verify apparent misstatements in the form filled up. So long as some men get rations for their families they will make no effort to obtain any employment, but in these cases, as well as in others, the impostors have had a very brief reign. This section of the Bureau's work is carried out as follows:—Every applicant for relief has to fill up the attached form, which is handed to one of the inspectors, who thereupon visits the address and institutes inquiries.

The result is embodied in a report to the superintendent, and upon the report is based the issue or refusal and quantity of rations.

Cases of attempted fraud occur nearly every day, and it requires the greatest care and vigilance on the part of the inspectors, which I need hardly say are exercised to prevent them succeeding.

The greatest difficulty to contend with in giving relief is where the father of the family seems to have no sense of responsibility as such. So long as the Government keep the family he is content to linger on in laziness, but to stop the rations abruptly in such cases would be too harshly punishing the wife and children for the husband and father's offences. To deal with the various conditions and circumstances of the many deserving and undeserving applicants is a most difficult and anything but a pleasant duty, and requiring a good deal of discretion and care to do the right thing.

Nineteen thousand seven hundred and five weekly applications have been received during the year. This number represents a total of 2,169 distinct families, with 6,319 children, many of whom have been forced to apply several times at different periods of the year, thus giving a total of 19,705 shown as applicants. Of the 2,169 families 1,655 have been either refused or, having had relief for some time or obtained employment, been discontinued.

Fifty-two thousand five hundred and twenty-five rations have been issued (being an increase of 21,565), at a total cost of £3,840 6s. 0 $\frac{1}{2}$ d., as against the sum of £2,324 11s. 6d. for the preceding year.

The average cost of each family being relieved is £1 15s. 4 $\frac{1}{2}$ d.

Adverting generally to this department of the Bureau, there is no room for doubt that had these operations closed here the benevolent organizations of the city would have been taxed to an extent such as they may have found it impossible to cope with, taking into consideration the already heavy burden they were asked to bear.

To afford shelter to the homeless, a shelter shed was opened on Woolloomooloo wharf in one of the large Government sheds on the 1st day of June, and closed on the 27th day of September, 1893.

During the period it was available it was used nightly by an average of 503 men, and throughout the whole time good conduct and order prevailed.

The cost of administering this species of relief was about £50 and a small sum for incidental expenses.

In connection with this shed, teas were supplied at 1 $\frac{1}{2}$ d. per head, at the Mission Hall, Sussex-street, the cost of which was £121 2s. 3d.

Owing to the wet weather which set in some two or three months ago, after the shed was closed, arrangements were made for shelter to be given, upon tickets obtainable at the Bureau, at the Mission Hall before mentioned, at the rate of 1d. per head per night, and this is still being continued. The cost of this up to date is £35 13s. 2d.

[COAT OF ARMS.]

GOVERNMENT LABOUR BUREAU.

Application for Relief.

Registered No.	...	...	...	...	...	...
Name..	...	...	...	...	...	...
Address	...	...	...	...	...	...
Age	...	...	...	...	...	...
Occupation	...	...	...	...	...	...
Single, married, or widower	....	....	....	....	....	....
No. of children	...	...	...	...	...	...
Ages of children	..	..	..	..	..	..
Name and address of last employer	...	...	...	...	...	...
How long out of work	...	...	...	...	...	...
Name and address of landlord	...	..	..	..	..	..
Rent per week	...	...	...	..	..	..
Arrears, if any	...	...	...	..	..	..
Other debts owing	..	...	...	...	...	...
What relief obtained	...	...	...	...	...	...
Family earnings—if any	..	...	...	...	...	...

This is a true statement—

Signature.

Inspector's Report.

Relief in the Country Districts.

The distress from which the unemployed has suffered, and are still passing through, has not been confined to the metropolitan district alone.

Owing to the state of the coal trade (which a few years ago was so flourishing and promising, but now unfortunately so diminished and depressed) thousands of miners have been thrown out of employment, and their unfortunate families are suffering great distress. During

During my visits to Newcastle, Greta, Adamstown, Dudley, Minmi, Plattsburg, Wallsend, Lambton, Wollongong, Goulburn, and other places, I was made painfully aware of the enormous amount of destitution existing among the miners' families. As I have already pointed out, 4,516 miners have been distributed all over the Colony "fossicking," some on the old gold-fields and others trying new ground, but all striving to earn a living for themselves, their wives, and children.

To prevent the latter from starving I was authorised by the Government to issue rations to destitute families of women and children. In this way the sum of £1,277 17s. 7d. has been already expended in relief for Newcastle and district, viz., Plattsburg, Lambton, New Lambton, Carrington, Wickham, Merewether, Dudley, Adamstown, Hamilton, Teralba, and W. Wallsend.

The sum of £431 12s. 9d. has been expended for relief to the destitute of Greta, making a total of £1,709 10s. 4d.

In the month of December the Premier approved a minute that in future relief votes should be given as a subsidy of £ for £ for an equal amount voted by the Municipal Council or raised by the public, and expended in giving work on the roads and streets to the destitute unemployed, instead of giving out gratuitous rations, and this system is now being carried out.

Loafers.

In all large cities there is invariably to be found a number of men who have from different causes forsaken the path of honest labour and become what is commonly known as loafers on society. Unfortunately this class is very largely represented in Sydney at the present time. Many of these men were a few years ago hard working and industrious, but through bad habits, bad associations, and the neglect of manly principles, step by step they got off the right track.

In many cases the too free use of strong drink has made them lazy, idle, and degraded, causing them to lose their self-respect, any ambition they may have possessed, and at last their manhood, and they at length become a disgrace to their fellow men, and a nuisance and a burden to society. Loafers will not work if they can help it; they prefer to beg or steal rather than work for an honest living. This class is to be met with in all large cities at all times; in prosperity or adversity we have the loafer. In this city at the present time I estimate that there are from 400 to 500 confirmed loafers. They are daily to be seen in our parks, sleeping their indolent lives away, while all about them may be seen hundreds of foreigners with nothing like the opportunities and far greater disabilities to contend with, honestly working for and making a living, and rarely if ever seeking Government relief. Our climate is so favourable to this class that they can almost do without a home or shelter; and with really little or no physical exertion it does not take much to keep them alive.

How to deal with this class is a somewhat difficult problem to solve. I will, however, suggest one mode which might be made successful. If, say, 100 acres or more of fairly good land were set apart as an industrial farm, convenient to the city, and in connection with the Bureau, these idlers could be sent to it and compelled to earn their living. In fact, this farm could be made to serve the same purpose for the loafer as the "Sobraon" does for the homeless and neglected youth.

The men sent to the farm need not be confined to farm work, but could be set to do any suitable work. With good regulations and strict supervision, a great deal might be done towards reforming a fair proportion of the class to which I refer. I am convinced that one effect of compelling these men to work for a living would be that in some cases at least their former habits of industry and self-respect could be restored, and they would again take their places as worthy members of society. As reformation in this direction proceeded applicants for employment from amongst them might find situations through the Bureau in the country, and in this way lead on to the desired result.

The cost of such an experiment would not be very great; and, if some such scheme were adopted, it would, I believe, give results as satisfactory as similar schemes carried out on the Continent of Europe, especially in France, Germany, Holland, &c., where, as a recent traveller remarked, a beggar is not to be seen in the streets, and the loafer has no chance to follow his profession, being compelled to accept one of two alternatives—either work or starve. I think this scheme is worthy of a trial, and, if the reformation of this class can be brought about at a comparatively small cost to the State, the country would be relieved of a considerable financial burden, and society of an increasing nuisance and a danger.

It must be borne in mind that this paragraph does not refer to those of the unemployed who are honestly desirous of obtaining work, but are unable to do so, of which, I regret to say, there is still a great number, but to that other class who are always loudly professing to look for work, at the same time praying that they may not get it.

In addition to the estimated number of thorough professional loafers, are a number treading closely on their heels, and who work sufficiently long to enable them to unfit themselves for more exertion by getting drunk; and there is still another class, principally of younger men, whose only work consists of waiting until others more honest and less cute earn it, and then proceed to fleece them in various ways. I regret to say that this class appears to be on the increase, judging by the large number of such cases noted at the Bureau.

Registry Offices.

During the existence of the Bureau numbers of persons engaged through registry offices for employment in the country have applied to me for railway passes to enable them to reach their destinations; and in all cases which I believe to be genuine I have granted such passes, at the same time taking an order on the employer in each case for a refund.

My experience, however, of these registry offices during the existence of the Bureau leads me to the conclusion that a great many abuses exist in connection with them which might and should be remedied.

In the interest of the unemployed themselves I would strongly recommend that these offices should be licensed and placed under Government supervision. The principal reason that prompts me to bring this matter specially under notice is that I am satisfied that several of those professing to have obtained employment through registry offices have been victimised. After reaching their destinations by means of the railway pass obtained from the Bureau, some of these find that they are "not wanted," in some cases that no authority was given for their engagement, whilst in others there has been absolutely

no employment. After spending, perhaps, all they possessed in registry fees, the result is that they have found themselves stranded in a strange place without employment, and without the means for existence whilst they looked for it. When a person applies for a railway pass the original letter from the employer must be produced, and when this is not forthcoming a pass is rarely granted.

In some cases several persons I am certain are engaged for one and the same place, in others the offices are established simply to obtain fees from the highest bidder. It also happens, from information I have obtained the fare has in some cases been paid in advance by the employer and retained by the registry office, and then the man engaged has been sent to the Bureau to obtain a pass. Several parties have had to sell almost all they possessed to raise the registry office fees, in some cases as much as £3, and in these instances, if the Bureau did not come to the relief, the applicants, perhaps a married couple would be left destitute.

In the interests of all those seeking employment through these offices, I would recommend that they all be licensed in order to prevent fraud, and placed under the supervision of the Government, and so prevent poor people from being victimised.

This would result in benefit to the unemployed and be a source of revenue to the state.

Agencies.

I may mention here with respect to the establishment of agencies throughout the Colony in connection with this department as recommended in the report of the Select Committee on the working of the Bureau, that it is questionable whether they would realise all that is expected of them by their advocates. Personally, I should like to see three or four agencies established in a few large centres of population in the country with a view to practically testing their utility. One great objection to them would be the expense attendant upon the appointment of new sets of officers, but if it could be arranged that in each centre an officer already holding a Government appointment should perform the duties in addition to those he is already discharging this objection would be removed.

One direct benefit from the establishment of these agencies would be the collection of reliable information as to the state of the labour market in the country districts, in regard to which there has been some difficulty in the past. In regard to this suggestion to establish agencies a meeting was recently held at Bathurst at which the unemployed of that city to the number of from eighty to 100 were present. At that meeting a resolution was submitted affirming the desirableness of establishing in Bathurst an agency in connection with the Government Labour Bureau. Opposition of an unmistakable character was shown to the proposal, the argument being that such an agency would be the means of attracting a large number of the unemployed to Bathurst who would not otherwise go there. The motion to establish the agency was subsequently lost. The Mayor at the close of the meeting alluding to the necessity of giving relief to the unemployed requested those of this class who were present to call at the Council Chamber on the following morning, when temporary work of some kind would be provided and rations given to them in lieu of wages. Strange to say, out of the large number of the unemployed present at the meeting only some five or six turned up to take work. Therefore, so far as this district is concerned, the establishment of an agency in connection with the Bureau did not meet with the approval of many of those present, including the unemployed who voted against the resolution.

New Zealand Labour Bureau.

In the report of the New Zealand Department of Labour and Bureau of statistics dated 10th June 1893, a paragraph appears relating to the working of this department, to which I deem it worthy to direct your attention. In this it states that the number of men assisted by the New Zealand department during the year was 3,874, whilst the total assisted since it started in 1891, a period of one year and ten months was 6,467. Comparing these figures with ours, I would point out that we have assisted and sent to work in the two years during which the Bureau has been in existence, nearly three times that number, viz., 18,503.

A subsequent paragraph in the same report states that the New Zealand Bureau has been somewhat more successful than those established in other of the Australasian Colonies. "In New South Wales, continues the paragraph, the Parliamentary Committee appointed to report on the working of the Bureau in that colony, criticises it rather unfavourably, pointing out that there has been neglect of country agencies, and a tendency to centralize the unemployed in the capital city, and that the Sydney Bureau has been used as a means of lowering wages in the country districts." Without disputing the claim that is made for the successful working of the New Zealand Institution, permit me to observe that notwithstanding all the power and influence of a ministerial department, together with its provincial agencies—with all these advantages (if they are advantages)—our report shows, as already stated, nearly three times the work done. No doubt this in consequence of having a much larger population and number of unemployed as compared with those of New Zealand. This Bureau has had nothing to do with the reduction of wages which has taken place. All that is done is to bring employer and employee together, leaving the matter of wages to be settled by them. The wages question is plainly a matter of supply and demand. For instance, if 50 men are wanted and 500 offer, there is the danger of reduction of wages, but, if 500 men are required and only 50 offer, an increase of wages will assuredly take place. I would further add that we have received back from the men so sent to employment, the large sum of £3,812 6s. 1d., as a refund of railway and steamer fares since the system was inaugurated, some 6 months after the opening of the Bureau. So far as the New Zealand institution is concerned, I cannot find in their report any mention of refund of fares on part of the men sent to work, which is a matter of importance to consider when contrasting the efficiency of the two departments.

And in this connection it may be said, further, that hundreds of letters have been received from both employers and employees expressing their approval of the Bureau,—on the one hand because it has supplied the person wanted, and on the other because it has been the means of forwarding on to employment men who otherwise might have up till now been filling the ranks of the unemployed in Sydney.

General.

General.

The average daily attendance of the unemployed at the Bureau is from 400 to 500. They come and go all day and if nothing turns up to suit them they go elsewhere looking for work.

There is a considerable decrease of the unemployed from the other colonies this year compared with last. The number registered in 1893 was 1,057; the number for the previous year 1892 was 1,771; showing a decrease of 714. All those residing in the colony over three months are registered as citizens of New South Wales. It is probable that a number of those from the other colonies on our books do not give us correct information on this point.

The conduct of the men on the whole is good and orderly, and they give very little trouble except when a few larrikin loafers come among them and who have to be dealt with firmly.

The police returns for the year are less than last, the convictions for this year being 195 as against 399 for the previous year, showing a decrease of 204.

The work at the Bureau has almost doubled during the year 1893 in consequence of the large number going fossicking on the old gold-fields daily, and the great increase in the applicants for relief in the city and suburbs. Each application has to be inspected, reported on, checked, and marked by the superintendent for rations if correct; there is also the superintending the administration of relief in the country districts.

Registering and reporting on all applications for the Labour Settlements, together with a very large increase in the correspondence from all parts of the colony, which has to be attended to, answered, and frequently necessitating the whole of the staff remaining back after office hours to keep pace with the work. I am pleased to be able to report that notwithstanding the increased duties, the whole of the officers of the Labour Bureau do their work cheerfully and well, conscientiously keeping in view the object for which the Institution was established by the Government.

Appended are statements in detail of the work and operations of the Bureau for the year ending February 17th, 1894.

JOSEPH CREER,
Superintendent.

RETURN showing the total number registered during the year ending 17th February, 1894, and where such last arrived from or were employed.

Arriving from the other colonies, &c. (As per Schedule)	1,057
Arriving direct from the country, as under:—	
Northern District	556
Southern " 	526
Western " 	495
	<hr/>
1,577	
From the City and Suburbs	9,511
	<hr/>
Total registered for the year	12,145

SCHEDULE giving details as to Families, &c., of the number registered during the year ending 17th February, 1894.

Number registered	12,145
Married men	5,048
Single men	7,097
Children represented by parents	11,991
Do self-supporting	1,776
Do dependent... ..	10,215

CLASSIFICATION of Trades and Occupations registered during the year ending February 17th, 1894.

Trade or Occupation.	Number Registered.	Trade or Occupation.	Number Registered.
Accountants	6	Canvasers	19
Asphalters	7	Carpenters	570
Auctioneers	3	Caretakers	8
Architects	1	Clerks. &c.	258
Artists	4	Cellarmen	5
Bakers	147	Cooks	314
Basketmakers	7	Coachmen	6
Barbers	2	Coachbuilders	41
Barmen and boots	30	Coachpainters	5
Blindmakers	2	Commercial travellers	15
Blacksmiths	231	Coppersmiths	5
Boat-builders	4	Cordialmakers	9
Bottlers	3	Confectioners	8
Bootmakers	89	Coopers	8
Bookbinders	4	Curriers	8
Boilermakers	74	Dairy hand	66
Brewers	5	Dyers	3
Brickmakers	81	Drapers	44
Bricklayers	206	Dentists	1
Bridge hands	16	Drainers	3
Brass trade	5	Engine-drivers	112
Butchers	199	Engineers	158
Builders	5	Electricians	4
Brush hands	1	Fitters	19
Billiard-markers	1	Farm hands	473
Carters	348	Farriers	11

Trade or Occupation.	Number Registered.	Trade or Occupation.	Number Registered.
Factory hands	8	Pressmen	12
Fellmongers	3	Plasterers	117
Fencers	3	Photographer	1
Firemen	99	Portmanteau-maker	1
Flour millers	8	Quarrymen	56
Fruit packers	1	Rubble mason	1
French polishers	14	Saddlers	14
Gardeners	155	Sawyers	38
Generally usefals	762	Salosmen	21
Glass-maker	1	Sailmakers	9
Grooms	338	Shipwrights	26
Grocers	86	Slaters	3
Harness-makers	40	Stewards	26
Hospital wardsmen	11	Storekeepers	96
Hairdressers	33	Shearers	29
Hatters	4	Station hands and Bushmen	763
Ironmoulders	63	Stonemasons	134
Ironmongers	13	Surveyors	2
Ironworkers	23	Surveyors' hands	23
Jewellers	5	Signwriters	6
Japanner	1	Stationers	3
Labourers	3,285	Scamen	20
Leather finishers	1	Tailors	59
Lumpers	2	Tanners	8
Locksmiths	2	Tallow Maker	1
Laundryman	1	Tailor's Presser	1
Machinists	26	Tinsmiths	41
Marble trades	11	Tilers	2
Married couples	42	Tutors	22
Master Mariners	3	Turners (Wood or Iron)	5
Miners	1,200	Tobacco Twisters	3
Millwrights	5	Telegraph Operator	1
Modellers	1	Upholsters	11
Musicians	6	Umbrella Makers	1
Overseers	8	Vigueron	2
Orchard hands	14	Vocalist	1
Opticians	1	Watchmakers	5
Paper-makers	1	Waiters, &c.	31
Painters and Paperhangers	245	Watchmen	7
Pattern-makers	5	Warehousemen	3
Packers	13	Wheelwrights	27
Platclayers	2	Woolclassers, &c	52
Porters	6	Wood Carver	1
Plumbers	112	Wireworkers	6
Potters	6	Callings not Classified	67
Pile-driver	1		
Printers	87	Total	12,145

GOVERNMENT LABOUR BUREAU.

TABLE showing various Trades and Callings to which persons have been sent in Town and Country; Summary of average Wages recorded; Total Refunds for Passes for year ending 17th February, 1894; together with comparative figures for the previous twelve months, being the opening year of the Bureau.

Trades and Callings.	Year ending 17th Feb., 1894.			Year ending 17th Feb., 1893.			Increase.		Decrease.		Wages—Year ending 17th February.		Refunds for Passes, Year ending 17th February.		Remarks.
	Town.	Country	Total.	Town.	Country	Total.	Town.	Country	Town.	Country	1894.	1893.	1894.	1893.	
Asphalters	4	1	5	8	...	8	...	1	4	...	Contract	Contract	£ s. d.	£ s. d.	Refunds.—Total amount received since the system of refunds was commenced is £3,812 6s. 1d.
Artist Models	4	1	5	3	...	3	1	1	...	1s. to 2s. 6d. per hour.	.....	.....	.....	.....
Brass Finishers, &c.	7	...	7	1	...	1	6	...	...	1s. per hour	.....	.....	.....	.....
Bricklayers	31	14	45	61	85	146	...	...	30	71	8s. to 11s. per day	10s. to 12s.	.....	.....
Brickmakers	2	14	16	...	16	16	2	...	...	2	Contract	Contract	.....	.....
Blacksmiths, &c.	22	41	63	80	92	110	4	...	...	51	30s. to 50s per week.	30s. to 55s.	.....	.....
Bakers	17	48	65	37	76	113	...	...	20	28	" " "	40s. to 55s.	.....	.....
Bootmakers	6	15	21	3	43	46	3	...	...	28	Piecework	Piecework	.....	.....
Butchers	17	68	85	35	72	107	...	...	18	4	20s. to 50s. per week.	25s. to 50s.	.....	.....
Billiard Markers	4	...	4	1	...	1	3	...	...	...	15s. to 20s. per week.	20s., found	.....	.....
Basketmakers	2	1	3	...	...	...	2	1	...	...	Piecework	Piece-work	.....	.....
Barbers	5	7	12	3	30	33	2	...	...	23	15s. to 30s., found	.....	.....	.....
Batmakers	2	...	2	...	...	...	2	...	...	...	Piecework	Piece-work	.....	.....
Boatbuilders	2	1	3	...	...	...	2	1	...	...	1s. per hour	.....	.....	.....
Brewer's Hands	2	2	4	...	...	...	2	2	...	...	20s. to 35s. per week	.....	.....	.....
Bookbinders	1	...	1	...	...	...	1	...	...	...	.....	.....	.....	.....
Bellman	5	...	5	...	...	...	5	...	...	...	.....	.....	.....	.....
Boilermakers and Foundry Hands	12	26	38	18	31	52	...	...	6	8	6s. to 11s. per day	.....	.....	.....
Bushmen .....	...	186	186	...	286	286	...	...	...	100	10s. to 25s., found	15s. to 30s.	.....	.....
Bridge Hands .....	...	57	57	...	100	100	...	...	...	43	6s. to 15s. per day	.....	.....	.....
Brassmoulders	9	3	12	1	...	1	8	3	...	...	7s. to 11s. per day	.....	.....	.....
Cauvassers	169	28	197	129	11	140	40	17	...	...	Salary & Commission.	Salary & Commission	.....	.....
Carpenters and Joiners	176	83	259	152	200	352	24	...	...	117	7s. to 12s. 6d. per day.	8s. to 12s.	.....	.....
Carpenters (Bridge) .....	...	25	25	...	43	49	...	...	...	24	8s. to 10s per day	9s. to 12s.	.....	.....
Cartakers, &c.	5	5	10	15	...	15	...	5	10	...	8s. to 20s., found	10s. to 20s.	.....	.....
Casemakers	2	...	2	5	...	5	...	...	3	...	6s. to 7s. 6d. per day	.....	.....	.....
Caulkers	11	5	16	...	...	...	11	5	...	...	1s. per hour	.....	.....	.....
Clerks, &c.	17	14	31	22	33	55	...	...	6	19	10s. to 40s.	20s. to 60s.	.....	.....
Cooks	33	153	186	97	216	313	64	63	12s. 6d. to 40s	15s. to 50s.	1894. { Camp Cooks, 12s. 6d. to 30s. { Hotel " 20s. to 40s. { Station, &c., 15s. to 30s.
Coppersmiths	3	...	3	1	...	1	2	...	...	...	.....	.....	.....	.....
Coach Trades	14	43	57	25	163	188	11	...	...	120	.....	.....	.....	.....
Cordial Makers	1	3	4	1	...	1	1	2	...	...	15s. to 25s., found	.....	.....	.....
Coopers	6	4	10	1	...	1	5	4	...	...	1s. per hour	.....	.....	.....
Curriers and Tanners	1	7	8	...	2	2	1	5	...	...	7s. to 8s. per day	8s.	.....	.....
Drapers	1	6	7	...	30	30	1	...	...	24	30s. to 40s week	30s. to 50s.	.....	.....
Drivers	29	57	86	79	56	135	...	1	50	...	10s. to 25s. week	.....	.....	.....

TABLE showing various Trades and Callings, &c.—continued.

Trades and Callings.	Year ending 17th Feb., 1894.			Year ending 17th Feb., 1893.			Increase.		Decrease.		Wages—Year ending 17th February.		Refunds for Passes, Year ending 17th February.		Remarks.
	Town.	Country.	Total.	Town.	Country.	Total.	Town.	Country.	Town.	Country.	1894.	1893.	1894.	1893.	
Engineers, Drivers, &c.	11	39	50	17	51	68	...	...	6	12	30s. to 45s. week	40s. to 50s.	£ s. d.	£ s. d.	
Farm and Orchard Hands	20	459	479	46	388	434	71	...	26	...	10s. to 20s., found	12s. to 25s. ....	.....	.....
Fishermen	1	3	4	...	...	...	1	3	...	...	.....	.....	.....	.....
Firemen	3	7	10	5	17	22	...	...	2	10	7s. to 9s. day	.....	.....	.....
Flour Mill Hands	3	6	9	...	...	...	3	6	...	...	20s. to 30s., found	.....	.....	.....
French Polishers.....	6	5	11	2	1	3	4	4	...	...	.....	.....	.....	.....
General Servants, Governesses, &c.	30	155	185	10	20	30	20	135	...	...	7s. to 20s. week	.....	.....	.....	( Nurse Girls, 2s 6d. to 7s. 6d. wk. { Governesses, £20 to £40 p. a.
Gardeners	79	64	143	50	112	162	29	...	49	...	10s. to 20s., found	12s. 6d. to 30s.....	.....	.....
General Usefals	257	345	602	...	...	646	...	...	...	...	8s. to 20s., found	.....	.....	.....
Grocers	6	3	9	...	9	9	6	...	6	...	25s. to 40s.....	25s. to 50s. ....	.....	.....
Grooms	24	55	79	35	75	110	...	...	11	20	10s to 25s., found	15s. to 30s. ....	.....	.....
Hospital Attendants	2	7	9	2	5	7	...	2	...	...	.....	.....	.....	.....
Iron Moulders	1	4	5	...	...	...	1	4	...	...	.....	.....	.....	.....
Ironmongers	1	1	2	...	...	...	1	1	...	...	25s. week, found	.....	.....	.....
Kitchenman	20	2	22	31	6	37	...	...	11	4	8s. to 20s. week, found	15s. to 20s. ....	.....	.....	<i>Re Labourers.</i> —For the year ending 1893, large numbers were employed on North Shore and other works as labourers; a large number of railway labourers were also sent out.
Labourers (General)	204	313	517	787	699	1,486	...	...	...	...	.....	.....	.....	.....
Laundrymen	2	2	4	1	...	1	1	1	...	...	15s. to 20s. week, found	.....	.....	.....
Machinists	3	...	3	1	9	10	2	...	...	9	1s per hour .....	.....	.....	.....
Master Mariners .....	...	2	2	...	...	...	...	2	...	...	Wages & Commission	Wages & Commission	.....	.....
Marble Hands .....	...	3	3	...	1	1	...	2	...	...	8s. to 10s. per day	.....	.....	.....
Married Couples	14-28	114-228	256	5-10	152-304	314	9	...	38	...	£50 to £80 per annum	£55 to £90 .....	.....	.....
Millwrights	1	2	3	...	...	...	1	2	...	...	1s. per hour .....	.....	.....	.....
Musicians	2	2	4	1	6	7	1	...	5	...	Contract & Tribute	Contract & Tribute	.....	.....
Miners .....	...	301	301	...	165	165	...	130	...	...	Contract & Tribute	Contract & Tribute	.....	.....
Miners (Fossickers from Sydney)	...	2,989	2,989	...	...	...	...	2,989	...	...	.....	.....	.....	.....	Sent from Sydney only.
Miners (Fossickers from other places).	...	1,527	1,527	...	...	...	...	1,527	...	...	.....	.....	.....	.....	Sent from different parts of the colony on to various fields.
Netmakers	1	2	3	1	2	...	...	...	...	...	.....	.....	.....	.....
Painters and Paperhangers	64	21	85	68	240	308	...	...	4	219	6s. to 9s. per day	8s. to 10s. ....	.....	.....
Patternmakers	2	2	4	3	5	8	...	...	1	3	Contract	Contract .....	.....	.....
Pipelayers	2	6	8	2	...	2	...	6	...	...	6s. to 8s. per day	.....	.....	.....
Plasterers	10	21	31	25	94	119	...	...	15	73	6s. to 10s. per day	8s. to 10s. ....	.....	.....
Platelayers	4	...	4	1	...	1	3	...	...	...	7s. to 9s. per day	.....	.....	.....
Photographers	2	2	4	...	...	...	2	2	...	...	.....	.....	.....	.....
Plumbers	18	12	30	15	34	49	3	...	...	22	7s. to 9s. per day	8s. to 9s. ....	.....	.....

TABLE showing various Trades and Callings, &c.—continued.

Trades and Callings.	Year ending 17th Feb., 1894.			Year ending 17th Feb., 1893.			Increase.		Decrease.		Wages—Year ending 17th February.		Refunds for Passes, Year ending 17th February.		Remarks.
	Town.	Country	Total.	Town.	Country	Total.	Town.	Country	Town.	Country	1894.	1893.	1894.	1893.	
Printers	10	8	18	28	51	79	18	43	£ s. d.	£ s. d.	{ Station hands.—Ordinary Station hands generally, 20s a week and found, though as low as 15s. has been recorded.
Quarrymen	19	19	38	10	20	30	0	...	...	1	7s. to 9s. per day	7s. to 9s.	.....	.....
Reporters .....	...	2	2	...	...	...	...	2	...	...	.....	.....	.....	.....
Saddle and Harness Makers	2	11	13	...	11	11	2	...	...	...	30s. to 50s. per week	30s. to 50s.	.....	.....
Sawyers.....	4	11	15	9	84	93	...	...	4	73	piece-work	piece-work	.....	.....
Shearers .....	...	210	210	...	517	517	...	...	...	307	20s. per 100	20s. per 100	.....	.....
Shipwrights	12	11	23	...	35	35	12	...	...	21	1s. per hour	9s. to 11s. per day	.....	.....
Shorthand-writers	1	...	1	...	...	...	1	...	...	...	.....	.....	.....	.....
Signwriters	3	2	5	1	...	1	2	2	...	...	.....	.....	.....	.....
Slaters	2	1	3	4	...	4	...	1	2	...	7s. to 8s. per day	.....	.....	.....
Smelters .....	...	6	6	...	...	...	...	6	...	...	.....	.....	.....	.....
Soapmakers	2	2	4	...	...	...	2	2	...	...	.....	.....	.....	.....
Storekeeper, Packers, &c.	23	7	30	25	16	41	...	...	2	0	20s. to 40s.	.....	.....	.....
Station hands .....	...	468	468	...	462	462	...	6	...	...	10s. 6d. to 27s. 6d.	15s. to 30s.	.....	.....
Stonemasons.....	10	8	18	9	38	47	1	...	...	30	1s. per hour	10s. per day	.....	.....
Surveyors' hands.....	...	9	9	9	16	19	...	...	3	7	12s. 6d. to 20s.	.....	.....	.....
Sleeper-squarers .....	...	28	28	...	104	104	...	...	...	76	1s. 4d. to 1s 10d. p. pair	1s. 9d. to 1s. 10d.	.....	.....
Teamsters .....	...	11	11	...	...	...	...	11	...	...	12s. 6d. to 30s.	17s. 6d. to 30s.	.....	.....
Tailors	3	16	19	18	9	27	...	7	15	...	piece-work	piece-work	.....	.....
Tinmiths	14	5	19	8	9	17	6	...	...	4	25s. to 40s. week	.....	.....	.....
Turners	2	2	4	1	7	8	1	...	...	5	8s. to 10s. day	.....	.....	.....
Tutors .....	...	8	8	...	5	5	...	3	...	...	£20 to £50 per annum	£30 to £70	.....	.....
Upholsterers	3	1	4	...	4	4	3	...	...	3	.....	.....	.....	.....
Village Settlements.....	...	322	322	...	...	...	...	322	...	...	.....	.....	.....	.....
Watchmakers .....	...	1	1	...	...	...	...	1	...	...	.....	.....	.....	.....
Waiters, Stewards, &c.	7	15	22	23	44	67	...	...	16	29	10s. to 25s. week	15s. to 27s. 6d.	.....	.....
Weavers .....	...	2	2	...	...	...	...	2	...	...	.....	.....	.....	.....
Well-borers .....	...	16	16	...	55	55	...	...	...	30	15s. to 45s. week	25s. to 50s.	.....	.....
Whitsmiths	2	...	2	...	...	...	2	...	...	...	.....	.....	.....	.....
Wheelwrights	5	14	19	12	37	49	...	...	9	23	40s. to 55s. week	40s. to 60s.	.....	.....
Wireworkers	5	...	5	...	...	...	5	...	...	...	.....	.....	.....	.....
Wool hands, Fellmongers, &c. ....	...	72	72	...	116	116	...	...	...	34	.....	.....	.....	.....
Wool-classers .....	...	5	5	...	5	5	...	...	...	...	.....	.....	.....	.....
Total	1,548	8,801	10,349	8,154	Increase.	2,195	2,676 10 0	1,185 16 1	Total Refunds, £3,812 6s. 1d.

An increase of 2,195 is shown on the number sent out to employment for the year ending 17th February, 1894, over the previous year.

GOVERNMENT LABOUR BUREAU.
STATEMENT of Relief from 1st February, 1893, to 31st January, 1894.

Applications received from—		In receipt of relief at end of year.		Refused and discontinued.		Weekly applications for the year.	Average per week.
Families.	Children.	Families.	Children.	Families.	Children.		
2,169	6,319	514	1,234	1,655	5,085	19,705	379

Month.	Rations issued.		Amount.	Special Relief in sickness.	Total cost of Relief.
	No.	Price.			
		s. d.	£ s. d.	£ s. d.	£ s. d.
February	2,122½	1 6	159 3 9	0 1 9	159 5 6
March	2,097½	1 6	157 6 3	0 3 6	157 9 9
April	2,343	1 6	175 14 6	0 7 7	176 2 1
May	2,374½	1 6	178 1 9	0 1 9	178 3 6
June	3,668	1 6	275 2 0	0 1 9	275 3 9
July	4,903	1 6	367 15 3	0 16 3	368 11 6
August	1,890	1 6	366 15 0	0 10 9	367 5 9
September.....	{ 1,338	{ 1 6	517 12 7	2 3 10½	519 16 5½
	{ 5,891	{ 1 5			
October	5,789	1 5	410 1 1	2 9 11	412 11 0
November	5,586½	1 5	395 14 2½	4 2 7	399 16 9½
December	6,627½	1 5	460 8 11½	6 12 1	476 1 0½
January.....	4,894	1 5	346 13 2	3 5 9	349 18 11
	52,525*	.....	3,819 8 6	20 17 6½	3,840 6 0½

* 23,737 at 1s. 6d.; 23,788 at 1s. 5d.

RELIEF to Country Districts.

Municipality or Township.	Amount expended in relief.	Amount of £ for £ Subsidy.	Total.	Municipality or Township.	Amount expended in relief.	Amount of £ for £ Subsidy.	Total.
	£ s. d.	£ s. d.	£ s. d.		£ s. d.	£ s. d.	£ s. d.
Toralba & W. Wallsend	201 10 0	.....	210 10 0	Carrington	50 0 0	.....	50 0 0
Dudley	147 11 7	.....	147 11 7	Wickham	50 0 0	.....	50 0 0
Adamstown	72 4 6	50 0 0	122 4 6	Miami	50 0 0	.....	50 0 0
Plattsburg.....	100 0 0	.....	100 0 0	Charlestown	4 11 6	30 0 0	34 11 6
Hamilton	50 0 0	30 0 0	80 0 0	Newcastle Soup			
Waratah	50 0 0	.....	50 0 0	Kitchen	150 0 0	.....	150 0 0
Merewether	50 0 0	40 0 0	90 0 0	Greta.....	431 12 9	.....	431 12 9
Lambton	50 0 0	.....	50 0 0				
New Lambton	50 0 0	50 0 0	100 0 0				
				Total.....		£	1,709 10 4

RETURN of Police Reports for the year ending 17th February, 1894, and a comparison with it and the Return for the previous year.

Offence.	1st Year.	2nd Year.	Offence.	1st Year.	2nd Year.
Drunkenness	290	118	Pretences	6	2
Theft	34	25	Artillery desertion .....	.....	1
Riotous and assault	21	22	Gambling	6	1
Indecency	8	2	Embezzlement.....	2	.....
Begging and vagrancy	11	9	Wife desertion.....	4	.....
Language	11	11			
Breaking, entering (suspected persons)	6	4	Totals.....	399	195

SECOND ANNUAL RETURN showing the number of Arrivals from the other Colonies, the United Kingdom, and Foreign parts, and residents here, all within three months, from 18th February, 1893, to 17th February, 1894; also a comparison of same with the first Annual Return.

First Annual Return.		Second Annual Report.	
Victoria	598	Victoria	413
Queensland	332	Queensland	188
New Zealand.....	196	New Zealand	104
Tasmania	110	Tasmania	60
South Australia	67	South Australia	34
Western Australia	20	Western Australia	21
United Kingdom	301	United Kingdom	142
Foreign parts	147	Foreign parts	95
Total.....	1,771	Total	1,057

Showing a decrease of 714.

1894.

NEW SOUTH WALES.

LABOUR SETTLEMENTS ACT.

(REGULATIONS UNDER.)

Presented to Parliament, pursuant to Act 56 Vic. No. 34, sec. 8.

Department of Lands,
Sydney, 10th May, 1894.

REGULATIONS UNDER THE LABOUR SETTLEMENTS ACT:

It is hereby notified, for public information, that the following Regulations, made in pursuance of the Labour Settlements Act, by the Board of Control of the Labour Settlement at Wilberforce, have been approved by His Excellency the Governor, with the advice of the Executive Council, to apply to such Labour Settlement.

[94-122 L.S.L.]

HENRY COPPLAND.

REGULATIONS made in pursuance of the Labour Settlements Act by the Board of Control of the Labour Settlement at Wilberforce.

1. The Board shall, not later than at its fourth meeting, and thereafter annually during the month of January, and also from time to time as necessity shall arise, elect from among its own members a Chairman, Vice-Chairman, Honorary Treasurer, and Honorary Secretary.

2. The retiring Chairman, Vice-Chairman, Honorary Treasurer, and Honorary Secretary shall be eligible for re-election, and shall continue in office until their successors are elected.

3. The Chairman or Vice-Chairman shall preside at all meetings of the Board at which they may be present, and the officer presiding shall have a casting but not a deliberative vote.

4. During the temporary absence of the Chairman and Vice-Chairman, the members of the Board assembled at any meeting may elect any one of their number to act as Chairman. An acting Chairman shall do all such things as the Chairman is required to do by these Regulations during the absence or inability of the Chairman or Vice-Chairman.

5. The Chairman, the Honorary Treasurer, and the Honorary Secretary shall sign all cheques authorised by the Board; but in the absence of one or more of them, the signatures of such member or members as may be duly authorised by the Board to sign in their stead shall be sufficient.

6. The Honorary Secretary shall keep minutes of all meetings of the Board, receive and conduct the Board's correspondence, subject to the general supervision and directions of the Board, and act generally as the Board's agent in all such matters as the Board shall require.

7. In addition to the ordinary meeting of the Board, to be held at least once in every month, an extraordinary meeting of the Board may be summoned at any time by authority of the Chairman, or upon the requisition of three members of the Board. At every meeting four members shall form a quorum. Not less than twelve hours' notice in writing of the time and place of any Board meeting shall be given; but no such notice shall be necessary for any regular Board Meeting which the Board may have arranged to hold at certain stated intervals.

8. The Honorary Treasurer shall keep all the accounts of the Board and pay and receive all moneys on the Board's behalf. No money shall be paid or expended without the authority of the Board being first had and obtained, and a receipt in writing shall in every case be taken, which receipt shall be filed as part of the records of the Board.

9. The Governor may appoint two auditors who shall from time to time, but not less than once in each period of six months, examine the Board's accounts and certify to the accuracy and general correctness of the statements prepared by the Honorary Treasurer, and of any abstract or balance sheet professing to represent the same. They shall also report upon the manner in which such accounts have been kept and make any suggestions which they may think necessary.

10. All orders of the Board for provisions, goods, or otherwise, shall be signed by the Chairman, the Honorary Secretary, and the Honorary Treasurer, on forms provided for the purpose, butts of which forms shall be kept as part of the records of the Board.

11. The Board shall not be responsible for any debt incurred by, or on behalf of, any individual member of the Settlement, nor for any debt incurred without the order of the Board.

12. The Board may from time to time appoint one of the enrolled members of the Settlement as a Working Overseer of the Settlement, and such overseer shall see that any directions of the Board are carried out, and shall, subject to the Board's directions, apportion and determine the character of the work to be performed on the Settlement, and fix the hours during which it shall be performed. Any person appointed as Overseer shall, if a member of the Board, resign his position as member of such Board before he shall be competent to act as Overseer.

13. The Board may from time to time appoint one of the settlers to act as Storekeeper, and it shall be the duty of the storekeeper to keep an accurate account of all the provisions received and issued by him, and of all the property of the Settlement, including tents, tools, implements, and vehicles, live stock, and stock in trade, and property or goods of every kind. He shall also keep a record of all changes in the said property and of the incomings, outgoings, and balance, in such a form as shall be required by the Board, and he shall embody the same in a report to the Honorary Treasurer whenever such report shall be called for by the Board. The Board shall require such a report at least once every three months.

14. The Board may, whenever it shall deem it expedient, call upon the Overseer or Storekeeper to resign, or may remove them from office and appoint successors in their stead, subject to Regulation No. 13.

15. The principle of the Settlement shall be co-operative. Members shall each work on an average at least forty-eight hours in every week for their common benefit, but in any case of necessity, emergency, or expediency, any such members shall work such number of hours as the Overseer shall direct. No member shall be credited in the time-book with any excess over such forty-eight hours, except the Overseer shall have directed it as necessary. The Overseer shall keep a time-book, in which shall be entered at the close of each day the number of hours every individual member has worked, and every Saturday there shall be issued to each member, and publicly exhibited, a record of the number of hours he has worked during that week. Beyond the number of hours during which any member shall be compelled to work, the time and earnings of such members shall be at his own disposal, provided that the Board shall have full power to restrain him from using such spare time, or any member whatever, from acting in such a manner as may interfere with the work of the Settlement as a whole.

16. No work for private emolument outside the Settlement shall be undertaken by any person resident in the Settlement, unless he shall have first obtained express permission from the Board to undertake the same.

17. Any part of the labour at the disposal of the Board may be employed in works outside the limits of the Settlement, on such terms and conditions (not inconsistent with these Regulations) as the Board may see fit, provided that the Board shall in no case accept any such work on such terms as might compete on the basis of a lower wage with workmen outside the Settlement.

18. All moneys derived from the Settlement, and all moneys earned by the members thereof, whether by employment outside the Settlement or not, except moneys earned by a member in his own time, shall be paid to the Board, and the Board shall deposit all such moneys in a bank to be approved by the Minister, to be held in trust for such Board. Such moneys shall be applied or retained by the Board in the first instance to such extent as may be necessary for the purposes of the Settlement; but if the whole of such moneys are not so required, the portion not required may be dealt with in the following manner:—Such portion as the Board shall consider desirable shall be carried to a sinking fund to provide for the first rent required by section 3 of the Act, and the first instalment required by section 6 of the Act, due at the expiration of the fourth year of the lease; and when the amounts carried to such sinking fund shall equal the amounts due to the Crown at the expiration of the fourth year of the lease, the sinking fund shall be held to be satisfied and shall cease. The balance may, from time to time, be divided among the members thereof, and each member's proportion of the money distributed for any period shall correspond to the proportion which the number of hours he shall have worked shall bear to the total number of hours worked by the whole of the members of the Settlement during such period. Such number of hours, in either case, shall be ascertained from the Overseer's book, and shall be based on the record contained therein.

No part of any moneys advanced to the Board by the Colonial Treasurer under section 6 of the Act, and no part of any moneys received from such persons as are referred to in that section, shall be distributed under this Regulation.

19. Any child, over the age of 14 years, of a member of the Settlement, may, if physically capable, be required by the Board to assist thereon, but shall not be entitled to anything further than the allowance prescribed by Regulation 22. Nothing herein shall prevent the employment of such child elsewhere if the parent shall so desire. Provided that if any child over 14 years of age shall be employed otherwise than for the Settlement, no rations shall be allowed; but no part of such child's earnings shall be claimed by the Board.

20. Any settler disobeying any direction, rule, or order of the Board, or any direction of the Overseer, shall be liable to a penalty not exceeding £2 for every such offence, which shall be a charge against his share of the proceeds of the Settlement; and obstinate and continued disobedience of any such rule or direction shall render any settler guilty of the same liable to be disenrolled.

21. A plan of the Settlement, dealing with residence areas, reserves, sites for the establishment of industries, and the allocation of particular allotments to the individual members, shall be designed by the Board, and submitted to the Minister for Lands for approval; and residence sites approved by the Minister may be assigned by the Board for occupancy to individual members of the Settlement, who shall thereupon become entitled to retain and use solely for their own benefit such residence sites so long as they shall remain members of the Settlement.

22. The storekeeper on the Settlement shall on application issue each week to the settlers and their families, such provisions or other articles (exclusive of clothing) to the following values as may be kept in the store:—

Each enrolled member.....	6s. per week.
The wife of an enrolled member	4s. „
Each child over 14 years of age in work for the Settlement	8s. „
Children under 14 years of age	1s. „

23. Such clothing and materials as shall be necessary, and as the available funds of the Board will admit of, may be advanced by the Board to the members of the Settlement for the use of such members or their families.

24. The maintenance of the members of the Settlement and their families shall be charged as a whole upon the funds of the Settlement, until the net results of the labours of the Settlers shall produce more than the amount necessary for the subsistence of such Settlement, when the cost of maintenance of any enrolled member and his family shall be taken into account against him in connection with the distribution of such proceeds.

25. Any member admitted to the Settlement after the expiration of six months from the establishment thereof, if not a transferee as provided by Regulation 26, shall be debited with such an amount as the Board shall deem equitable. Such member shall not receive any part of the proceeds of the Settlement beyond the amount necessary for subsistence until such debit shall have been extinguished, but on the distribution of any proceeds he shall, notwithstanding, be credited with such proportion thereof as he might have received had no amount been debited against him. The amount credited but withheld from such member, shall be available for distribution among such other members of the Settlement as may be entitled to share in the general distribution of any proceeds.

26. Any member after the expiration of six months from his arrival on the land may, if not disenrolled in the meantime, transfer his interest to another, providing only such transfer shall be approved by the Board, and the transferee enrolled by the Board. If the Board approve of the transfer, the transferee shall succeed to all the rights and liabilities of the transferor, and such transferor shall be disenrolled on the day on which the transferee shall be enrolled.

27. If any member shall retire from or abandon the Settlement during the first six months of his arrival on the land, or shall at any time be disenrolled, he shall, except as provided in Regulation 28, forfeit to the Board all his interest in such Settlement and all share of any distribution to which he might otherwise have been entitled. But where such retirement is caused by sickness or other sufficient cause, the Board may, out of any moneys at its disposal, assist such retiring member by payment to him of such sum as they may think he is, under the circumstances, entitled to.

28. Should any member of the Settlement die or be declared a lunatic, his interest as such member may be disposed of by his legal representatives to any person who shall be competent to become and shall become an enrolled member; and such person shall, when enrolled by the Board, succeed to all the rights and liabilities of his predecessor. Failing disposal as aforesaid within six calendar months from the date of death or declaration of lunacy, as the case may be, the Board may dispose of the interest of the deceased or lunatic member either for cash or upon terms, and pay the same to his legal representatives, provided always that the Board may, but shall not be legally compellable, to pay to the representatives of any deceased or lunatic member such sum of money as, in the opinion of the Board, shall represent the interest of such member at the time of his death or the declaration of lunacy.

29. A widow of a deceased member may hold a share in the Settlement, upon enrolment, provided that the conditions of labour prescribed by the Rules and Regulations governing the Settlement are complied with on her behalf.

30. Every member to have such area of land for his own private use as may be approved by the Minister, and allotted by the Board under Regulation 21.

31. Every member is expected to do his utmost to promote the interest of the Settlement, and to do such work as the Overseer may think he is best suited for.

32. Every member must keep his allotment clean and in good order, and attend to the sanitary arrangements necessary for the well-being of the Settlement.

33. All complaints and propositions shall be given in writing to the Board at least twenty-four hours before the time of meeting.

34. No intoxicating liquors shall be sold within the limits of the Settlement, and any member selling or purchasing the same within such limits shall be liable to disenrolment.

35. No gambling shall be permitted within the limits of the Settlement.

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

LABOUR SETTLEMENTS ACT AMENDMENT BILL.

(MESSAGE No. 34.)

Ordered by the Legislative Assembly to be printed, 19 April, 1894.

R. W. DUFF,
Governor.

Message No. 34.

In accordance with the provisions contained in the 54th section of the Constitution Act, the Governor recommends for the consideration of the Legislative Assembly the expediency of making provision to meet the requisite expenses in connection with a Bill to amend the "Labour Settlements Act."

*Government House,
Sydney, 31st January, 1894.*

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

LABOUR SETTLEMENTS ACT AMENDMENT BILL.

(PETITION FROM CERTAIN SETTLERS ON THE PITT TOWN LABOUR SETTLEMENT, SUGGESTING
CERTAIN AMENDMENTS.)

Received by the Legislative Assembly, 1 May, 1894.

To the Honorable the Speaker and the Honorable the Members of the Legislative Assembly, in
Parliament assembled.

The humble Petition of the undersigned,—

RESPECTFULLY SHOWETH :—

1. That your Petitioners are settlers on the Pitt Town Labour Settlement, enrolled under the
“Labour Settlements Act of 1893.”

2. That a Bill having been presented to your Honorable House to amend the said “Labour Settlements Act of 1893.” your Petitioners are of opinion that to secure the better working of the Settlement provisions should be inserted in the said Amending Act for the following purposes :—

- a.* To confer on the settlers the right to elect their own officers.
- b.* To give the settlers direct representation on the Board of Control.
- c.* To confer on the settlers power to recommend the disenrolment of any of their number, by ballot of the settlers, two-thirds to constitute a majority.

3. That, at our instance, and by our desire, Mr. Schey, M.L.A., has formulated a series of amendments to provide for the carrying out of our wishes as aforesaid, which amendments have been read and approved by us whose names are appended hereto.

Your Petitioners therefore most humbly pray that your Honorable House will take the facts and circumstances detailed in their said Petition into most favourable consideration, and will pass the aforementioned amendments into law, or grant such other relief to your Petitioners as may seem just and right to your Honorable House.

And your Petitioners, as in duty bound, will ever pray, &c.

[*Here follow 68 signatures.*]

1894.

NEW SOUTH WALES.

POLICE DEPARTMENT.

(REPORT FOR 1893.)

Presented to Parliament by Command.

The Inspector-General of Police to The Principal Under Secretary.

Sir, Police Department, Inspector-General's Office, Sydney, 11 January, 1894.

As the Police Estimates for the current year will shortly be under consideration by Parliament, I think it advisable not to delay the transmission of the annual statement of the strength and distribution of the constabulary, and to accompany it as usual with my report for the year 1893, as required by the Police Regulations, and the Chief Secretary's instructions.

During the year new stations have been formed at the places hereunder named :—

Towamba	...	...	...	...	...	Southern District.
Trundle	...	...	...	...	...	Western District.
Dudley...	...	...	...	...	...	North-Eastern District.
Burren...	...	...	...	...	...	North-Western District.
North Broken Hill	...	...	...	...	...	South-Western District.
Yerong Creek—Culcairn	...	...	...	...	...	Murray District.

The strength of the Police has also been increased in the Metropolitan District and at the following places :—Broken Hill, Grenfell, Newcastle, Campbelltown, Wilcannia, West Maitland, Warialda, Deniliquin, and Carrathool.

The station at Eulowrie was discontinued.

One hundred and thirty-eight appointments were made during the year to provide for the above increases, and to fill vacancies occasioned as under :—

Resignations	...	...	...	...	...	...	...	52
Discharges	...	...	...	...	...	...	...	28
Dismissals	...	...	...	...	...	...	...	13
Superannuations	...	...	...	...	...	...	...	16
Deaths	...	...	...	...	...	...	...	7

Eight Police pensioners died in 1893, who had been in receipt of pensions amounting in the aggregate to £350 1s. 8d. per annum.

Sixteen members of the Force of various ranks were superannuated during the year, ten receiving pensions at rates varying between £68 8s. 9d. and £500 per annum, amounting in all to £1,929 2s. 6d. per annum, and six were granted gratuities upon their discharge, which entailed a charge of £330 10s. upon the Fund.

A temporary pension of £68 8s. 9d. per annum lapsed during the year, and a gratuity of £112 10s. awarded as a final payment in lieu thereof.

Seven widows of members of the Force were awarded gratuities from the Police Reward Fund, amounting in all to £902 5s.

The condition of the Police Reward and Superannuation Funds becomes more unsatisfactory every year. The Treasury accounts show a balance on the combined funds of only £26,686 13s. 4d., after payment of the pensions, &c., up to the 31st December, £24,000 of that amount being investments, whilst in the year 1890 the investments to the credit of the funds amounted to £40,000, £16,000 having since been realised to meet the charges upon the fund in excess of the current income.

As there are many officers and men who must be superannuated in the near future, it will be necessary to take measures to place the funds on a permanently settled basis. Up to the present time the demands upon the funds have been met without any contribution from public moneys during the forty-two years it has been in operation.

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[1,015 copies—Approximate Cost of Printing (labour and material), £16 14s. 3d.]

Deducing my information from annual reports furnished to me by chiefs of police of cities and states in other parts of the world, it is of interest to note that the system and discipline of police bodies is gradually assimilating in all civilised places, and further, that similar difficulties present themselves in all places in directing the operations of the police to the best public advantage, legislation on social matters being desired in many places to give the police more effective control.

As a natural result of this system of management and operation, it is found that there is prompt co-operation whenever it is found necessary to ask for information regarding criminal absconders, or upon other police matters, and I am glad to acknowledge the services rendered to me in this regard by the chiefs of police in other countries, which it is my endeavour at all times to reciprocate.

As regards provision for police station buildings, barracks, lock-ups, and other departmental matters, I believe New South Wales to be in advance of all other places.

The undermentioned works in connection with buildings have been completed during the year on behalf of the Department :—

Molong...	...	...	...	Additions to lock-up.
Murwillumbah...	...	...	...	Additions to court and watch house.
Germanton	...	...	...	Additions to lock-up.
Braidwood	...	...	...	Repairs, &c., to court and watch house.
Wentworth	...	...	...	Repairs, &c., to police-station.
Balranald	...	...	...	Erection of grill-yard at lock-up gaol.
Gunning	...	...	...	Additions, &c., to court and watch house.
Tamworth	...	...	...	Erection of lock-up.
Yerong Creek	...	...	...	do
Warialda	...	...	...	Erection of police barracks.
Sydney	...	...	...	The watch-house in Regent-street is approaching completion, to replace the building objectionably situated and badly constructed near Christ Church.

The occupation of the police barracks at the Central Police Station has proved very advantageous to the Service. An average of fifty single constables are quartered there, and, as the lodging allowance thus saved amounts to about £900 per annum, the rental thus represented is a handsome return for the moderate cost of the building. Superintendent Read reports that the management under Sergeant Mitchell has been excellent, there having been but very little friction, and absolutely no difficulty; and, as a result of the superior sanitary arrangements, the health of the inmates has, he thinks, been above the average. The advantage to the Service has been a more vigorous enforcement of necessary discipline among the junior members of the Force, and the constant readiness of a large body of men in the centre of the city for any emergency that might arise either by day or night. Several instances have already occurred showing the advantage of such an institution to the Service and the public.

The conduct of the police generally has been excellent, the number of dismissals lower than the average, and, judging by the numerous recommendations for promotion made by officers of the Department, magistrates, and other influential persons, many of the police must have performed their duties with exceptional efficiency.

I have, &c.,

EDMUND FOSBERY,

Inspector-General of Police.

RETURN of the Strength and Distribution of the Police Force on the 31st December, 1893.

DISTRICT.	STATION.	MOUNTED.						FOOT.				
		Super-intendents.	Inspectors.	Sub-inspectors.	Senior-sergeants.	Ser-geants.	Senior-con-stables.	Con-stables.	Senior-ser-geants.	Ser-geants.	Senior-con-stables.	Con-stables.
Metropolitan.	No. 1 Head Station	1	2	3	...	...	...	...	...	10	16	53
	Pyrmont	...	...	...	...	...	...	...	1	...	1	3
	General Post Office.	...	...	...	...	...	...	...	1	...	...	4
	Mint	...	...	...	...	...	...	...	1	...	...	3
	Glebe Island	...	...	...	...	...	...	...	...	...	...	1
	No. 2 Head Station	...	...	2	...	...	...	...	2	3	12	53
	Glebe	...	...	...	...	...	...	...	...	1	3	12
	Redfern and Darling-ton	...	1	...	...	...	...	...	...	2	6	22
	Waterloo and Alex-andria	...	...	...	...	...	...	...	1	...	2	9
	Beaconsfield Estate	...	...	...	...	...	...	...	...	...	...	1
	Mitchell Road	...	...	...	...	...	...	...	...	...	...	1
	Irish Town	...	...	...	...	...	...	...	...	...	...	1
	No. 3 Head Station	...	1	1	...	...	...	...	2	3	9	57
	Watson's Bay	...	...	...	...	...	...	...	...	...	...	1
	Waverley and Bondi	...	...	...	...	...	...	...	1	...	2	12
	Paddington and Woollahra	...	...	1	...	...	...	...	...	1	5	15
	Botany	...	...	...	...	...	...	...	...	...	1	3
	Double Bay	...	...	...	...	...	...	...	...	...	...	1
	Rose Bay	...	...	...	...	...	...	...	...	...	...	1
	Rushcutters' Bay	...	...	...	...	...	...	...	...	...	...	1
	Randwick & Coogee	...	...	...	...	...	...	...	1	...	1	5
	No. 4 Head Station	...	1	...	...	...	...	...	2	3	8	26
	Colonial Secretary's Office	...	...	...	...	...	...	...	...	...	...	3
	Lands Office	...	...	...	...	...	...	...	...	...	...	3
	Free Public Library.	...	...	...	...	...	...	...	...	...	...	1
	Treasury	...	...	...	...	...	...	...	...	...	...	3
	Balmain	...	...	...	...	...	...	...	1	2	4	12
	Government House.	...	...	...	...	...	...	...	...	...	...	2
	No. 5 Head Station	...	...	1	...	...	...	...	1	7	6	20
	Cook's River	...	...	...	...	...	...	...	...	...	...	2
	Concord	...	...	...	...	...	...	...	...	...	1	1
	Petersham	...	...	...	...	...	...	...	...	...	2	12
	Manly	...	...	...	...	...	...	...	1	...	...	4
	Leichhardt	...	...	...	...	...	...	...	...	...	3	9
	Camperdown	...	...	...	...	...	...	...	...	...	1	4
	Ashfield	...	...	...	...	...	...	...	1	2	7	7
	Enfield	...	...	...	...	...	...	...	...	...	...	2
	Canterbury	...	...	...	...	...	...	...	...	...	...	1
	Marrickville	...	...	...	...	...	...	...	1	...	2	9
	Burwood	...	...	...	...	...	...	...	1	...	1	4
	Macdonald Town	...	...	...	...	...	...	...	...	...	...	5
	Kogarah	...	...	...	...	...	...	...	...	1	...	2
	Five Dock	...	...	...	...	...	...	...	...	...	...	2
	Stammore	...	...	...	...	...	...	...	...	...	1	1
	Summer Hill	...	...	...	...	...	...	...	...	...	...	4
	Homebush	...	...	...	...	...	...	...	...	...	...	1
	Strathfield	...	...	...	...	...	...	...	...	...	...	2
Hurstville	...	...	...	...	...	...	...	...	...	...	1	
Belmore	...	...	...	...	...	...	...	...	...	...	1	
Croydon	...	...	...	...	...	...	...	...	...	...	2	
Mortlake	...	...	...	...	...	...	...	...	...	...	1	
Annandale	...	...	...	...	...	...	...	...	...	...	2	
Drummoyne	...	...	...	...	...	...	...	...	...	...	2	
St. Peter's	...	...	...	...	...	...	...	...	...	1	2	
Helsarmel	...	...	...	...	...	...	...	...	...	...	1	
Rockdale	...	...	...	...	...	...	...	...	...	...	2	
Peakhurst	...	...	...	...	...	...	...	...	...	...	1	
Arncliffe	...	...	...	...	...	...	...	...	...	...	1	
Dulwich Hill	...	...	...	...	...	...	...	...	...	...	2	
Rosedale	...	...	...	...	...	...	...	...	...	...	1	
North Sydney	...	1	...	...	...	...	...	1	1	5	18	
North Willoughby.	...	...	...	...	...	...	...	...	...	1	1	
Neutral Bay	...	...	...	...	...	...	...	...	...	1	2	
Lane Cove	...	...	...	...	...	...	...	...	...	1	1	
Mossman's Bay	...	...	...	...	...	...	...	...	...	1	1	
Greenwich	...	...	...	...	...	...	...	...	...	...	1	
Water Police	...	1	...	...	...	...	...	1	...	9	16	
Northern	Armidale	1	...	...	...	...	...	4	1	...	5	
	Do West	...	...	...	...	...	...	...	...	...	1	
	Uralla	...	...	...	...	...	1	1	...	...	1	
	Walcha Road	...	...	...	...	...	...	...	...	...	1	
	Walcha	...	...	...	...	1	...	1	...	...	1	
	Bendemeer	...	...	...	...	...	...	1	...	...	...
	Guyra	...	...	...	...	...	...	1	...	...	...
	Glen Innes	...	...	...	1	...	...	2	...	...	3	
	Kookabookra	...	...	...	...	...	...	1	...	...	...
	Deepwater	...	...	...	...	...	...	1	...	...	...
Emmaville	...	...	...	...	...	1	1	...	...	1		
Tenterfield	...	...	...	1	...	...	1	...	...	2		

DISTRICT.	STATION.	MOUNTED.						FOOT.				
		Super-intendents.	Inspectors.	Sub-inspectors.	Senior-sergeants.	Sergeants.	Senior-constables.	Constables.	Senior-sergeants.	Sergeants.	Senior-constables.	Constables.
Northern— <i>continued.</i>	Wilson's Downfall...	...	...	...	...	1	...	1	...	...	...	...
	Bundarra .....	...	...	...	...	...	1	1	...	...	...	...
	Tingha .....	...	...	...	...	...	1	1	...	...	...	...
	Inverell .....	...	...	...	1	...	...	2	...	...	...	3
	Ashford .....	...	...	...	...	...	...	1	...	...	...	...
	Hillgrove .....	...	...	...	...	1	...	...	...	...	...	2
	Do West .....	...	...	...	...	...	...	...	...	...	...	1
	Grafton .....	...	1	...	...	...	1	...	1	1	...	5
	Do South.....	...	...	...	...	...	...	1	1	...	1	...
	Woogoolga .....	...	...	...	...	...	...	1	1	...	...	...
	Ulmarra .....	...	...	...	...	...	...	1	1	...	...	...
	Brushgrove.....	...	...	...	...	...	...	1	...	...	...	2
	Macleay .....	...	...	...	...	...	...	...	...	1	...	1
	Harwood .....	...	...	...	...	...	...	1	...	...	...	1
	Palmer's Island .....	...	...	...	...	...	1	...	...	...	...	1
	Yamba .....	...	...	...	...	...	...	1	...	...	...	1
	Copmanhurst .....	...	...	...	...	...	...	1	...	...	...	...
	Dalmorton .....	...	...	...	...	...	...	1	...	...	...	...
	Blick's Raver .....	...	...	...	...	...	...	1	1	...	...	3
	Lismore .....	...	...	1	...	1	...	1	...	...	...	1
	Casino .....	...	...	...	...	1	...	1	...	...	...	1
	Coraki .....	...	...	...	...	...	1	...	...	...	...	1
	Woodburn .....	...	...	...	...	...	1	...	...	...	...	1
	Broadwater.....	...	...	...	...	...	...	1	...	...	...	1
	Wardell .....	...	...	...	...	...	...	1	...	...	...	1
	Rous .....	...	...	...	...	...	...	1	...	...	...	1
	Ballina.....	...	...	...	...	...	1	...	...	...	...	1
	Woodenbong .....	...	...	...	...	...	1	1	...	...	...	...
	Drake .....	...	...	...	...	...	1	1	...	...	...	...
	Brunswick .....	...	...	...	...	...	...	2	...	...	...	...
	Murwillumbah .....	...	...	...	...	...	1	1	...	...	...	1
	Tumbulgum .....	...	...	...	...	...	...	1	...	...	...	1
Cudgen .....	...	...	...	...	...	...	1	...	...	...	1	
Cooloon .....	...	...	...	...	...	1	...	...	...	...	1	
Byron Bay .....	...	...	...	...	...	1	1	...	...	...	...
Lawrence .....	...	...	...	...	...	...	1	...	...	...	...
Southern	Goulburn	1	...	1	...	...	2	3	1	1	2	13
	Collector .....	...	...	...	...	...	1	1	...	...	...	...
	Bungonia.....	...	...	...	...	...	1	1	...	...	...	...
	Marulan .....	...	...	...	...	...	1	2	...	...	...	...
	Crookwell .....	...	...	...	...	1	...	1	...	...	...	...
	Taralga .....	...	...	...	...	...	1	1	...	...	...	...
	Yass .....	...	1	...	...	...	1	1	...	...	...	3
	Gunning .....	...	...	...	...	...	1	1	...	...	...	1
	Dalton .....	...	...	...	...	...	1	...	...	...	...	...
	Gundaroo .....	...	...	...	...	...	1	1	...	...	...	...
	Ginninderra .....	...	...	...	...	...	1	...	...	...	...	1
	Burrowa .....	...	...	...	1	...	1	...	...	...	...	1
	Binalong .....	...	...	...	...	...	1	...	...	...	...	...
	Frogmore .....	...	...	...	...	...	...	1	...	...	...	...
	Reid's Flat .....	...	...	...	...	...	...	1	...	...	...	...
	Pudman Creek .....	...	...	...	...	...	...	1	...	...	...	...
	Wee Jasper .....	...	...	...	...	...	...	1	...	...	...	1
	Bowning .....	...	...	...	...	...	...	1	...	...	1	3
	Young .....	...	...	1	...	...	1	2	...	...	1	3
	Cootamundra.....	...	...	...	1	...	...	1	...	...	...	2
	Temora .....	...	...	...	...	1	...	1	...	...	...	1
	Murrumburrah .....	...	...	...	...	1	...	1	...	...	...	1
	Marengo .....	...	...	...	...	...	1	...	...	...	...	...
	Wombat .....	...	...	...	...	...	1	...	...	...	...	...
	Wallendbeen .....	...	...	...	...	...	1	...	...	...	...	...
	Morangarell .....	...	...	...	...	...	...	1	...	...	...	...
	Barmedman .....	...	...	...	...	...	...	1	1	...	...	...
	Bethungra .....	...	...	...	...	...	...	1	1	...	...	...
	Stockinbingal.....	...	...	...	...	...	...	1	1	...	...	1
	Harden .....	...	...	...	...	...	...	2	...	...	...	2
	Braidwood .....	...	...	1	...	...	1	1	...	...	...	3
	Queanbeyan .....	...	...	...	...	1	...	1	...	...	...	1
	Moruya .....	...	...	...	...	1	...	1	...	...	...	1
	Araluen .....	...	...	...	...	...	1	1	...	...	...	1
	Bungendore .....	...	...	...	...	...	1	1	...	...	...	...
	Tarago .....	...	...	...	...	...	1	1	...	...	...	...
	Bateman's Bay .....	...	...	...	...	...	1	1	...	...	...	...
	Nelligen .....	...	...	...	...	...	...	1	1	...	...	...
	Eurobodalla .....	...	...	...	...	...	1	1	...	...	...	...
	Cobargo .....	...	...	...	...	...	1	1	...	...	...	...
	Bermagui .....	...	...	...	...	...	...	1	1	...	...	...
	Mongarlowe .....	...	...	...	...	...	1	1	...	...	...	...
Major's Creek .....	...	...	...	...	...	1	1	...	...	...	...
Emu Flat .....	...	...	...	...	...	1	1	...	...	...	1	
Captain's Flat .....	...	...	...	...	...	...	1	1	...	...	1	
Animbo .....	...	...	...	...	...	...	1	1	...	...	...
Nerrigundah .....	...	...	...	...	...	...	1	1	...	...	3	
Cooma .....	...	...	1	...	1	...	2	...	...	...	3	
Bega .....	...	...	...	1	...	...	1	...	...	...	3	

DISTRICT.	STATION	MOUNTED.							FOOT.			
		Super-intendents.	Inspectors.	Sub-inspectors.	Senior-sergeants.	Ser-geants.	Senior-con-stables.	Con-stables.	Senior-ser-geants.	Ser-geants.	Senior-con-stables.	Con-stables.
Southern— <i>continued.</i>	Bombala .....	...	...	...	...	1	...	1	...	...	...	2
	Panbula .....	...	...	...	...	1	...	1	...	...	...	1
	Eden .....	...	...	...	...	...	1	...	...	...	...	1
	Candelo .....	...	...	...	...	...	1	1	...	...	...	...
	Buckley's Crossing .....	...	...	...	...	...	1	1	...	...	...	...
	Michelago .....	...	...	...	...	...	...	1	...	...	...	...
	Adaminaby .....	...	...	...	...	...	1	1	...	...	...	...
	Kiandra .....	...	...	...	...	...	1	1	...	...	...	...
	Delegate .....	...	...	...	...	...	1	1	...	...	...	...
	Nimitybelle .....	...	...	...	...	...	1	1	...	...	...	...
	Jindabyne .....	...	...	...	...	...	...	1	...	...	...	...
	Wolumla .....	...	...	...	...	...	...	1	...	...	...	...
	Wyndham .....	...	...	...	...	...	...	1	...	...	...	...
	Colombo .....	...	...	...	...	...	...	1	...	...	...	...
Towamba .....	...	...	...	...	...	...	1	...	...	...	...
Merimbula .....	...	...	...	...	...	...	...	...	...	...	1	
Eastern	Depôt	1	...	...	1	...	...	...	...	...	...	...
	Parramatta .....	...	...	1	...	...	1	1	1	...	...	15
	Granville .....	...	...	...	...	...	...	...	...	...	...	2
	Rookwood and Prospect .....	...	...	...	...	...	...	...	...	...	...	2
	Auburn .....	...	...	...	...	...	...	...	...	...	...	1
	Harris Park .....	...	...	...	...	...	...	...	...	...	...	1
	Ryde .....	...	...	...	...	...	1	1	...	...	...	1
	Hunter's Hill .....	...	...	...	...	...	...	...	...	...	...	1
	Hornsby .....	...	...	...	...	...	...	...	...	...	...	1
	Gladesville .....	...	...	...	...	...	...	...	...	...	...	1
	Peat's Ferry .....	...	...	...	...	...	...	...	...	...	...	1
	Penrith .....	...	...	...	...	1	...	1	...	...	...	2
	St. Mary's .....	...	...	...	...	...	...	...	...	...	...	1
	Mulgoa .....	...	...	...	...	...	...	1	...	...	...	...
	Rooy Hill .....	...	...	...	...	...	...	...	...	...	...	1
	Emu Plains .....	...	...	...	...	...	...	1	...	...	...	...
	Springwood .....	...	...	...	...	...	...	1	...	...	...	...
	Katoomba .....	...	...	...	...	...	...	...	...	...	...	2
	Windsor .....	...	...	...	...	...	...	1	...	...	1	3
	Wilberforce .....	...	...	...	...	...	...	1	...	...	...	...
	St. Alban's .....	...	...	...	...	...	...	1	...	...	...	1
	Richmond .....	...	...	...	...	...	...	1	...	...	...	...
	Enfield .....	...	...	...	...	...	...	1	...	...	...	...
	Rouse Hill .....	...	...	...	...	...	...	...	...	...	...	1
	Riverstone .....	...	...	...	...	...	...	...	...	...	...	1
	Liverpool .....	...	...	...	...	1	...	1	...	...	...	1
	Smithfield .....	...	...	...	...	...	...	1	...	...	...	...
	Bankstown .....	...	...	...	...	...	...	...	...	...	...	1
	Sutherland .....	...	...	...	...	...	...	...	...	...	...	1
	Campbelltown .....	...	...	...	...	1	...	1	...	...	...	1
	Appin .....	...	...	...	...	...	...	1	...	...	...	...
	Camden .....	...	...	...	...	1	...	1	...	...	...	1
	Picton .....	...	...	...	...	...	...	1	...	...	...	1
	Berrima .....	...	...	...	1	...	...	1	...	...	...	1
	Moss Vale .....	...	...	...	...	...	...	1	...	...	...	1
	Robertson .....	...	...	...	...	...	...	1	...	...	...	...
	Bowral .....	...	...	...	...	...	...	...	...	...	...	2
Mittagong .....	...	...	...	...	...	...	1	...	...	...	1	
Wollongong .....	...	...	...	1	...	...	1	...	1	...	3	
Dapto .....	...	...	...	...	...	...	1	...	...	...	...
Fig-tree .....	...	...	...	...	...	...	...	...	...	...	1	
Bulli .....	...	...	...	...	...	...	1	...	...	...	1	
Clifton .....	...	...	...	...	...	...	...	...	...	...	1	
Helensburgh .....	...	...	...	...	...	...	...	...	...	...	1	
Kiama .....	...	...	...	1	...	...	...	...	...	...	2	
Shellharbour .....	...	...	...	...	...	...	...	...	...	...	1	
Jamberoo .....	...	...	...	...	...	...	1	...	...	...	...
Albion Park .....	...	...	...	...	...	...	1	...	...	...	...
Gerrington .....	...	...	...	...	...	...	1	...	...	...	...
Nowra .....	...	...	...	...	1	...	1	...	...	...	2	
Berry .....	...	...	...	...	...	...	1	...	...	...	1	
Kangaroo Valley .....	...	...	...	...	...	...	1	...	...	...	...
Milton .....	...	...	...	...	...	...	1	...	...	...	...
Western	Bathurst	1	...	...	...	1	1	4	1	1	2	11
	Kelso .....	...	...	...	...	...	...	...	...	...	...	1
	Mill Town .....	...	...	...	...	...	...	...	...	...	...	1
	Oberon .....	...	...	...	...	...	1	1	...	...	...	1
	Sunny Corner .....	...	...	...	...	1	...	1	...	...	...	1
	Rydal .....	...	...	...	...	...	...	1	...	...	...	1
	Wallerawang .....	...	...	...	...	...	1	1	...	...	...	1
	Lithgow .....	...	...	...	1	...	...	1	...	...	...	2
	Hartley Vale .....	...	...	...	...	...	...	1	...	...	...	...
	Mount Victoria .....	...	...	...	...	...	...	1	...	...	...	...
Hill End .....	...	...	...	...	...	...	1	...	...	...	1	
Sofala .....	...	...	...	...	...	...	1	1	...	...	...

DISTRICT.	STATION.	MOUNTED.							FOOT.			
		Super-intendents.	Inspectors.	Sub-Inspectors.	Senior-sergeants.	Ser-geants.	Senior-con-stables.	Con-stables.	Senior-ser-geants.	Ser-geants.	Senior-con-stables.	Con-stables.
Western— <i>continued.</i>	Wyagdon							1				
	Rockley					1		1				
	Burruga							2				
	Newbridge							1				
	O'Connell							1				
	Blackheath									1		
	Orange		1					1	1	1		6
	Do East											2
	Blayney				1				1			1
	Trunkey							1				
	Tuena							1				
	Carcoar						1		1			
	Mandurama								1			
	Mount McDonald							1				
	Cowra						1		1			2
	Canowindra								1			
	Cargo								1			
	Cudal								1			
	Toogong								1			
	Molong							1				1
	Manildra								1			
	Dubbo			1					2		1	6
	Wellington					1			1			2
	Coonamble					1			1			3
	Obley								1			
	Warren						1		1			2
	Dandaloo								1			
	Nevertire								1			
	Narramine								1			
	Collie								1			
	Gilgandra								2			
	Quambone								1			
	Stuart Town							1				
	Cumnock								1			
	Peak Hill						1					2
	Trangie								1			
	Gulargambone								1			
	Mudgee			1					2		1	3
	Gulgong						1		1			1
	Rylstone					1			1			1
	Ilford								1			
	Coolah								1			
	Hargraves								1			
	Windeyer								1			
	Wollar								1			
	Mundooran								2			
	Colbhorah								1			
	Denison Town								2			
	Forbes			1					2		1	4
	Condobolin						1		2			1
Wollongough								1				
Marsden								2			2	
Grenfell					1			1			2	
Coolagong								1				
Eugowra								1			2	
Parkes								1			2	
Alicktown								1				
Bumbery								2				
Bourke	Bourke	1			1	1		3			1	5
	North Bourke							1				1
	Brewarrina					1						1
	Byrock							1				3
	Cobar				1			3				3
	Gongolgan							1				
	Louth					1		1				
	Tilpa							1				
	Enngonia							1				1
	Nymagee							1				2
	Nyngan				1			1				1
	Cannonbar							1				
	Coolabah							1				
	Yantabulla							1				
	Barrington							1				
	Wanaaring							1				
	Walgett			1				1	2			2
	Collarendabri							1				
	Mogil Mogil							2				
	Mungindi							2				
Angledool							1					
Goodooga							1					
Gravin							1					
Tatalla							2					
Carinda							1					
Pilliga							1					

DISTRICT.	STATION.	MOUNTED.							FOOT.			
		Super-intendents.	Inspectors.	Sub-inspectors.	Senior-sergeants.	Ser-geants.	Senior-con-stables.	Con-stables.	Senior-ser-geants.	Ser-geants.	Senior-con-stables.	Con-stables.
North-eastern	Maitland, West.....	1	1	...	1	...	1	1	..	1	2	11
	Do East .....	...	...	...	...	1	...	2	...	...	...	3
	Largs .....	...	...	...	...	...	...	1	...	...	...	1
	Paterson .....	...	...	...	...	1	...	1	...	...	...	...
	Gresford .....	...	...	...	...	...	...	1	...	...	...	...
	Lochinvar .....	...	...	...	...	...	...	1	...	...	...	...
	Greta .....	...	...	...	...	...	...	...	...	...	...	2
	Branxton .....	...	...	...	...	...	...	1	...	...	...	...
	Cessnock .....	...	...	...	...	...	...	1	...	...	...	...
	Ellalong .....	...	...	...	...	...	...	1	...	...	...	...
	Wollombi .....	...	...	...	...	...	1	1	...	...	...	...
	Morpeth .....	...	...	...	...	...	1	...	...	...	...	2
	Hinton .....	...	...	...	...	...	...	...	...	...	...	1
	Raymond Terrace...	...	...	...	...	...	1	...	...	...	...	1
	Clarence Town .....	...	...	...	...	...	1	...	...	...	...	...
	Mulbring.....	...	...	...	...	...	1	...	...	...	...	...
	Cooranbong .....	...	...	...	...	...	...	1	...	...	...	...
	Wyong .....	...	...	...	...	...	...	1	...	...	...	...
	Gosford .....	...	...	...	...	...	1	...	...	...	...	1
	Howe's Valley .....	...	...	...	...	...	...	1	...	...	...	...
	Dungog .....	...	...	...	...	...	1	...	...	...	...	1
	Stroud .....	...	...	...	...	...	1	1	...	...	...	...
	Gloucester .....	...	...	...	...	...	...	1	...	...	...	...
	Copeland .....	...	...	...	...	...	...	1	...	...	...	...
	Bullahdelah .....	...	...	...	...	...	...	1	...	...	...	...
	Tea Gardens .....	...	...	...	...	...	...	1	...	...	...	...
	Bungwall Flat .....	...	...	...	...	...	...	1	...	...	...	...
	Forster .....	...	...	...	...	...	...	1	...	...	...	...
	Newcastle .....	...	1	1	...	...	...	1	2	3	3	27
	Point Road.....	...	...	...	...	...	...	...	...	...	...	2
	Lake Road .....	...	...	...	...	...	...	...	...	...	...	2
	Wickham .....	...	...	...	...	...	...	...	...	...	...	2
	Islington .....	...	...	...	...	...	...	...	...	...	...	1
	Tighe's Hill .....	...	...	...	...	...	...	...	...	...	...	1
	Lambton.....	...	...	...	...	1	...	...	...	...	...	2
	New Lambton .....	...	...	...	...	...	...	...	...	...	...	1
	Minmi .....	...	...	...	...	...	...	...	...	...	1	1
	Wallsend .....	...	...	...	...	...	...	...	1	...	...	3
	West Wallsend .....	...	...	...	...	...	...	...	...	...	...	1
	Charlestown .....	...	...	...	...	...	...	...	...	...	...	1
	Dudley .....	...	...	...	...	...	...	...	...	...	...	1
	Teralba .....	...	...	...	...	...	...	...	...	...	...	1
	Swansea .....	...	...	...	...	...	...	1	...	...	...	...
	Catherine Hill Bay..	...	...	...	...	...	...	...	...	...	...	1
	Stockton .....	...	...	...	...	...	...	...	...	...	...	2
Hamilton .....	...	...	...	...	...	...	...	...	...	...	2	
Adamstown .....	...	...	...	...	...	...	...	...	...	...	2	
Waratah .....	...	...	...	...	...	...	...	...	...	...	2	
Carrington .....	...	...	...	...	...	...	...	...	1	...	1	
The Glebe .....	...	...	...	...	...	...	...	...	1	...	1	
Singleton .....	...	...	...	1	...	...	1	...	...	...	4	
Goorangoola .....	...	...	...	...	...	...	1	...	...	...	...
Jerry's Plains.....	...	...	...	...	...	...	1	...	...	...	...
Broke .....	...	...	...	...	...	...	1	...	...	...	...
Muswellbrook .....	...	...	...	1	...	...	1	...	...	...	2	
Denman .....	...	...	...	...	...	...	1	...	...	...	...
Aberdeen .....	...	...	...	...	...	...	...	...	...	...	1	
Scone .....	...	...	...	1	...	...	1	...	...	...	1	
Stewart's Brook .....	...	...	...	...	...	...	1	...	...	...	...
Merriwa .....	...	...	...	...	...	1	1	...	...	...	1	
Kerribee .....	...	...	...	...	...	...	1	...	...	...	...
Cassilis .....	...	...	...	...	...	1	1	...	...	...	...
Tinonee .....	...	...	...	...	...	...	1	...	...	...	...
Taree .....	...	...	...	...	1	...	...	...	...	...	2	
Wingham .....	...	...	...	...	...	...	1	...	...	...	...
Cundletown .....	...	...	...	...	...	...	1	...	...	...	...
Coopermook .....	...	...	...	...	...	...	1	...	...	...	...
Camden Haven .....	...	...	...	...	...	...	1	...	...	...	...
Port Macquarie.....	...	...	...	...	1	...	1	...	...	...	1	
Wauchope .....	...	...	...	...	...	...	1	...	...	...	...
Bellbrook .....	...	...	...	...	...	...	1	...	...	...	...
Kempsey .....	...	...	1	...	1	...	1	...	...	...	2	
Frederickton .....	...	...	...	...	...	...	1	...	...	...	...
Smithtown .....	...	...	...	...	...	...	...	...	...	...	1	
Gladstone .....	...	...	...	...	...	...	1	...	...	...	...
Arakoon .....	...	...	...	...	...	...	1	...	...	...	...
Macksville .....	...	...	...	...	...	...	1	...	...	...	...
Nambucca Heads .....	...	...	...	...	...	...	...	...	...	...	1	
Bowraville .....	...	...	...	...	...	...	1	...	...	...	1	
Fermount .....	...	...	...	...	...	...	1	...	...	...	...
Bellingen .....	...	...	...	...	...	1	...	...	...	...	...
North-western	Tanworth	1	...	...	...	1	...	3	1	...	...	6
	Do West .....	...	...	...	...	...	...	...	...	1	...	...
	Murrurundi .....	...	...	...	...	1	...	1	...	...	...	2
	Blackville .....	...	...	...	...	...	1	...	...	...	...	...
Gunnedah .....	...	...	...	...	1	...	1	...	...	...	2	

DISTRICT.	STATION.	MOUNTED.						FOOT.				
		Super-intendents.	Inspec-tors.	Sub-inspec-tors.	Senior-ser-geants.	Ser-geants.	Senior-con-stables.	Con-stables.	Senior-ser-geants.	Ser-geants.	Senior-con-stables.	Con-stables.
North-western —continued.	Barraba .....	...	...	...	...	...	1	1	...	...	...	...
	Manilla .....	...	...	...	...	...	1	1	...	...	...	...
	Nundle .....	...	...	...	...	...	1	1	...	...	...	...
	Quirindi .....	...	...	...	...	1	...	1	...	...	...	1
	Somerton .....	...	...	...	...	...	1	...	...	...	...	...
	Moonbi .....	...	...	...	...	...	...	1	...	...	...	...
	Carroll .....	...	...	...	...	...	...	1	...	...	...	...
	Werris Creek .....	...	...	...	...	...	...	1	...	...	...	...
	Boggabri .....	...	...	...	...	...	1	1	...	...	...	...
	Tambar Springs .....	...	...	...	...	...	...	1	...	...	...	...
	Baradine .....	...	...	...	...	...	1	...	...	...	...	...
	Coonabarabran .....	...	...	...	1	...	...	1	...	...	...	1
	Swamp Oak .....	...	...	...	...	...	1	...	...	...	...	...
	Narrabri .....	...	...	1	...	1	...	2	...	...	...	4
	Do West .....	...	...	...	...	...	...	...	...	...	...	1
	Wee Wee .....	...	...	...	...	...	1	1	...	...	...	...
	Keramingby .....	...	...	...	...	...	1	1	...	...	...	...
	Meroe .....	...	...	...	...	...	1	1	...	...	...	...
	Moree .....	...	...	...	1	...	...	1	...	...	...	2
	Bingera .....	...	...	...	...	1	...	1	...	...	...	1
	Warialda .....	...	...	...	...	...	1	1	...	...	...	1
	Yetman .....	...	...	...	...	...	...	1	...	...	...	...
	Boggabilla .....	...	...	...	...	...	...	2	...	...	...	...
Pallamallawa .....	...	...	...	...	...	...	1	...	...	...	...
Garah .....	...	...	...	...	...	...	1	...	...	...	...
Burren .....	...	...	...	...	...	...	1	...	...	...	...
South-western	Balranald .....	...	...	...	...	...	1	1	...	...	...	1
	Berrigan .....	...	...	...	...	...	1	1	...	...	...	...
	Booligal .....	...	...	...	...	...	1	1	...	...	...	...
	Broken Hill .....	...	...	1	...	...	1	1	...	...	1	12
	Do South .....	...	...	...	...	...	...	...	...	...	...	3
	Do North .....	...	...	...	...	...	...	...	...	...	...	1
	Do (Rail-way Town) .....	...	...	...	...	...	...	...	...	...	...	1
	Carathool .....	...	...	...	...	...	1	1	...	...	...	...
	Clare .....	...	...	...	...	...	1	1	...	...	...	...
	Cudgellico .....	...	...	...	...	...	1	1	...	...	...	...
	Darlington Point .....	...	...	...	...	...	1	...	...	...	...	...
	Deniliquin	1	...	...	...	1	...	2	...	1	...	5
	Euabalong .....	...	...	...	...	...	...	1	...	...	...	...
	Euriowie .....	...	...	...	...	...	...	1	...	...	...	...
	Euston .....	...	...	...	...	...	1	1	...	...	...	...
	Gilgunnia .....	...	...	...	...	...	...	1	...	...	...	...
	Hatfield .....	...	...	...	...	...	...	1	...	...	...	...
	Hay .....	...	1	...	...	...	...	2	...	...	...	4
	Hillston .....	...	...	...	...	1	...	1	...	...	...	1
	Ivanhoe .....	...	...	...	...	...	...	1	...	...	...	...
	Jerilderie .....	...	...	...	...	...	1	1	...	...	...	1
	Mathoura .....	...	...	...	...	...	1	...	...	...	...	...
	Maude .....	...	...	...	...	...	...	1	...	...	...	...
	Menindie .....	...	...	...	...	...	1	1	...	...	...	...
	Milparinka .....	...	...	...	...	...	1	1	...	...	...	...
	Moama .....	...	...	...	...	...	1	1	...	...	...	1
	Mossgiel .....	...	...	...	...	...	1	1	...	...	...	...
	Moulamein .....	...	...	...	...	...	1	1	...	...	...	...
	Mount Hope .....	...	...	...	...	...	...	1	...	...	...	...
	Oxley .....	...	...	...	...	...	...	1	...	...	...	...
	Pinnacles .....	...	...	...	...	...	...	1	...	...	...	...
	Pooncarie .....	...	...	...	...	...	...	2	...	...	...	...
Purnacoota .....	...	...	...	...	...	...	1	...	...	...	...
Round Hill .....	...	...	...	...	...	...	1	...	...	...	...
Silverton .....	...	...	...	...	1	...	1	...	...	...	...
Tareena .....	...	...	...	...	...	...	1	...	...	...	...
Thackaringa .....	...	...	...	...	...	...	1	...	...	...	...
Tibooburra .....	...	...	...	...	...	1	1	...	...	...	...
Tocumwal .....	...	...	...	...	...	...	2	...	...	...	...
Tarrawingie .....	...	...	...	...	...	...	1	...	...	...	...
Wentworth .....	...	...	...	1	...	...	1	...	...	...	2	
Whitton .....	...	...	...	...	...	1	...	...	...	...	1	
Wilcannia .....	...	...	1	...	...	1	1	...	...	...	2	
White Cliffs (Opal Fields) .....	...	...	...	...	...	...	1	...	...	...	...
Murray	Albury	1	...	...	...	...	4	2	...	1	7	
	Bowna .....	...	...	...	...	...	1	...	...	...	...
	Germanton .....	...	...	...	1	...	1	...	...	...	...
	Walbundrie .....	...	...	...	...	...	1	...	...	...	...
	Corowa .....	...	...	...	1	...	1	...	...	...	2	
	Daysdale .....	...	...	...	...	...	1	...	...	...	...
	Howlong .....	...	...	...	...	...	1	1	...	...	...
	Mulwala .....	...	...	...	...	...	1	1	...	...	...
	Tumberumba .....	...	...	...	...	...	1	1	...	...	1	
	Weleragang .....	...	...	...	...	...	...	2	...	...	...
	Gerogery .....	...	...	...	...	...	...	1	...	...	...
	Jindera .....	...	...	...	...	...	...	1	...	...	...
Culcairn .....	...	...	...	...	...	...	1	...	...	...
Gundagai .....	...	...	1	...	...	1	1	...	1	3		

DISTRICT.	STATION.	MOUNTED.						FOOT.				
		Super-intendents.	Inspectors.	Sub-inspectors.	Senior-sergeants.	Ser-geants.	Senior-con-stables.	Con-stables.	Senior-ser-geants.	Ser-geants.	Senior-con-stables.	Con-stables.
Murray— <i>continued.</i>	Tumut.....	...	...	...	...	1	...	1	...	...	...	1
	Adelong.....	...	...	...	1	...	...	1	...	...	...	1
	Shepherdstown.....	...	...	...	...	...	...	1	...	...	...	1
	Batlow.....	...	...	...	...	...	...	1	...	...	...	...
	Jugiong.....	...	...	...	...	...	1	...	...	...	...	...
	Coolac.....	...	...	...	...	...	...	1	...	...	...	...
	Wagga Wagga.....	...	1	...	...	1	...	2	1	...	1	6
	Junee.....	...	...	...	...	...	1	1	...	...	...	2
	Urana.....	...	...	...	...	...	1	1	...	...	...	1
	Narrandera.....	...	...	...	1	...	...	2	...	...	1	2
	Tarcutta.....	...	...	...	...	...	...	1	...	...	...	...
	Kyamba.....	...	...	...	...	...	...	1	...	...	...	...
	Yerong Creek.....	...	...	...	...	...	...	1	...	...	...	...
	The Rock.....	...	...	...	...	...	...	1	...	...	...	...
Coolaman.....	...	...	...	...	...	...	2	...	...	...	...
BELMORE BARRACKS.												
Constables in course of instruction, under orders for transfer, &c.												
Orderlies to His Excellency the Governor.....	...	...	1	1	...	2	26	...	1	3	20	
Police Storekeeper.....	...	...	1	...	1	1	2	...	...	...	...
Armourer.....	...	...	...	...	...	...	...	1	...	...	...
DETECTIVES.												
Superintendent in charge.....	1	...	...	...	...	...	...	...	...	...	...
Sub-Inspectors.....	...	...	2	...	...	...	...	...	...	...	...
First-class Detectives.....	5	...	...	...	...	...	...	...	...	...	...
Second-class do.....	5	...	...	...	...	...	...	...	...	...	...
Third-class do.....	4	...	...	...	...	...	...	...	...	...	...
TOTAL.....	14	11	14	28	29	52	129	403	31	47	136	882
Total of all ranks..									1,776.			

Police Department,
Inspector General's Office.

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

REMOVAL OF CONSTABLE ANDREWS FROM BYRON BAY.
(CORRESPONDENCE RESPECTING.)

Ordered by the Legislative Assembly to be printed, 15 March, 1894.

RETURN to an *Order* made by the Honorable the Legislative Assembly of New South Wales, dated 14th November, 1893, That there be laid upon the Table of this House,—

“Copies of all letters, reports, papers, and correspondence relating to the removal of Constable Andrews from Byron Bay.”

(*Mr. Perry.*)

Telegram from J. P. Garvan, Esq., M.P., to The Chief Secretary.

Byron Bay, 1 May, 1893.

LOCAL trespassers forcibly entering on my land; policeman aiding and assisting. I want protection from this gross outrage, and consequently appeal to you.

The Inspector General of Police.—C.W., B.C., 1/5/93. I received a similar communication and wired to local police at once.—E.F., B.C., 1/5/93. The Principal Under Secretary.—Since writing the above, I have received a report which I attach.—E.F. Inform Mr. Garvan, M.P., accordingly.—C.W., 9/5/93.

Telegram from J. P. Garvan, Esq., M.P., to The Inspector-General of Police.

Byron Bay, 1 May, 1893.

CONSTABLE Andrews with party of trespassers entered on my land yesterday, and, ejecting my men, threatening to arrest if they did not leave. The men informed Andrews that they were there by my authority. I request immediate reparation for the outrage by your office.

Telegram from the Inspector-General of Police to The Inspector of Police, Armidale.

Sydney, 1 May, 1893.

MR. J. P. GARVAN, Byron Bay, wires, Constable Andrews, with party of trespassers, entered on his land yesterday, ejecting men, and threatening to arrest, &c. Please inquire into this at once by wire, and reply.

For very careful inquiries and full report. What does this mean? What was Constable Andrews doing at Mr. Garvan's—his duty? Who are the persons that were with him? I want full particulars. What was said and done? Why necessary to go there on Sunday? Report all the facts.—THOS. GARVIN, Superintendent, Armidale, 1/5/93. W. C. Andrews, Byron Bay.

Telegram from the Inspector of Police, Armidale, to Senior-Constable Andrews.

Armidale, 1 May, 1893.

MR. J. P. GARVAN, Byron Bay, telegraphs Inspector-General, Constable Andrews, with party of trespassers, entered on his land yesterday, ejecting men and threatening to arrest, &c. Wire me particulars immediately what you were doing there and what occurred; your business, &c., and report fully by post as well. Urgent.

THOS. GARVIN.

233—A

Telegram

Telegram from the Superintendent of Police, Armidale, to The Inspector-General of Police.

Armidale, 1 May, 1893.

SENIOR-CONSTABLE ANDREWS telegraphs as follows:—Dispute between Mr. Garvan and tenant. I was present by request of tenant to prevent probable violence. Acted in that capacity. Did not threaten to eject or arrest anyone. Had no occasion to interfere in any way. Report by first post upon receipt will be sent you.

Police Report.

Police Station, Byron Bay, 1 May, 1893.

W. C. ANDREWS, Senior-constable, reports *re* the attached that on Saturday evening, 29th April, Mr. Bryen, a tenant of Mr. Garvan's, informed the Senior-constable that three men had got into a house on one of his farms, and when requested had refused to leave and used threatening language, and brandished a knife, and stated their determination of remaining there. Mr. Bryen stated that he wished to give them in charge. The Senior-constable refused to take them into custody, and informed Mr. Bryen that he had no power to act in the matter, only so far as to try to prevent any undue violence. Mr. Bryen stated he was going to put them out, and was afraid the men would do some act of violence, as they were half intoxicated and had liquor in the house, and requested the senior-constable to go with him and his sons to the house in question. On the following morning the senior-constable went with Mr. Bryen and his sons to the house. There were two men there, and Mr. Bryen requested them to leave the place peaceably, as it was his. After some conversation between the Bryens and the men, it was arranged that the men should shift their things out of the house they occupied into an outhouse. The Bryens then fastened the door and left the premises.

The senior-constable did not say anything to the men to induce them to leave the house. He neither suggested nor used any threats of any kind whatever. He simply watched what was being done. He did not get off his horse, nor did he take any part whatever in the affair.

W. C. ANDREWS,

Senior-constable.

Forwarded to the Inspector-General of Police in connection with the Superintendent's telegram of the 1st instant.—GEO. MCKERROW, Sr.-Sgt., *abs.* Supt. Garvin, Armidale, 6/5/93. Forwarded to the Principal Under Secretary in connection with Mr. Garvan's complaint. As, however, I have heard from Mr. Garvan an account of what happened (as related to him) which is at variance with the senior-constable's statement, I have directed a further inquiry and informed Mr. Garvan.—EDM. FOSBERRY, I.G.P., B.C., 9/5/93. The Principal Under Secretary. Await further report.—C.W., 13/5/93.

Telegram from The Inspector-General of Police to J. P. Garvan, Esq., M.P.

Sydney, 2 May, 1893.

CONSTABLE ANDREWS explains that he was requested to be present by your tenant to preserve the peace. Has no power to interfere further in private disputes respecting property. States he was not called upon to do anything. Further report called for.

J. P. Garvan, Esq., M.P., to The Inspector-General of Police.

Sir,

Avoca, Byron Creek, 3 May, 1893.

I am just now in receipt of your telegram, as follows:—

"Constable Andrews explains that he was requested to be present by your tenant to preserve the peace. Has no power to interfere further in disputes respecting property. States he was not called upon to do anything. Further report called for."

In the first case, it was unwarrantable for Constable Andrews to assume, no matter who made a statement to him, that there was likely to be a breach of the peace in any lawful negotiations with me. I think my character and standing should have saved me from such an aspersion.

Bryen was not my tenant with reference to this farm. About two years ago I allowed him to temporarily use it for the purpose of grazing some cattle of mine that he was dairying on the halves in an adjoining farm. Over a year ago I told Bryen I would discontinue the arrangement, as I had decided to turn the farm to more profitable account. Bryen expressed regret then at my decision, and asked me to include it in the lease of the other farm, but I declined, as the farm I had already leased them was too large.

Bryen then removed their servant from the farm, and I tried on two occasions to let it, but could not arrange with a suitable tenant, and I have reason for supposing that Bryen discouraged these people from taking the farm.

At the time, and several times since, I entered on possession, and had peaceable and undisputed possession. The dry cattle from the herd Bryen had the use of were grazing on the farm. All the cattle were mine.

But I need not occupy time with these details; sufficient to say Bryen was not my tenant. He never paid me a shilling rent, and he had no document to show that he was my tenant in respect of this land, and never thought of setting up any claim to the land till he heard I was about letting it, which, of course, would lessen his grass area, and by doing a bit of low bluff, he thought he would frighten away the incoming tenant, as most people will not deal with land that is in any way in dispute.

The action of Constable Andrews in coming with six men of the Bryen family and servants, ordering my men out of my cottage, into which I put them in peaceable possession, had a most prejudicial effect.

The men who were in possession of the cottage were peremptorily ordered by Bryen to leave it, and they declined to leave.

Bryen then said they, including the six of themselves and the policeman, would remove them by force.

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One of my men appealed to the policeman, and asked if they were going to remove them by force. The policeman answered, "Yes; that is what I came for, if you do not go quickly," and he did not think he was exceeding his duty. One of my men then said to the policeman, "If you have come to remove me by force I might as well go myself," and then removed his things.

You will see what a gross outrage this was on my rights and my property. I may also state that my men told the constable that they were in possession by my orders; nevertheless he insisted that they should leave the place.

I need not explain the importance of placing a person in possession of a property who has never paid rent nor attorned as a tenant, and the fact that there was an intimacy existing between Bryen and this constable puts a deeper complexion on this action.

I am not a lawyer, and do not know what amounts to a conspiracy in law to do an illegal act, but certainly there was a most outrageous act done to me and my property by these seven men.

Yours, &c.,

JAMES P. GARVAN.

Police Report.

Police Station, Byron Bay, 6 May, 1893.

W. C. ANDREWS, senior-constable, reports further *re* the attached, that the names of the other persons present on the 30th April at a farm known as Bonnal's, the property of Mr. J. P. Garvan, and in the occupation of Mr. Robert Bryen, were—R. Bryen, his two sons James and David Bryen, John and Thomas Lindsay, and one Martin Turner. The names of the men who were in the house—one was Thomas Hill and the other man the senior-constable did not know.

The conversation between Mr. R. Bryen and Hill and his mate, was as follows, as near as the senior-constable recollects:—Mr. Bryen said, "Now, men, I want you to leave this place peaceably, as it belongs to me," and Hill said, "Well, Mr. Garvan told us to remain here; you had better see Mr. Garvan." Bryen then said, "No, I am not going to see Mr. Garvan. The place belongs to me, and I want you to leave without any bother. I have nothing against you personally." Hill then said, "We can't shift all our things to-day. Suppose we put them into that place up there" (pointing to an old barn on the land), and Bryen then said that they could do so, but to remove their things on the following day. Hill then went to the back door and brought his tent, blankets, &c., out of the house and laid them on the grass. Hill's mate did the same. Hill then said, "There you are then; all our things are out." They then carried their things towards the back of the house, and the constable did not see where they put their things. They did not put them in the barn previously mentioned. Mr. Bryen and Mr. Lindsay then fastened the doors of the house and took the key and left. The senior-constable remained on his horse about 8 yards from the corner of the house the whole of the time; he made no suggestion; he did not advise any one; he neither threatened to eject or arrest any one; he took no part in the affair; he had no interest whatever in the business; he only saw what was done, and left with the others. The senior-constable believes that Robert Bryen and the Lindsays are partners, or are in some way jointly interested in the estate. They are considered highly respectable and reliable people in the district.

W. C. ANDREWS,

Senior-constable.

Sub-Inspector Carroll, Lismore,—For Mr. Carroll's information in connection with papers sent him yesterday from Maclean; attach these to them. It is always better for the police to keep clear of such matters. Let landlord and tenant fight out their disputes at the police court. So far as I can judge from papers I have seen, I really do not see why Andrews went there at all. In cases of doubt a telegram to me should always be sent.—THOS. GARVIN, Superintendent, Palmer Island, 13/5/93.

The Principal Under Secretary to J. P. Garvan, Esq., M.P.

Sir,

Chief Secretary's Office, Sydney, 9 May, 1893.

Referring to your telegram of the 1st instant, representing that a local policeman is aiding and assisting persons who are forcibly trespassing on your property at Byron Bay, I am directed by the Chief Secretary to transmit herewith for your information a copy of a telegram from Senior-constable Andrews, of Byron Bay, on the subject.

I am at the same time desired to add that the Inspector-General of Police is engaged in instituting inquiries into the complaint, and that any additional report in the matter will be duly communicated to you.

I have, &c.,

CRITCHETT WALKER,

Principal Under Secretary.

Telegram from J. P. Garvan, Esq., M.P., to The Inspector-General of Police.

Byron Bay, 9 May, 1893.

ENCOURAGED by assistance your local officer gave on the occasion complained of, trespassers have since made two violent raids, and drove off horses of my tenant, and endeavouring to frighten him off place. Three Supreme Court writs for trespass have been served. Two of the trespassers when served with writs said they were not liable; they were only servants. Cannot my property and my tenant be protected from these gross outrages?

Telegram from J. P. Garvan, Esq., M.P., to The Inspector-General of Police.

Byron Bay, 9 May, 1893.

Am leaving for Brisbane to-morrow. Can officer investigating arrive before I leave.

Telegram from The Inspector-General of Police to J. P. Garvan, Esq., M.P.

Sydney, 9 May, 1893.

Your letter received, also constable's report. As he denies doing or saying anything on occasion, have ordered further inquiry.

Minute

Minute of The Inspector-General of Police.

Sydney, 9 May, 1893.

MR. GARVAN's letter contains statements founded apparently upon what he was told entirely at variance with W. C. Andrews' report. The matter must be, therefore, more closely investigated to elicit the facts.

I send this to Grafton direct to save time; but if Mr. Garvan can be communicated with, the papers should be shown to him.

Inspector Casey, Grafton.

E.F.

Telegram from Inspector Casey to The Inspector-General of Police.

Grafton, 9 May, 1893.

SUPERINTENDENT GARVIN out of reach of telegraph line; will be here early to-morrow morning.

Telegram from Inspector Garvin to The Inspector-General of Police.

Grafton, 10 May, 1893.

RETURNED here seven o'clock this morning. Have wired Mr. Garvan, Byron Bay, for names of persons who can prove unwarrantable interference by Constable Andrews he complains of, and informed him searching investigation will be held by Sub-Inspector Carroll, and that his complaint will be thoroughly inquired into. Have telegraphed Armidale send papers to me here, and will give Mr. Carroll full instructions. Leaving very early to-morrow morning, returning here Monday, finally leaving for Armidale Tuesday.

Telegram from J. P. Garvan, Esq., M.P., to The Superintendent of Police, Grafton.

Brunswick Heads, 10 May, 1893.

THOS. HILL and Daniel Curran, names of men evicted. They are now felling timber on same land, 'Possum Creek. I am on my way to Brisbane. Hugh Galen, lessee of farm, heard their statement as made to me.

Police Report.

Re Mr. Garvan's complaint against Constable Andrews, Byron Bay Station.

Police Station, Maclean, 11 May, 1893.

I FORWARD these papers to Sub-Inspector Carroll for prompt and careful investigation and full report. I have to request Mr. Carroll to read papers with particular care, and in prosecuting this inquiry to see that every accusation, charge, or objection, made by Mr. Garvan against the constable is fully gone into and explained clearly, so that papers can be sent Inspector-General complete, and put in such a way as to enable him to grasp the facts without trouble.

Mr. Garvan names Thomas Hill and Daniel Curran as persons evicted; they will be found at 'Possum Creek. Hugh Gillan should also be examined, as well as Constable Andrews, and any other persons who can throw light upon the matter. *The whole truth is required.*

Who requested Andrews to be present, and for what reason? What did Constable Andrews do or say? So far as I can judge from Mr. Garvan's letter, I fail to see why the constable should have gone there at all. The matter should and could have been settled by police court proceedings.

Did Andrews state he was there to remove them by force, &c.? Did he see Mr. Garvan at all; if not, why?

Senior-constable Andrews' report puts a different complexion upon the case, but I wish the inquiry to be of such a searching character as to clearly show the whole facts of this business.

THOS. GARVIN,

Superintendent.

Sub-Inspector Carroll, Lismore.

Memo. by Police-Superintendent Garvin.

Re Mr. James P. Garvan's complaint against Senior-constable Andrews of Byron Bay Station.

Police Department, Armidale, Superintendent's Office,

Northern District, 25 May, 1893.

I FORWARD papers to Inspector-General of Police, result of an inquiry held by Sub-Inspector Carroll, regarding this complaint. So far as I can judge, the inquiry has been a careful one.

I am of opinion that Senior-constable Andrews exceeded his duty in going out to the place at all under all the circumstances; but he probably did so more through ignorance or perhaps over-zealousness, believing he was taking the proper course.

The matter in dispute between Mr. Garvan and Bryen should have been left to themselves to settle by police court proceedings, or any other way they thought fit, without intervention or presence of police.

It is to be regretted Senior-constable Andrews went to the place, but I think it was more from want of knowing better. Had the senior-constable telegraphed to me, as he should have done had he any doubt, I would have instructed him not to interfere or identify himself with the dispute in any shape whatever.

THOS. GARVIN,

Superintendent.

[Enclosure.]

POLICE REPORT.

Police Station, Byron Bay, 18 May, 1893.

SGE-INSPECTOR CARROLL reports that yesterday at Byron Creek, in the presence of Mr. John Garvan, Mr. James P. Garvan's son, and Senior-constable Andrews, he took statements from seven witnesses regarding the complaint made by Mr. James P. Garvan against Senior-constable Andrews. These were all the witnesses that could throw any light on the subject.

The

The witnesses were carefully questioned by me, and not one of them stated that Senior-constable Andrews used any threats or intimidations towards either Thomas Hill or Daniel Curran.

There is no doubt, in my opinion, Senior-constable Andrews was wrong in going to this place with the Bryens; he should have let them settle their disputes in the law courts or otherwise. Still he does not appear to have done anything except to be simply present.

D. CARROLL,
Sub-Inspector.

INQUIRY.

Byron Creek, 17 May, 1893.

Re complaint by James P. Garvan, Esq., M.P., against Constable Andrews, of Byron Bay.

Thomas Hill states:—I am a labourer, residing at Bloomfield, near Byron Creek: remember Sunday, the 30th of April last; I remember Senior-constable Andrews and five of the Bryens coming to my place on that date; when they came up first, which was about noon, Robert Bryen said, "Are you going to leave the place?" in reply, I said, "I am here by Mr. Garvan's authority, and that I was not to allow anyone on the premises"; one of the Bryens then said, "If you don't remove your things we will put them out for you"; I then said—speaking to Senior-constable Andrews—"Are you going to evict us?" he replied, "That is what I am here for; I then said, "If you are going to put us out we may as well go out peaceably"; we then removed our things out of the house; Robert Bryen then nailed up the door.

By Senior-constable Andrews:—There were three of the Bryens and a man named Turner there; before you came some of the Bryens told me that they were going to bring a constable; shortly after I saw you coming with Robert Bryen: when you first came up you said, "Good-day"; Mr. Robert Bryen then commenced to speak to me; when he asked me to leave the place he said the place belonged to him; I said, "You ought to go and tell Mr. Garvan"; he said, "I do not want to see Mr. Garvan"; the words I used to you were, "I suppose you are come to evict us"; I believe you said, "I am here for a certain purpose"; I am not positive which words you used, that is, when I said, "Are you going to evict us?" "That is what I am here for," or "I am here for a certain purpose"; I was standing in front of the house, leaning against the verandah-post; I said to Mr. Bryen, "Will you let me put my things in the barn"; he said, "No"; he afterwards agreed to let me put my things in another house on the premises; you were sitting on your horse all this time in front of the verandah; you did not make use of any threatening language to me; you did not threaten to arrest or eject me.

By John Garvan:—I did not make any notes of what occurred that day; I am now speaking from memory; on the following day I did make a statement to Mr. James P. Garvan of what occurred on the Sunday, but I am not quite certain if it were not on Tuesday instead of Monday after that I made that statement, but it is either of those two days.

Taken before me this day, the }
17th May, 1893,— }

THOMAS HILL.

D. CARROLL, Sub-Inspector.

Daniel Curran states:—I live at Bloomfield with Thomas Hill; I remember Sunday, the 30th of April last; on that date, about noon, Mr. Turner and three of the Bryen family came to our house; in about a quarter of an hour afterwards Mr. Bryen, senior, one of his family, and Senior-constable Andrews came; when Mr. Bryen came up he said, "I want you (meaning the two of us) to leave this place, the place belongs to me"; Thomas Hill said in reply, "I don't know about that, we are left here in charge by Mr. Garvan"; one of the Bryen family then said that we would have to shift our things out of the place, and if we did not they would shift them for us; Thomas Hill said to Senior-constable Andrews, "I suppose you will evict us, Mr. Andrews"; he made some reply in a low tone of voice; I did not hear what he said; I said to my mate Hill, "Suppose one of us goes to Mr. Garvan and the other remain here"; he did not go then; there was nothing more said by anyone that I remember; we then went out and took our things out, and put them in one of the out-houses. Mr. Bryen, senior, and one or two of his family then nailed up the door; they then all left the place, and my mate and I left to go to Mr. Garvan's; we, however, met him on the road; he took us back to the house we left, and again put us in possession.

By Senior-constable Andrews:—I did not hear you using any threats towards either my mate Hill or myself; you spoke to my mate Hill in a low tone of voice; I did not hear what you said; you did not get off your horse during the time you were there.

Taken before me, this 17th }
May, 1893,— }

DANIEL x CURRAN,
mark

D. CARROLL, Sub-Inspector.

Witness to mark,—W. C. ANDREWS.

Hugh Galen states:—I am a farmer, residing at Bloomfield; I was at Mr. Garvan's place on Wednesday, the 3rd of May; heard Thomas Hill make a statement to Mr. Garvan of what occurred at Bloomfield on Sunday, 30th of April last; that is with reference to the occasion when Robert Bryen and his family and Senior-constable Andrews were there; Senior-constable Andrews was not present when this statement was made; Mr. James P. Garvan took down the statement in writing from Hill, read it over to him if it were correct, and he said it was; Hill or his mate did not sign it, nor were they asked; I know nothing further of what occurred.

Taken before me, this 17th }
day of May, 1893,— }

HUGH GALEN.

D. CARROLL, Sub-Inspector.

David Bryen states:—I am a farmer, living at Grannaile; I remember going to Byron Bay on Saturday, the 29th of April last to see Senior-constable Andrews; I said, "Father sent me down to see him; that there were three men on the place that he had leased of Mr. Garvan; that my father had asked them to go off and they refused to go, and he wanted him up to arrest them"; I think he replied that he did not think he could do anything, but he would come up and see father; he came up to our place that evening and saw my father; I told Senior-constable Andrews at the Bay that the men who were on the farm were intoxicated; also, that they had threatened me and brandished a knife; Senior-constable Andrews remained at our house all night, and remained there until we went out to Bloomfield on the following day; on the following day (Sunday) John Lindsay, James Bryen, Martin Turner, and myself went out to Bloomfield, about a mile from my father's place, and saw two men there; the two men's names are Thomas Hill and Daniel Curran—the two men that are here to-day giving their statements; my brother said to them, "I see you are here yet"; they replied, they would not go away; in about a quarter-of-an-hour afterwards my father, brother, and Senior-constable Andrews came; I knew they were coming; my father asked them if they were going to leave the place; they (Hill and Curran) replied, that Mr. Garvan told them to stop there; father told them that he had the place leased from Mr. Garvan, and that he wanted them to leave; one of them (Hill), addressing Senior-constable Andrews, said, "I suppose you are here to evict us?" Andrews replied, "I am here for a certain purpose"; Hill said, "I suppose we may as well go"; Hill asked my father if he could shift his things into one of the back premises (houses); my father said he could do so; they then removed their things to the out-house; I did not hear Senior-constable Andrews using any threats towards anyone there.

Taken before me, this 17th }
day of May, 1893,— }

DAVID BRYEN.

D. CARROLL, Sub-Inspector.

Robert Bryen states: I am a farmer, living at Opossum Shoot; on Saturday, the 29th of April last, I sent a message by my son David to Senior-constable Andrews, that I wished to give some men in charge that were trespassing on my land; in consequence of that Senior-constable Andrews came to my place that evening; on the following day I went out to this place—Bloomfield—with Senior-constable Andrews and my sons, and a man named Turner; on arriving there I saw two men named Hill and Curran in possession of the place; I said to them, "I see you are here yet"; I said to them, "You are trespassing here, and I want you to leave"; one of them (Hill) said that they were there by Mr. Garvan's orders; then he said to Senior-constable Andrews, "Are you going to evict us?" Andrews replied, "I am here for a certain purpose"; I then asked him to go out peacefully and quit the house; he said he would; he asked me if he could put his things in an out-house, and I said he could; he took his things out; I then went inside, nailed up the back door, and locked the front door; I then left

left the place with my sons and Senior-constable Andrews; the above is all that took place; Senior-constable Andrews did not get off his horse during the whole of the time; there is a misunderstanding between Mr. Garvan and myself regarding this property; when Senior-constable Andrews came to my place he told me that he would have nothing to do with the men, and that he could not arrest them; I asked him to come with me for protection, as they were pretty rough; while I was speaking to these men, Andrews was with me.

Taken before me this 17th }
day of May, 1893,— }

ROBERT BRYEN.

D. CARROLL, Sub-Inspector.

Martin Turner, farm-hand, living with Mr. Bryen:—Remember Sunday, the 30th of April last; went with the young Bryens to Bloomfield; was there when old Mr. Bryen and Senior-constable Andrews arrived; Mr. Bryen told the two men (Hill and Curran) who were in the house that the place was his, and for them to go out of the house; Hill replied that he had been put there by Mr. Garvan, and that he was paid to keep possession of the house; Mr. Bryen said that had nothing to do with him; he would have to leave the place; Hill then said to Senior-constable Andrews, "I suppose if we do not go out you will evict us?" Andrews said he was there for a certain purpose, and he must do his duty; the men asked Mr. Bryen if they could leave their things in an outhouse until the following day; he said they could do so; they then removed them, and Mr. Bryen shut up the place; we all then left.

Taken before me this 17th }
day of May, 1893,— }

MARTIN TURNER.

D. CARROLL, Sub-Inspector.

Senior-constable Andrews states:—On Saturday, the 29th of April last, Mr. David Bryen came to the Police Station at Byron Bay, and informed me that three men had got into a house on one of his father's farms, and that morning, when he, his father, and others had requested them to leave, they refused to do so, and had threatened to assault anyone that would interfere with them; I said, "I will see your father about it"; I went to his father's residence that evening, and saw his father; he made a similar complaint to me; he told me that there was a dispute between himself and Mr. Garvan regarding this property; I then told him that I had no power to arrest or interfere with the men, only so far as to try and prevent any violence. He then requested me to go with him to the house, as he was afraid that if he tried to put them out they would do him some injury; it was late, so I remained there that night; on the following Sunday I went with Mr. Bryen and his sons to this place; on arrival there Mr. Bryen said to the men who were in charge there, Hill and Curran, "Now, men, I want you to leave this place as it belongs to me; I would like you to go quietly, I do not want any bother"; Hill then said, "Mr. Garvan put us here, and told us to stop here; why don't you go and see Mr. Garvan?"; Bryen said, "It has nothing to do with Mr. Garvan, and I want you to leave"; Curran said, "Suppose one of us stops here, and the other goes and sees Mr. Garvan"; some of the young Bryens said, "No, we want you to leave now"; Hill said, "Suppose we shift our things into the old barn"; Bryen said, "All right, but you must shift them away to-morrow"; Hill then turned to me and said, "I suppose you come here to evict us, Mr. Andrews"; I replied, "Well, I came here for a certain purpose"; they then shifted their things to an out-house, Mr. Bryen locked up the house and we left; the above is all I said, and all I did; I did not go to see Mr. Garvan in reference to this matter either before or after this transaction; my only object in going to this place was to prevent a breach of the peace.

W. C. ANDREWS,

Senior-constable.

Taken before me, this 17th day }
of May, 1892,— }

D. CARROLL, Sub-Inspector.

The Inspector-General of Police to J. P. Garvan, Esq., M.P.

My dear Sir,

Sydney, 26 May, 1893.

Though it is not exactly the usual official method of dealing with such matters, I think it well to ask you to read the enclosed papers, and favour me with your observations, before I take action.

Yours, &c.,

EDMUND FOSBERY,

Inspector-General of Police.

J. P. Garvan, Esq., M.P., to The Inspector-General of Police.

Dear Sir,

Sydney, 30 May, 1893.

In returning you the papers, I would point out that my charge against Constable Andrews is sustained by the evidence: that I was the owner of the land, and Constable Andrews was aware that Hill and Curran were in possession by my orders and authority; that Bryen and his family tried to bounce them off the place; that Hill and Curran refused to go, and said they would keep possession of the place as instructed by me; that Bryens came again on Sunday and tried to bounce the men out of the place, but without success; that later on Bryen, with five men and the constable, came and ordered my men to leave the place, and that if they did not go they (the Bryens) would shift them; that Constable Andrews went with Bryen, knowing that Bryen intended to take possession of the land and house by force against law and endangering the peace; that after threat of removal by force, Hill appealed to the constable as to whether he was going to remove them by force, and he replied, "I am here for a certain purpose, and I must do my duty." It was this statement of the constable's that caused my men to give up possession. The several previous threats of Bryen and his family were ineffectual, and it was these words of the constable, coupled with his presence, that caused my men to give up the place.

I would draw marked attention that Constable Andrews, in his report of the 1st and 6th May, entirely omits this important episode, and which contains the essence of the charge against him, and which reports, when read in conjunction with my letter to Mr. Fosbery of 3rd May, and which caused him to write his memo. of 9th May, as follows:—"Mr. Garvan's letter contains statements founded apparently upon what he was told, entirely at variance with Senior-constable Andrews' report. The matter must therefore be more closely investigated."

The investigation bears out almost to the letter, and certainly the very essence of the statement made in my letter.

It will not be necessary for me to point out how grossly unfair it was for the local policeman, who knew me well by repute, and as a large land-owner in that district. Before he committed himself to the improper action of aiding and abetting the Bryens, they told him there was a dispute with me about the land, and he admits that the men told him they were in possession by my orders and authority, and though I was living on the adjoining farm, within a short distance of the place, Constable Andrews remained at Bryen's the whole of Saturday night and until midday on Sunday, in conference with them, before taking the action complained of, and did not attempt to see me, though I was living on the adjoining farm.

Bryens

Bryens had no right whatever to this land, and it will seriously prejudice the law-abiding respect for the police uniform if land-jumpers are to be aided and abetted by policemen in such cases as this. I know there are people in the community who have peculiar views about landed property; but I trust that whoever prostitutes the police uniform by such improper interference and such gross outrage as I have been subjected to, will not be tolerated in the Service.

I would also point out that Bryens have not taken any legal steps to establish their claim to this property, but, encouraged by the countenance given by Constable Andrews on the occasion under consideration, have since continued to terrorise my tenants, breaking down the fences several times and driving my tenants' stock off the place.

I am seeking a remedy for these continued outrages in the Supreme Court, and I trust your decision in this matter will prevent a recurrence of the improper action of Constable Andrews.

Yours, &c.,
JAMES P. GARVAN.

The Inspector-General of Police to The Superintendent of Police, Armidale.

Police Department, Inspector-General's Office, Sydney, 31 May, 1893.

I HAVE thought it proper to show these papers to Mr. James P. Garvan, who is naturally greatly incensed against Senior-constable Andrews, whose action has done very considerable injury, pecuniary and otherwise [*vide* letter attached], to which Mr. Garvan adds a strong protest, and urges that the senior-constable should be dismissed.

The serious mistakes that Andrews made are:

1. That he stayed a day and a night as the guest of one of the interested parties.
2. That he accompanied them to the scene of the threatened disturbance instead of going alone.
3. That he had not the common-sense and courtesy to see Mr. Garvan before lending himself to the proceedings at all; and
4. That when appealed to, instead of foolishly saying that he was there for a purpose, he did not say openly that he was not present to interfere in any way, but merely to use his endeavours to prevent any breach of the peace.

The result has been very serious, but I await Mr. Garvan's further inquiries and report (prompt) before coming to a decision.

EDMUND FOSBERY,
Inspector-General of Police.

Re Mr. James P. Garvan's complaint against Senior-constable Andrews, of Byron Bay Station.

Police Department, Armidale, Superintendent's Office,
Northern District, 1 June, 1893.

FORWARDED to Mr. Carroll for further inquiries. Senior-constable Andrews should be allowed to see all these papers, and submit any additional explanation he might desire to make.

The senior-constable has made some serious mistakes regarding this business, which I saw was most damaging when reading the papers.

He should have seen Mr. Garvan, knowing he was at his place at Byron Creek, upon the complaint being made, before he went to Hill's at instigation of Bryen.

There is no doubt, in my opinion, after reading Senior-constable Andrew's statement, pages 12 and 13, that it looks as if he was favouring the Bryens. At the same time, I do not think he was, but that construction can be put upon it.

I think Hill's suggestion was a wise one [*see* page 13]. Mr. Garvan should have been seen.

Had the senior-constable not been present, it is very evident, Hill would not have given up possession. It was his presence and his weak remarks, "I came here for a certain purpose," that led to their going out.

It was wholly a matter of dispute between landlord and tenant, not one for police presence or interference.

Senior-constable Andrews had better go very carefully over the papers, as this might be a very serious business to him.

THOS. GARVIN,
Superintendent.

Sub-Inspector Carroll to Superintendent Garvin.

Police Station, Lismore, 3 June, 1893.

SUB-INSPECTOR CARROLL begs to forward herewith an additional explanation from Senior-constable Andrews regarding the complaint made against him by Mr. Garvan.

The Sub-Inspector will offer no further opinion on the facts. He will leave that to his superior officers to judge. He may, however, state that he has always found Senior-constable Andrews steady, careful, and attentive to his duties, with this present exception. The Police Magistrate (Brace) at Murwillumbah has frequently spoken to the Sub-Inspector in very high terms of Andrews for the manner he always conducted the police business at the Brunswick.

D. CARROLL,
Sub-Inspector.

[Enclosure.]

Police Station, Lismore, 3 June, 1893.

W. C. ANDREWS, senior-constable, further reports *re* the attached, that when he went to Bryen's place it was too late to go to Bloomfield, the place in question, and he remained there until the following morning rather than return to Byron Bay and again come back.

As to seeing Mr. Garvan he did not think that was necessary. He knew that the place in question was in possession of Bryen, and, so far from imagining that it was a dispute between landlord and tenant, concluded that it was rather a dispute between tenant, or, so far as he was concerned, between owner and occupier, against trespassers, and he considered it was his imperative duty when he received the information from Bryen to proceed to the place. The senior-constable would respectfully submit that upon information being given him by a man of the standing and reputation for honesty and respectability as Mr. Bryen in the district—a man working the largest dairy-farm in the Richmond River and Byron Bay district,

district, and with considerable landed property of his own—it would be information that should receive attention at his hands, and that in going there he did his duty as a preserver of law and order, and if any illegal act was done by Mr. Bryen towards Mr. Garvan, and the same is proved in the action Mr. Garvan mentions he is taking against Mr. Bryen, no doubt he will be fully compensated.

Again, if, when the senior-constable arrived at the place he had found the premises occupied by apparently respectable people, his suspicions would at once have been aroused, and he would have been led to make inquiries as to their position there; but when he saw the man "Hill" whom he knew as a disorderly man, and who had been convicted at Ballina for a grossly unprovoked assault on another man at Byron Bay, he saw that a breach of the peace was not at all improbable; but even then lent no assistance, good, bad, or indifferent, or took any part in the proceedings other than being present in the execution of his duty in seeing that no breach of the peace took place on the one side or the other. For Mr. Garvan to say that the senior-constable prostituted his uniform is quite uncalled for, for so far as the senior-constable is concerned he entertains as great a respect for Mr. Garvan as for Mr. Bryen, and as a matter of fact has only spoken to the latter gentleman on one occasion previous to this affair, and was never before inside of his house, and had Mr. Garvan gone to him in a similar way, and had given him similar information to that given by Mr. Bryen, he would have considered it his bounden duty, and would have gone readily with him as with Mr. Bryen, as he would be fully persuaded from his knowledge of either gentlemen that a complaint in either case, of the sort in question, was not to be disregarded. His superior officers will observe, that it was reported to him (the senior-constable) that one of the men who was complained of as trespassing had brandished a knife, and he would therefore be quite justified in concluding that matters might assume very serious proportions did these people come into conflict. They will further observe that the senior-constable was not in possession of the facts as contained in Mr. Garvan's letter of 3rd May to the Inspector-General of Police (attached) or he might have come to the same conclusion with them, and have informed Mr. Bryen that, as this was a dispute between him and Mr. Garvan as to the right to possession of the land, his proper course would be to test the matter in a Court of Justice, when the rights of all parties could be inquired into; but the facts as disclosed in Mr. Garvan's letter referred to were not known to the senior-constable as disclosed therein. The senior-constable has learnt that Mr. Bryen has issued a Supreme Court writ against Mr. Garvan, claiming damages for trespassing on the lands in question, and that the action will be heard at the next Circuit Court to be held in Grafton.

In conclusion, the senior-constable would remind his superior officers of his fourteen years of service, and of the fact that this is the first and only occasion an inquiry has been held in connection with him and the outside public, and would respectfully urge that if, in their opinion, he has exceeded his duty on this occasion, it was an error of judgment, induced solely by his desire to prevent any breach of the peace, and that he went to the place in execution of his duty, and prepared to do what he considered at the time was right and just with respect to his position, and to act without fear or favour between man and man, and that they will acquit him of the charge urged by Mr. Garvan that he has been guilty of partisanship in any shape or form.

The senior-constable is a married man, and has a family of eight children, the eldest being 12 years old and the youngest 12 months. His wife is also delicate. These are depending solely upon him for support.

W. C. ANDREWS,
Senior-constable.

The Superintendent of Police, Armidale, to The Inspector-General of Police.

Police Department, Armidale, Superintendent's Office,
Northern District, 6 June, 1893.

Re Mr. James P. Garvan's complaint against Senior-constable Andrews, at Byron Bay Station.

SENIOR-CONSTABLE ANDREWS, it is very evident, acted most indiscreetly in dealing with Bryen's complaint, and should not have identified himself with it in any way. I look upon his action more as an error of judgment than intention to give any annoyance to Mr. Garvan, or favour one party more than another. Nevertheless, his conduct has caused Mr. Garvan a deal of inconvenience and, I have no doubt, worry. It would be very hard, I think, to dismiss the constable for his mistake. My recommendation is this: Taking into consideration his length of service—fourteen years—with an excellent character, and that he has a wife and eight children, the oldest only 12 years, wholly depending upon him, and that, when all is said and done, it was an error of judgment, I think a reprimand would meet the case, and be of such a warning to Senior-constable Andrews that he would be more careful in taking notice of such complaints in future.

THOS. GARVIN,
Superintendent.

The Inspector-General of Police to J. P. Garvan, Esq., M.P.

My dear Sir, Police Department, Inspector-General's Office, Sydney, 8 June, 1893.

As you perused the previous papers regarding the inquiry into your complaint against Senior-constable Andrews of Byron Bay, I will trouble you to read my minute of the 31st ultimo, Andrews' further report in explanation, and Superintendent Garvin's memo.

For the reasons I have given, I am of opinion that Andrews behaved indiscreetly, but without any intention of showing partiality. It was certainly his duty to be present on the occasion if applied to, simply to prevent any breach of the peace.

Accordingly I concur in Inspector Garvin's recommendation, and feel sure that upon perusal of the constable's straightforward explanation, you will adopt the same view.

I understand that some actions at law relating to the matter are to be tried at the next sitting of the Grafton Circuit Court, and of course should any facts in evidence affecting the constable, the whole question may call for reconsideration.

Yours, &c,
EDMUND FOSBERY.

J. P. Garvan, Esq., M.P., to The Inspector-General of Police.

My dear Sir, Sydney, 13 June, 1893.

I am in receipt of your note of 8th instant, with additional papers in the case of my complaint against Constable Andrews, and I would point out Constable Andrews' latest statement does not in any way palliate his offence, but intensifies it.

He says that "so far from imagining that it was a dispute between landlord and tenant, he concluded that it was rather a dispute between tenant, or, so far as he was concerned, between owner and occupier and trespasser." He also says that had he been aware of the facts "he would have informed Mr. Bryen that, as this was a dispute between him and Mr. Garvan as to the right to possession of the land, his proper course would be to test the matter in a Court of Justice, when the rights of all the parties could be inquired into." Now this statement, that he did not know it was a dispute between me as owner of the land and Mr. Bryen, who says he is tenant. So far from Constable Andrews being truthful in this statement,

statement, as to his entire ignorance of its being a dispute between Bryen and myself, I have only to refer you to the evidence adduced at the inquiry, but not having a copy, I cannot quote; but I can quote what is quite as conclusive, viz.:—"Telegram from Senior-constable Andrews, Byron Bay, to the Superintendent of Police, Armidale—Dispute between Mr. Garvan and tenants:—I was present by request of tenant to prevent probable violence. Acted in that capacity. Did not threaten to eject or arrest anyone. Had no occasion to interfere in any way. Report by first post." This first telegram from Constable Andrews shows clearly that he knew my relation to the land, and also that of Bryen. His statement therefore, that he did not even imagine it was a dispute between landlord and tenant, is proved to be false by his own telegram.

In addition to the evidence referred to, as also the above telegram, there is the fact that Constable Andrews stayed with the Bryens Saturday evening and night and up to mid-day on Sunday. Is it not almost certain that as Bryens during the three previous days were asserting their claim to this land, and that on one of the days I was present and ordered two of them off the land, and insisted on their leaving it, and that on the two following days they made unauthorised entries on my land and had words with my men—all this occurring before the Sunday—is it not almost an absolute certainty that the whole *pros* and *cons* of the dispute were talked over by the Bryens and Constable Andrews, and that he knew it was a dispute between me, as owner, and Bryen, who claimed to be a tenant.

Constable Andrews' statement, that only on one previous occasion had he ever spoken to Mr. Bryen, is only technically true; for, as a matter of fact, he knew the sons and step-sons well, and they are more of his own age, are really the prime movers in the disturbance, so that Constable Andrews' statement that he only on one previous occasion ever spoke to Mr. Bryen, would convey an erroneous impression. I would also draw attention to the following part of Constable Andrews' report:—"The senior-constable has learnt that Mr. Bryen has issued a Supreme Court writ against Mr. Garvan, claiming damages for trespassing on the land in question, and that the action will be heard at the next Circuit Court to be held at Grafton." This report of Constable Andrews was written on the 3rd of June, and the writ was only issued from the Supreme Court, Sydney, on 1st June. It will show the very intimate knowledge Constable Andrews had of every movement of the Bryen family, and the writ does not give the information that Constable Andrews so glibly volunteers.

I will only say, with reference to this writ, that it has been issued with the apparent design of putting me to the annoyance and expense of having to attend at the Circuit Court, Grafton, to answer a charge of having trespassed on my own land, and I would point out that the writs issued by me more than four weeks previously would test the title to this land, which was bought and paid for by me over two years ago, and that I gave a temporary use of it to Bryen for a period without payment of any rent; that I withdrew the temporary use and entered on possession; that neither Bryen nor anyone else had or has any lease of right to this land; and you can thus value the nature of a writ against me for going on to my own land. I may also state that Bryen asked me in writing for a lease of the land in question, and I declined definitely and distinctly to let him have any lease of it.

Constable Andrews' statement as to the considerable landed property owned by Bryen, and his ability to meet the result of any verdict I might obtain—the correctness of this statement I question. I have had a search made of the conditional purchase lands in that district, and have had a report that there is no conditional purchase land in the name of R. Bryen, but that there was a small conditional purchase of 150 acres in his name, but was transferred about four years ago to one of the banks.

You can, therefore, judge of the value of this part of Constable Andrews' report, and which is indicative of his intimacy with the Bryens.

I am, &c.,
JAMES P. GARVAN.

The Inspector-General of Police to The Superintendent of Police, Armidale.

Police Department, Inspector-General's Office, Sydney, 13 June, 1893.

THOUGH I see no reason to differ from Mr. Garvin's view of this case, I forward Mr. Garvan's further letter for observations before the matter is dealt with.

I attach little importance to the heading of Senior-constable Andrews' telegram which was sent after the event, and when Andrews was aware of the complaint and relative position of the parties.

E. F.

The Superintendent of Police, Armidale, to The Inspector-General of Police.

Police Department, Armidale, Superintendent's Office,
Northern District, 14 June, 1893.

Re Mr. James P. Garvan's complaint against Senior-constable Andrews, of Byron Bay Station.

I HAVE carefully read Mr. Garvan's letter of 13th instant, and see no reason to vary my report of 6th instant, C.M. 93-510.

Without in any way attempting to shield Senior-constable Andrews from his action or stupid expressions made by him upon an occasion when he should have manfully said, "I know no side, but I am here, if possible, to prevent a breach of the peace."

To dismiss Senior-constable Andrews from the Force, with his long service of fourteen years, and during this period he has borne an excellent character, would be a very severe punishment for the error of judgment committed by him.

Judging from Mr. Garvan's letter of 13th instant, he thinks the senior-constable has done him an injury and caused great annoyance. There is nothing to prevent Mr. Garvan taking civil proceedings against him, and if it is proved in evidence the constable acted with partiality, he would be meted in heavy damages and costs—and serve him right if he wilfully so acted—and to dismissal from the Service as well.

THOS. GARVIN,
Superintendent.

The Inspector-General of Police to J. P. Garvan, Esq., M.P.

Sir, Police Department, Inspector-General's Office, Sydney, 15 June, 1893.

In regard to your further letter of the 13th instant, respecting Senior-constable Andrews, of Byron Bay, I beg to inform you that whilst I can in no way acquit the constable from blame, I am unable to see that he exhibited any intentional partiality, or that he is guilty of falsehood. Considering, also, his long and faithful service for fourteen years, without any complaint, his removal from the Service would be too harsh a punishment. As regards the heading of his telegram, referred to by you, it does not appear to me to bear the construction you put upon it, as it was dispatched after the occurrence, when he had been made aware of the nature of the complaint, and relative position of the parties. I am dealing with the matter further.

Yours, &c.,

EDMUND FOSBERY.

Precis.

Inspector-General's Office, Sydney, 20 June, 1893.

MR. JAMES P. GARVAN, M.P., complains of the interference of Senior-constable Andrews, of Byron Bay, by accompanying Mr. Bryen, who desired to remove two men who were in possession by Mr. Garvan's orders, of a farm, of which he states he is the owner. That the men were ordered by Bryen to leave the land, and they refused, whereupon Bryen threatened to remove them by force. On an appeal being made by the men to the constable, that officer stated he was there for a certain purpose, and must do his duty. The men then left, the constable's statement causing them to give up possession. Mr. Garvan states that the constable went with Bryen, knowing that Bryen intended to take possession of the property by force, and that he stayed for the night previous at Mr. Bryen's house. Mr. Garvan expresses his opinion that the constable should be dismissed from the Service for his conduct.

Senior-constable Andrews explains that Mr. David Bryen called at the Byron Bay Police Station and informed him that three men had got into a house on one of his father's farms, and when requested to leave had refused to do so and used threatening language. The constable went the same evening to the residence of the father (Mr. Robert Bryen), who told him that there was a dispute between him and Mr. Garvan regarding the property. The constable then stated that he had no power to arrest or interfere with the men, only so far as to try and prevent any violence. It was then so late that he remained there all night, and next morning went with Mr. Bryen and his sons to the place. Mr. Bryen asked the men in possession to leave peacefully. After some conversation between the parties, one of the men in possession turned to the constable and said, "I suppose you came here to evict us, Mr. Andrews." The constable replied, "Well, I came here for a certain purpose." The men then shifted their things to an outhouse. The constable states his only object in going to the place was to prevent a breach of the peace, and that he remained on his horse all the time.

The Inspector-General of Police wrote that although he was satisfied that the constable did not act with partiality his conduct was apparently improper in the following respects:—

1. That he stayed for a day and a night as the guest of one of the interested parties.
2. That he accompanied them to the scene of the threatened disturbance instead of going alone
3. That he had not the common-sense and courtesy to see Mr. Garvan before lending himself to the proceedings at all; and
4. That, when appealed to, instead of foolishly saying that he was there for a purpose, he did not say openly that he was not present to interfere in any way, but merely to use his endeavours to prevent any breach of the peace.

The Superintendent of Police in charge of the district (Mr. Garvin) reports that he is of opinion that the constable exceeded his duty in going out to the place at all under the circumstances, but he probably did so more through ignorance or perhaps over-zealousness, believing he was taking the proper course; that it is very evident the constable acted indiscreetly, and should not have identified himself with it in any way. He looks upon the constable's action more as an error of judgment than intention to give any annoyance to Mr. Garvan, or favour one party more than another; nevertheless, his conduct has caused Mr. Garvan a deal of inconvenience and, no doubt, worry. That it would be very hard, he thinks, to dismiss the constable for his mistake. The Superintendent recommends that, "taking into consideration the senior-constable's length of service (fourteen years), with an excellent character, and that he has a wife and eight children (the eldest only 12 years) wholly dependent upon him, and that, when all is said and done, it was an error of judgment, that a reprimand should meet the case and be of such a warning to the constable that he would be more careful in taking notice of such complaints in future."

The Inspector-General of Police concurs in the Superintendent's recommendation, but the matter to be considered undisposed of until trial of civil actions at the next Grafton Circuit, when, should any circumstances transpire affecting the action of the police constable, it may be necessary to take other action.

The papers being lengthy, I have made this *precis* of contents for the Colonial Secretary's information.—EDM. FOSBERY, J.-G.P., B.C., 21/6/93. The Principal Under Secretary.

I am of opinion that Senior-constable Andrews grossly exceeded his duty, and that Mr. Garvan has been damaged by the undue interference of the police. Dismissal from the Service would be a just punishment for the offence, but I incline to the opinion that the loss of a stripe and a reprimand will be sufficient as a warning, and that Andrews be removed from the district as speedily as possible.—G.R.D., 1/7/93.

The Inspector-General of Police.—C.W., B.C., 12/7/93. The Colonial Secretary's instructions have been carried into effect.—EDMUND FOSBERY, 20/7/93. The Principal Under Secretary.

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

ARREST OF ABRAHAM TAYLOR.

(CORRESPONDENCE RESPECTING.)

Ordered by the Legislative Assembly to be printed, 14 March, 1894.

RETURN to an *Order* made by the Honorable the Legislative Assembly of New South Wales, dated 22nd February, 1894, That there be laid upon the Table of this House,—

“Copies of all papers and documents in connection with the arrest of
“Abraham Taylor by Police Sergeant Haviston on a charge of being a
“lunatic at large.”

(Mr. Johnston.)

Senior-Sergeant Boyd to Mr. Superintendent Read.

Balmain Police Station, 12 February, 1894.

REPORT.

SENIOR-SERGEANT BOYD begs respectfully to report, for the information of the Superintendent, that on the 13th September, 1893, a man named Abraham Taylor, 61 years of age, residing at No. 40, Smith-street, Balmain, was admitted to the Hospital for Insane, at Callan Park, on the recommendation of Doctors Carruthers and Kelly.

Taylor was subsequently discharged from the Institution to the custody of his wife, who has since died, and a young man, about 26 years of age, named Charles Burnham, who has since been acting as his guardian. Taylor has no friends in this Colony that the senior sergeant is aware of, except a brother-in-law named Edward Barry, a plumber, Bayswater Road, Woollahra.

Burnham, who has been out of employment for some time, is a paper-ruler by trade, and a complete stranger to Taylor, and only became acquainted about two months ago through his mother, who nursed Mrs. Taylor through her illness. Taylor, who is very frail and quite an imbecile, is said to have made a will, which is now at Mr. Slattery's office, in favour of Burnham, leaving him all he is possessed of at his death.

Taylor owns a considerable amount of property in Balmain, besides money and scrip in the banks. He recently sold an allotment of ground for £195, £75 of which was paid away to redeem mortgage, besides £25 paid to satisfy current accounts; the remainder, with the exception of £30, which Burnham has lodged in his own name in the Post Office Savings Bank, Balmain, is unaccounted for.

On the 31st ultimo Sergeant Haviston arrested Taylor in Little Darling-street, and charged him with “deemed to be insane.” He was brought before the Police Doctor next day and remanded until the following Monday, when he was again brought before the Court and further remanded until Saturday last, when he was discharged in the custody of Burnham.

His Worship, Mr. Johnston, S.M., stated that he had received a letter from Dr. Manning, who said, “I gave Charles Burnham charge of defendant Taylor from the Institution.” Mr. Johnston further said, “As Burnham seems a suitable person, I will discharge the defendant into his care.”

It would, therefore, appear obvious from his Worship's remarks that Taylor was not in a fit state, when discharged, to take care of himself.

A. BOYD,
Senior-Sergeant.

Forwarded to the Inspector-General, who may deem it advisable to send this report to the Inspector-General of the Insane.—G. READ (Superintendent), 13/2/94.

The Acting Government Medical Officer to The Government Medical Adviser.

Sir, Office of the Government Medical Officer, Sydney, 12 February, 1894.

I have the honor to bring under your notice the case of Abraham Taylor, discharged from the Reception House on Saturday last, by order of the Police Magistrate.

The particulars of his case as supplied to me by the police, and my own inquiry and observation, are as follows:—

Taylor was discharged from the Hospital for the Insane, Callan Park, on the 30th November last, and I append a statement of his mental condition, at the time of his discharge, written by the Medical Superintendent of that Hospital.

A little time after his discharge his wife died, when a man named Burnham, who had acted as his attendant from the time of his discharge, took entire charge of him.

In December last, Burnham sold some of Taylor's property, and after the settlement of some outstanding debts, presumably contracted by Taylor, banked the balance in his own name. Taylor then made a will, bequeathing in the event of his death, his entire assets to Burnham, a medical certificate by Dr. McDonough having been obtained that Taylor was mentally responsible for his actions. The father and mother of Burnham then came and lived with Taylor at his expense.

The Police, hearing of this state of affairs, arrested Taylor for his protection, and charged him at the Water Police Court, with being of unsound mind. I remanded him to the Reception House until the following Monday, and then in conjunction with Dr. Goode certified him as insane.

A lawyer, on behalf of Burnham, protested against this, and the magistrate remanded Taylor until Saturday, 10th February, when he was discharged.

Taylor is hopelessly demented, and there can be little doubt that although he may be properly nursed and cared for by Burnham, his property is at the man's mercy.

I have, &c.,
G. W. TAYLOR,
Acting Government Medical Officer.

[Enclosure.]

Hospital for the Insane, Callan Park, Balmain, 8 February, 1894.

Dear Dr. Taylor,

Abraham Taylor was discharged from this hospital on the 30th November, 1893, and was then hopelessly demented and quite incapable of managing his affairs or taking care of himself.

The Acting Government Medical Officer.

Yours faithfully,
H. BLAXLAND.

Minute by the Government Medical Adviser.

I think that this grave matter might be inquired into by the Inspector-General of Police.—A.S., 12/2/94.

Minutes by the Inspector-General of Police.

For prompt police inquiry. The Master-in-Lunacy may take action.—E.F., 13/—Immediate. Report attached. I think this man should be again placed in the Asylum. Perhaps the Master-in-Lunacy may intervene.—EDMUND FOSBERY (I.-G.P.), B.C., 13/2/94. The Government Medical Adviser.

Minute by the Government Medical Adviser.

As it seems that the Master-in-Lunacy cannot interfere till the person is actually declared to be insane, it would appear desirable that the Inspector-General of Police should take steps to have Taylor charged again.—A.S., 14/2/94.

Minute by the Inspector-General of Police.

Will Superintendent Read have this attended to.—E.F., 15/2/94.

Minute by Superintendent Read to Inspector Atwill.

Forwarded to Inspector Atwill for attention by Senior-Sergeant Boyd.—GEORGE READ, Superintendent. Police Department, Superintendent's Office, Metropolitan District, 15 February, 1894.

Notice to the Master-in-Lunacy of the admission of Abraham Taylor into the Hospital for the Insane at Callan Park.

Date of admission.	Address of relatives and friends.	Property, &c.	Remarks.
1894. 17 February	£5 18s. 7d., 1 coin and purse, 1 gold watch and guard, 1 gold ring, 1 scarf pin.	Formerly a patient here. Name does not appear on pay list.

H. B., Medical Superintendent.

Urgent.—This man is said to have considerable property in land and money. He was discharged from Callan Park to care of his wife, being then insane, and on her death fell into the hands of Charles Burnham, who had been employed by wife to wait on and attend to him. Burnham is said to have obtained money and other property from patient directly and by deed of gift since the wife's death.—F.N.M., 22/2/94. The Master in Lunacy.

Memo.

Memo. from Senior-Sergeant A. Boyd to Mr. Superintendent Read.

Balmain Police Station, 19 February, 1894.

ABRAHAM TAYLOR referred to in attached papers was on the 16th instant brought before Mr. Smithers, S.M., at the Central Police Court on warrant charged with "deemed to be insane," and on the recommendation of Doctors Taylor and Graham was ordered to be sent to the Hospital for Insane at Callan Park.

Inventory of property now at Taylor's residence, 40, Smith-street, Balmain, and in charge of the Police, herewith attached.

A. BOYD,
Senior Sergeant.

Forwarded to the Inspector-General, who perhaps will be good enough to send an attached list to the Master-in-Lunacy.—G. READ (Superintendent), 19/2/94.

[Enclosure.]

INVENTORY of furniture, &c., belonging to Abraham Taylor (an inmate of Callan Park Hospital for Insane), now at 40, Smith-street, Balmain.

Front Room.

Six horsehair chairs; 1 horsehair couch; 1 chiffonier; 1 pier glass; 1 round table; 1 table cloth; 8 vases; 2 decanters; 1 sugar basin; 1 tray; 2 jam dishes; 1 fly catcher; 1 toast rack; 2 cruet stands; 2 salts (*sic*); 1 work box; 1 album; 7 antimacassars; 2 spittoons; 1 coal scuttle; 1 fender; 1 glass case; 7 pictures; 1 set of window curtains; 1 cornice pole; 10 table spoons; 5 dessert spoons; 6 small spoons; 4 dessert forks; 12 large forks; 1 stool; 9 dinner knives; 2 breakfast knives; 3 walking sticks; 1 carpet; 4 door mats; 1 hearth rug.

Front Bed-room.

One wooden bedstead and bedding; 1 wardrobe; 4 chairs; 2 boxes containing wearing apparel; 1 dressing-table; 1 mirror; 1 small clock; 1 tin hat-box; 2 brushes; 1 comb; 1 wash-hand stand, jug, and basin; 1 water bottle; 1 set window curtains; 1 cornice pole; and a quantity of man's wearing apparel.

Back Bed-room.

One wooden bedstead and bedding; 1 set old curtains; 1 dressing table; 2 small mirrors; 1 chest of drawers containing clothes, &c.; 5 boxes containing lumber; 1 wash-hand stand and set; 1 clothes basket; 5 small pictures; 1 brass candlestick.

Dining-room.

1 table and oilcloth cover; 4 chairs; 1 safe; 1 writing desk; 3 small vases; 10 pictures; 1 set small book shelves; 1 fender; 1 hearth rug; some books and photographs; 2 pieces oilcloth; 1 hair broom; 1 small lamp; 3 tumblers; 1 cosey; 6 straw mats.

Kitchen.

1 table; 1 chair; 1 box iron; 1 coffee-mill; 3 jugs; 1 coffee-pot; 1 lamp; 1 deal box; 5 meat dishes; 2 vegetable dishes; 12 plates; 6 cups and saucers; 3 trays; 3 pots; 2 kettles; 1 carving knife and fork; 3 knives; 6 forks; 2 dessert spoons; 2 table spoons; 9 tea spoons; 1 sugar basin; 1 tablecloth; 1 handsaw; 1 baking board; 2 dish covers; 1 tin dish; 2 tea caddies; 1 frying pan; 3 wash tubs; 1 watering can; 1 wash board; 1 boiler; 1 syringe; a quantity of sundries.

In box in front room—1 cash-box; 2 spirit flasks; 2 pairs scissors in case; 1 cigar holder; 1 horn snuff-box.

A small tin box, containing—1 silver brooch; 3 gold brooches; 2 gold locket; 1 gold chain; 1 pair gold earrings; 8 gold rings; 1 piece of stone; 1 silver pencil-case.

A tin box, containing—abstract of title to land, papers, &c.

A. BOYD,
Senior Sergeant.

19th February, 1894.

Urgent.—Referred to the Master-in-Lunacy.—EDMUND FOSBERY (I.-G.P.), B.C., 19/2/94.

The Inspector-General of Police might be requested to send the tin boxes (2) to the Master, and retain custody, pending further instructions, of the furniture. The Medical Superintendent might be invited to report as to probability of the patient's discharge, to enable the Master to decide as to disposal or otherwise of his property.—H.E., 22/2/94. Urgent.

Approved.—H.F.B., 22/2/94.

Will the Inspector-General of Police kindly cause the two boxes mentioned in the accompanying inventory, with the contents thereof, to be forwarded to the Master-in-Lunacy, and the patient's furniture herein enumerated to be taken charge of pending further instructions.—HENRY EDWARDS (Chief Clerk), B.C., Master-in-Lunacy's Office, 22nd February, 1894. The Inspector-General of Police.

Boxes handed to Master-in-Lunacy as directed. Receipt herewith attached.—A. BOYD (Sen. Sergt.), Balmain, 24th February, 1894. A. Atwill, Esq., Inspector. Forwarded to the Inspector General.—G. READ (Supt.), 26/2/94. Papers returned herewith.—EDM. FOSBERY (I.-G. Police), B.C., 26/2/94. The Master-in-Lunacy.

1894.

NEW SOUTH WALES.

PRISONS.

(REPORT FOR 1893.)

Presented to Parliament by Command.

The Comptroller-General of Prisons to The Under Secretary of Justice.

Department of Prisons, N.S.W., Comptroller-General's Office,

Sydney, 9 May, 1894.

Sir,

I have the honor to forward herewith my Departmental Report to the Minister of Justice for the year ended 31st December, 1893, together with the usual tabulated statistics.

I have, &c.,

GEORGE MILLER,
Comptroller-General.

The Comptroller-General of Prisons to The Minister of Justice.

Department of Prisons, N.S.W., Comptroller-General's Office,

Sydney, 9 May, 1894.

Sir,

I have the honor to furnish my Report for the year 1893, and to attach the usual statistical particulars in tabulated form.

The number of gaols in operation on the 31st December, 1893, was 59; 36 of these were police gaols, which are occupied partly by this Department and partly by the Police for purposes of economy.

The total number of prisoners distributed throughout these gaols on the last day of the year was 2,445, as against 2,622 at the end of the previous year, while it is estimated that the population of the Colony has increased from 1,197,050 to 1,223,370.

The number of distinct persons received during the year was 12,002, as compared with 11,806 received during 1892.

The total entries and discharges during the year numbered 19,080 and 19,257 respectively, as against 18,910 and 18,904 during 1892. In these numbers are included incorrigible offenders who served more than one short sentence during the year.

The number of deaths during the year was 36. Of this number, 5 were executions and 1 was a case of suicide.

The net value of all kinds of work done by prisoners in the gaols of the Colony was £51,399 19s. 1d. as compared with £52,615 0s. 7d. for 1892. In this return Trial Bay prison is not included.

As regards the employment of prisoners upon useful or productive work, it must be repeated that there is always a large number of men whose services are not available for labour. They consist of prisoners awaiting trial, prisoners in cells, those who are undergoing hospital or medical treatment, and therefore exempt from work, and those sentenced to imprisonment only who keep themselves. There are also incapables, imbeciles, and semi-lunatics, and to take care of such prisoners a certain number of well-conducted, healthy prisoners must be employed. The prison population is chiefly recruited from the idle and vicious classes, not from the hard-working and industrious.

The reconvictions at Circuit Courts and Courts of Quarter Sessions were for the first-class or gravest offenders (five years and upwards) 15 under second convictions, 7 under third, and 39 under fourth or more convictions, as against 10, 16, and 29 for the previous year. For the second class, being prisoners under sentences of less than five years, the numbers were second convictions 111, third 50, fourth or more 101, as compared with 107, 38, and 83 for the previous year. For the third class (imprisonment only) there were 2 prisoners under a second conviction as against 3 for 1892.

The reconvictions at the lower courts (drunkards and petty offenders), during the year 1893 only, were 1,107 second convictions, 343 third, and 338 fourth or more convictions, as against 1,100, 393, and 384 for preceding year.

The Shaftesbury Reformatory for Girls, at South Head, was transferred to the Colonial Secretary's Department by *Gazette* notice on 10th April, 1893.

The new gaol at Grafton, which was referred to in my previous reports, having been handed over by the contractors, was proclaimed on the 8th September last, and the prisoners were removed from the old to the new establishment on the 3rd November following. The new gaol is a fine structure, affording means for the proper treatment of prisoners which could not be carried out in the old gaol.

The police gaol at Grenfell was disestablished and reduced to a police lockup on 9th December last, in consequence of the discontinuance of the Court of Quarter Sessions at that place.

Proper punishment cells have been built in the male and female divisions at Biloea Gaol. The cells were completed and taken into use in September last. These additions have produced a marked improvement in the behaviour of the prisoners of both sexes, inasmuch as breaches of order and prison discipline can now be properly dealt with. The whole of the stone used in building the cells for the female division was quarried, rough dressed, and conveyed to the site by prison labour. Other additions and alterations have been carried out at this gaol which have much improved the organisation. In October last, two small portions of land were by proclamation added to the gaol premises.

By the additions to Goulburn Gaol, which were completed under contract during the year, the accommodation has been increased by 127 cells, which will be of great use in furthering one of the great

aims of the Department, which is to provide a separate cell for every prisoner at night, and thus prevent, in a great measure, the contamination arising from evil association. Six special yards for youthful offenders and a new yard for prisoners awaiting trial have also been constructed. They were built by prison labour at a moderate cost.

The much-needed addition of seven classification yards to Maitland Gaol was completed by prison labour during the year, and this addition has much improved the means of working the gaol. Until these yards were completed there were only two yards for the classification of the prisoners; now there are nine, two of which are special yards for the treatment of refractory men.

The crematory at Bathurst Gaol has been entirely rebuilt by prison labour, and a large smoke stack to carry the fumes and smoke of the crematory above the gaol has been erected. It will be necessary to build another crematory for use while repairs are being effected from time to time to the existing one, as it is not likely that any sort of fireplace can be constructed to withstand the fierce heat to which the crematory is subjected. The Governor reports that the visiting surgeon strongly objects to any more ordure being buried in the prison reserve.

Various minor improvements and additions have been made to Darlinghurst Gaol, which much add to the effectiveness of the organisation. When the necessary funds have been provided by Parliament it is intended to furnish this gaol with the electric light, which is also to be extended to the court-house adjoining, and to the receiving-house opposite the gaol. This, it is estimated, will lead to a very considerable saving, as the expense on account of the quantity of gas which it is necessary to consume to properly light the gaol is now very heavy.

I am glad to be able to state that the separate yard at Armidale Gaol for the accommodation of prisoners awaiting trial and under remand was completed during the year, and has been in use for some time past, much to the improvement of the discipline of the gaol. At Tamworth a similar improvement was commenced, but had not been completed when the year closed.

The necessities of retrenchment prevented me from making recommendations as to further improvements in country gaols, with a view to provide proper means of classifying and separating the prisoners according to modern ideas of prison management. There is still much to be done in this direction in the different gaol establishments of the Colony.

The cabbage-tree hat making industry has been introduced into many of the gaols, and this will enable me to entirely dispense with the felt hat for prisoners, who will in future be provided with cabbage-tree hats made in the gaols.

At Bathurst Gaol, the marble cutting and polishing industry has been started, and the results so far are very satisfactory. The proximity of marble quarries to this gaol makes it an easy matter to procure the necessary material.

The draft amended Regulations for the treatment of youthful offenders, referred to in my report for last year, after undergoing further amendment under the instructions of the late Minister of Justice (Mr. R. E. O'Connor), were formally gazetted and brought into force on the 17th April, 1893, and a copy is attached to this report as Appendix G.

As will be seen from the introductory clause, these regulations apply only to prisoners of not more than 25 years of age, under sentences not exceeding 12 months.

The object aimed at is to endeavour, by short and sharp treatment, to create in the minds of youthful offenders a wholesome dread of a prison.

As under the old Regulations, they are kept apart not only from the older criminals, but also from each other, and the important principle of separation is thus carefully preserved, so as to guard each prisoner against the effects of pernicious association; but the confinement is not "solitary," inasmuch as they are regularly visited by the chaplain, surgeon, schoolmaster, and other officials, and are allowed daily exercise and monthly visits from friends.

In cases where the sentence does not exceed 14 days, the diet is limited to bread and water.

In sentences exceeding 14 days, but not exceeding 6 months, and for the first 6 months of sentences exceeding that period, the bread and water diet alternates weekly with a substantial ration.

When a sentence exceeds 6 months the prisoner is, during the last 14 days of such sentence, limited to a bread and water diet. The object of this treatment is to send him out of the prison with the feeling that it is a place to be dreaded.

In sentences not exceeding 6 months, a plank bed is provided, without a mattress or substitute therefor, throughout that term.

The Regulations further require that the prison surgeon shall visit each prisoner in separate treatment daily, so as to guard against any permanent injury to health.

It is hoped that by the stringent nature of this treatment, juvenile crime and "larrikinism" in their first stages will be effectually checked. Short sentences carrying such treatment should be much more effectual than long ones under the old conditions of servitude. To be deterrent, the punishment must be made a really genuine one.

In its application to youths under 16, this treatment is intended more for the incidental offenders than for the vicious and incorrigible youths. It is recognised that a chance offender, whose crime was committed through recklessness, passion, or the force of bad example, requires penitential discipline only, while the youth who has shown by his depraved and vicious habits that he is incorrigible, should be subjected to lengthened detention and treatment of a disciplinary and instructive character in a reformatory, with plenty of hard work, chiefly in the open air. To place youthful first offenders in a reformatory for a long period would, as a general rule, be an unwise and an expensive proceeding, entailing heavy expense on the State, and relieving the parents of responsibilities which they should be made to bear. The discretion in such cases must, of course, be left with the courts which deal with the young law-breakers.

With a few exceptions, the conduct of the officers of the prison staffs has been very satisfactory, and, generally speaking, good order and discipline have been maintained among the prisoners.

The benefits of the sections of the Civil Service Act providing for superannuation allowances continue to be felt by the Department, as it tends to considerably improve the efficiency of the staff by enabling officers who have reached old age to retire on a small pension and thus make room for young and vigorous successors.

I have, &c.,
 GEORGE MILLER,
 Comptroller-General.

(A.)

(B.) RETURNS showing Value of Labour performed in the Gaols of New South Wales during the year 1893.

Gaol.	Value of all labour, including cost of Material.			Cost of Material.			Net Value.			Work done for the Prisons comprising buildings, extensions, &c., repairs, manufacturing, cleaning, daily work and labour, inclusive of cost of material.			
	£	s.	d.	£	s.	d.	£	s.	d.		£	s.	d.
Darlinghurst	17,270	13	2	6,369	4	1	10,901	14	1	7,050	11	8	
Parramatta	11,601	12	7	2,584	4	11	9,017	7	8	9,115	8	4	
Biloela	3,901	1	7	449	0	4	3,452	1	3	3,251	10	1	
Berrima	1,135	6	11	198	10	1	936	16	10	989	14	2	
Maitland	5,375	15	0	1,245	14	2	4,130	0	10	4,477	0	8	
Bathurst	8,586	16	7	1,838	15	4	6,748	1	3	6,205	16	3	
Goulburn	6,801	12	5	1,468	4	11	5,333	7	6	4,831	2	3	
Mudgee	424	5	8	8	2	10	416	2	10	419	3	10	
Armidale	864	16	5	67	4	6	797	11	11	580	8	4	
Young	914	15	3	102	19	11	811	15	4	841	12	1	
Grafton	368	3	0	.....	.....	.....	368	3	0	311	0	10
Albury	1,290	4	9	152	8	7	1,137	16	2	894	0	5	
Deniliquin	332	9	10	4	18	4	327	11	6	233	0	0	
Wilcannia	645	5	4	17	12	8	627	12	8	621	8	8	
Hay	481	14	8	10	3	2	471	11	6	451	19	0	
Wollongong	210	9	9	7	2	11	203	6	10	210	9	9	
Wagga Wagga	268	3	10	1	5	0	266	18	10	247	7	10	
Dubbo	884	6	11	34	17	6	849	9	5	712	13	2	
Yass	233	15	1	0	16	2	232	18	11	224	10	11	
Tamworth	560	3	10	1	12	5	558	11	5	546	0	1	
Forbes	206	0	6	.....	.....	.....	206	0	6	202	2	6
Broken Hill	260	16	0	5	0	8	255	15	4	260	16	0	
Police Gaols	3,358	19	6	9	16	0	3,349	3	6	2,990	15	7	
TOTAL.....	£	65,977	13	7	14,577	14	6	51,399	19	1	45,668	12	5

(C.)—HOSPITAL RETURN, 1893.

Gaol.	Treated in Hospital.	Treated out of Hospital.	Deaths.
Darlinghurst	515	6,456	7
Parramatta	148	2,986	4
Bathurst	49	1,787	2
Berrima	33	131	.....
Biloela	127	3,060	3
Goulburn	157	1,440	1
Maitland	16	330	2
Trial Bay	151	1,071	.....
Albury	14	131	2
Armidale	3	73	1
Broken Hill	11	151	.....
Deniliquin	1	50	.....
Dubbo	33	172	4
Forbes	1	140	1
Grafton	1	260	.....
Hay	7	95	.....
Mudgee	22	17	1
Tamworth	16	219	.....
Wagga Wagga .....	.....	39	.....
Wollongong	2	64	.....
Wilcannia	14	295	1
Yass	1	39	1
Young	14	74	.....
Police Gaols	42	458	6
TOTALS	1,378	19,528	*36

*Of this number 5 were executions—3 taking place at Darlinghurst Gaol, and 1 each at Bathurst and Mudgee Gaols.

(D.)—EDUCATION RETURN for the year ending 31st December, 1893.

	Gaol.	Total Number of Prisoners.		Read, write, and cypher up to Gaol Standard of Education.		Read, write, and cypher not up to Gaol Standard of Education.		Read and write.		Read only.		Commencing.	
		Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
Number of prisoners attending school on 31st December, 1893, showing state of education on reception.	Darlinghurst..	33	...	...	...	9	...	19	...	...	...	5	...
	Bathurst	22	...	...	...	2	...	7	...	6	...	7	...
	Berrima	14	...	...	...	7	...	2	...	1	...	4	...
	Goulburn.....	21	...	...	...	6	...	4	...	2	...	9	...
	Maitland	12	...	...	...	2	...	3	...	3	...	4	...
	Parramatta ...	51	...	...	...	16	...	27	...	...	...	8	...
		153	...	...	...	42	...	62	...	12	...	37	...
Number of prisoners who have received tuition during the year, and passed out of the school, showing state of education on reception.	Darlinghurst..	391	...	...	...	104	...	222	...	...	...	65	...
	Bathurst	57	...	...	...	5	...	10	...	15	...	27	...
	Berrima	17	...	...	...	10	...	4	...	2	...	1	...
	Goulburn.....	33	...	...	...	9	...	5	...	3	...	16	...
	Maitland	42	...	...	...	1	...	16	...	8	...	17	...
	Parramatta ...	252	...	...	...	76	...	140	...	7	...	29	...
		792	...	...	...	205	...	397	...	35	...	155	...
	TOTALS.....	945	...	...	...	247	...	459	...	47	...	192	...
Number of prisoners above referred to, who were not educated to the gaol standard upon reception into school, showing progress made.	Darlinghurst..	424	...	35	...	162	...	180	...	...	...	47	...
	Bathurst	79	...	9	...	22	...	18	...	17	...	13	...
	Berrima	31	...	1	...	23	...	6	...	1	...	...	...
	Goulburn.....	54	...	20	...	15	...	8	...	5	...	6	...
	Maitland	54	...	7	...	11	...	18	...	11	...	7	...
	Parramatta ...	303	...	76	...	58	...	147	...	11	...	11	...
	TOTALS.....	945	...	148	...	291	...	377	...	45	...	84	...

(E.)—RECONVICTIONS of Prisoners sentenced at Circuit Courts and Courts of Quarter Sessions, irrespective of the year in which the previous convictions were recorded.

1st Class. Five years and upwards.			2nd Class. Less than five years.			3rd Class. Imprisonment only.		
2nd conviction.	3rd conviction.	4th or more.	2nd conviction.	3rd conviction.	4th or more.	2nd conviction.	3rd conviction.	4th or more.
15	7	39	111	50	101	2	Nil.	Nil.

RECONVICTIONS of Prisoners sentenced at the Lower Courts during the year 1893 only.

	2nd conviction.	3rd conviction.	4th or more.
Petty Offenders	1,107	343	338

(F.)—H. M. TRIAL BAY PRISON.

Modified servitude prisoners received during year 1893.	Average number of modified servitude prisoners employed.	Date of commencement of tipping stone in break-water proper.	Amount of stone put in break-water up to 31st December, 1893.
101	130.9	7 November, 1889.	Tons. 127,604

(G.)

Department of Justice, Sydney, 17th April, 1893.

ADDITIONAL REGULATIONS FOR REFORMATORY PRISON TREATMENT OF CERTAIN MALE OFFENDERS.

His Excellency the Lieutenant-Governor, with the advice of the Executive Council, has been pleased, under section 5 of 4 Victoria No. 29, to make the following additional Regulations for Reformatory Prison Treatment of certain Male Offenders, in substitution for those of 15th November, 1888.

R. E. O'CONNOR.

There shall be a seventh class of prisoners, comprising persons of not more than 25 years of age under sentences of imprisonment, with or without hard labour, not exceeding twelve months, who shall be treated during such sentences under the following conditions of separate treatment:—

1. Each prisoner shall occupy a separate cell, and shall be employed upon such suitable work as may be furnished to him.
2. He may be allowed exercise for one hour each day, and a longer period if thought necessary by the surgeon.
3. He may, if coming under the Regulations as to eligibility for school, be allowed one hour daily for performing tasks to be set for him by the schoolmaster, and one hour for reading such instructive and reforming books as may be selected for him by the Chaplain. He shall at all times be provided with a Bible.
4. He shall not, under any pretence, attempt to communicate with another prisoner. He must neither read aloud, sing, whistle, dance, nor make any noise in his cell, exercise ground, in the corridor, or chapel.
5. He shall rise immediately upon the first bell being rung, wash his hands and face, and make up his bedding neatly in such form as may be directed.
6. He shall keep his person, cell, and the furniture therein in the highest state of cleanliness.
7. He shall wash his feet twice in summer, and once in winter, weekly, and shall bathe once a week.
8. He shall not be allowed to alter his clothing, and shall keep it clean and in proper repair.
9. He shall, on hearing his cell door open, at once, if not in bed, stand up in the centre of his cell, facing the door, with his hands by his side and his heels close together.
10. In marching to or returning from the exercise grounds or chapel, he shall keep 5 yards distant from any other prisoner.
11. Any prisoner requiring assistance or instruction, or having anything to communicate, may ring his gong for the officer on duty; but all conversation not strictly necessary is to be avoided, and on no account is the gong to be rung without sufficient reason.
12. At the order "Prepare for exercise," the prisoner shall, as soon as the door is opened, move out of his cell to the exercise circle, and take up the position assigned to him by the officer; at the word "One," he shall stoop down and take hold of the rope handle attached to the marching chain; at the word "Two," he shall at once assume an erect position, retaining hold of the marching chain, and so remain at attention until the officer calls "Walk round." During wet or very hot days he may (by permission of the officer) remain in his cell, or take such exercise as may be practicable and directed, in the corridor.
13. He shall be very respectful to all officers of the Government, and shall never pass a superior officer of the prison without touching his hat.
14. The scale of dietary will be—16 oz. bread; 8 oz. meal; 8 oz. meat; 8 oz. potatoes; 1 oz. sugar; $\frac{1}{4}$ oz. soap $\frac{1}{4}$ oz. salt.
15. The surgeon shall visit daily each prisoner of the seventh class in his prison.
16. Each prisoner shall be weighed monthly, and reports of weight shall be laid before the surgeon at the commencement of each month.
17. The prisoners shall be allowed the usual monthly visits, but in each case the gaoler must be satisfied that the visitor is a person to whom it is desirable to permit the privilege.
18. Correspondence will be permitted in terms of Regulations No. 31.
19. Each prisoner of the seventh class shall be provided with a plank bed, which shall be used without a mattress or substitute therefor for a period of six months. A coir pillow of 4 $\frac{1}{4}$ inches in diameter will be allowed.
20. After a period of six months a coir mattress will be allowed; but, in case of misconduct, the Visiting Justice may direct the prisoner, apart from any cell or other punishment, to be deprived of his mattress for a period not to exceed fourteen days.
21. In cases of short sentences not exceeding fourteen days the dietary scale shall be limited to bread and water (Prison ration No. 5). Each prisoner so treated shall not be subject to the conditions prescribed in Regulations 2, 10, 12, and 14. He shall, however, be required to conform to Regulations 1, 3 (except as regards school), 4, 5, 6, 7, 8, 9, 11, and 13. He shall not be allowed to receive visits, nor to write letters.
22. In cases where the sentence is for more than fourteen days but not exceeding six months, and for the first six months of sentences exceeding that period, each prisoner shall be placed on bread and water diet (Prison ration No. 5) during the first week of his sentence; during the second week he shall receive the ration prescribed in Regulation 14 (Prison ration No. 9), and so on throughout the period of six months No. 5 ration shall alternate weekly with No. 9. In other respects he shall be subject to the conditions of all the above Regulations, excepting 21, *while in receipt of No. 9 ration*, and to the conditions prescribed in Regulations 21 only *while in receipt of No. 5 ration*; but the gaoler may allow such exercise as he may deem necessary, on the advice of the visiting surgeon, for any prisoner on the reduced ration No. 5.
23. In cases where the sentence exceeds six months each prisoner shall, during the last fourteen days of his sentence, be treated in the manner prescribed in Regulation 21.
24. These Regulations shall not apply to any seventh class prisoner who may have been sentenced prior to their publication in the *Government Gazette*, but all such prisoners shall be treated in accordance with, and shall conform to, the Regulations of the 15th November, 1888, hereinbefore mentioned.

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

PRISON LABOUR—MAT-MAKING INDUSTRY.

(CORRESPONDENCE WITH MESSRS. ARMSTRONG AND SON RESPECTING.)

Ordered by the Legislative Assembly to be printed, 9 May, 1894.

RETURN to an *Order* of the Honorable the Legislative Assembly of New South Wales, dated 8th February, 1894, That there be laid upon the Table of this House,—

“ A Return showing the whole of the correspondence that has passed
“ between the firm of John Armstrong and Sons and the Department of
“ Justice relative to prison labour competing with free labour in the mat-
“ making industry.”

(Mr. Houghton.)

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No. 1.

J. Armstrong and Son to The Minister of Justice.

Sir, 114, Riley-street, Woolloomooloo, 2 September, 1887.

We regret that the action of the gaol authorities who have charge of the mat-making department necessitates our bringing the subject again under your notice.

The result of the present policy will be so disastrous to us that we implore your earnest consideration to the statements which follow.

In the beginning of the present year the Darlinghurst Gaol authorities issued a new list reducing the prices of mats from 9d. to 8d. per lb., making a difference in a mat weighing 15 lb. of 1s. 3d., or fully ten per cent. (10 per cent.).

We wrote to Sir Henry Parkes, who referred our letter to you as Minister of Justice, and your reply was to the effect that you saw no reason to interfere, as the reduction was so small and the price still higher than the imported mats.

Recently mat-making has been started at the Parramatta Gaol as well as at Darlinghurst. Price-lists or circulars have lately been issued and presented to our customers reducing the price of the class of mats made by us to sixpence (6d.) per pound net, or more than twenty-five (25) per cent. less than the price obtained last year.

Further, on the 2nd instant a price-list was issued from Darlinghurst which may be termed a measurement-list, offering our description of mats at one shilling (1s.) per square foot, not only another reduction of price, but initiating a system liable to serious abuse. Singular to state, Parramatta Gaol is offering the same mats at 9d. per square foot which Darlinghurst quotes at 1s.

For many years we have laboured hard to establish our business by exercising strict economy and working very hard. We have so far succeeded as to have last year manufactured and supplied to Sydney trades-people over five thousand (5,000) mats at the regular price of 9d. per lb., less 10 per cent., notwithstanding that H.M. Gaol at Darlinghurst was also manufacturing similar goods.

We may point out that the Colonial mats are superior in quality to the imported, and that it is impossible to compete in price with the imported mats and pay wages, or even secure a livelihood; but there is a market here for Colonial-made mats at the old price, and there is no necessity for the reductions which have been made unless the desire is to destroy our means of living. We beg to say that it is not a question of prison labour competing with importers, but of prison labour crushing out a local industry.

As far back as 1880 the gaol authorities proposed to reduce the price. We then wrote to Sir Henry Parkes and we received a letter from Sir George Innes, at that time Minister of Justice, stating that the price should not be lowered.

We also respectfully protest against any persons from Her Majesty's gaols being allowed to measure doorways in the city and supplying mats to order, thus interfering with the interests of trades-people as well as ourselves.

We have no wish to dictate to the Government, but we do earnestly protest against prison labour being permitted, or rather employed, to crush out our business and involve men who are good citizens and struggling hard for their families, to be ruined by such unequal competition.

We

We trust you will give this matter earnest consideration, and if our letter is not sufficiently clear, kindly allow us an interview in order that we may fully explain the whole position, or we should be glad to be examined, not only by yourself, but by any disinterested gentleman or committee who may be appointed to conduct such examination.

Anxiously awaiting your favourable reply,—

We have, &c.,

J. ARMSTRONG AND SON.

Submitted.—A.C.F., 23/9/87. Acknowledge this letter and state that the subject will receive the prompt and serious consideration of the Minister of Justice.—W.C., 27/9/87. The Comptroller-General of Prisons for favour of an early report hereon.—W.C., 27/9/87.

No. 2.

The Under Secretary of Justice to J. Armstrong and Son.

Gentlemen,

Department of Justice, Sydney, 27 September, 1887.

In acknowledging the receipt of your letter of the 22nd instant, calling attention to the reduction in the price of mat-making in Sydney and Parramatta gaols, I have the honor to inform you that the subject will receive the prompt and serious consideration of the Minister of Justice.

I have, &c.,

ARCH. C. FRASER,

Acting Under Secretary.

No. 3.

The Comptroller-General of Prisons to The Under Secretary of Justice.

6 October, 1887.

I beg to refer to my former report of 25th May last. The customers have been and are customers of prison trade as well as of Messrs. Armstrong.

The class of mats is of a cheaper form to give employment to comparatively unskilled hands with lesser appliances, and now employ from forty to fifty men.

The price is cast not as in competition with Messrs. Armstrong, but with English prison-made imported mats of the same class, and at a rate of about 20 per cent. in advance of the charge for imported.

There has been no reduction made, because this article has only lately been introduced, so the alleged reduction from the price of another class of last year does not apply. Were it even applicable it would not be a reduction of 25 per cent., but 15, then by an allowance on the first manufacture of 10 per cent. discount.

2. The alteration complained of is only from weight to measurement at the same price in accordance with the general trade custom. It does not open the way to any abuse. The Parramatta is another class of cheaper mat, and sold without discount.

If Messrs. Armstrong can show that for any class of mat the prison charge is less than their own, the prison charge would be increased in order to relieve them of any disadvantage.

I am informed that Messrs. Armstrong's establishment only employs beyond the family a few hands.

HAROLD MACLEAN,

Comptroller-General of Prisons.

Submitted.—T.E.M.N., 7/10/87. Messrs. Armstrong to be communicated with to this effect.—W.C., 8/10/87.

No. 4.

The Under Secretary of Justice to J. Armstrong and Son.

Gentlemen,

Department of Justice, Sydney, 10 October, 1887.

Referring to your letter of the 22nd ultimo, calling attention to the reduction in price of mat-making in Sydney and Parramatta gaols, I am directed by the Minister of Justice to inform you that if you can show that for any class of mat the prison charge is less than your own, the prison charge will be increased in order to relieve you of any disadvantage.

I have, &c.,

ARCH. C. FRASER,

Acting Under Secretary.

No. 5.

J. Armstrong and Son to The Minister of Justice.

Sir,

114, Riley-street, Woolloomooloo, 15 October, 1887.

We have the honor to acknowledge your letter of the 10th instant, and to express our sincere thanks for your proposal to increase the prison charges of mats to the same as our own, so that we may not be placed at a disadvantage.

We now respectfully point out the reductions in prices, as shown by the enclosed price-lists, issued by the Sydney and Parramatta gaol authorities.

A List—H.M. Gaol, Sydney, 1887:—

No. 1. Diamond-backed brush, 8d. per lb. = our price, 9d.	} In both cases subject to discount of 10 per cent.
No. 2. " border, 9d. " " 10d.	
No. 3. Superfino frame border, 1s. 1d. " " 1s. 2d.	

B.

B. List, H.M. Gaol, Parramatta:—
 C.F.F. Diamond-back mats, 1 to 7, 6d. net = our price, 9d. } Less 10 per cent.
 " " (outside) 7d. net. " 10d. } discount.

The above statements are in accord with the third and fifth sentences of our letter of 22nd September.

C. List, Sydney Gaol, 2nd September, 1887:—
 Diamond-backed brush plain, 1s. per foot.

D. List, Parramatta Gaol.

For same mats, 9d. per foot; and all larger sizes than those enumerated at 7d. per lb. net, as against our 10d. per lb., less 10 per cent., or 9d. per lb. net.

In the sixth sentence of our letter of 22nd September we referred to the issue of measurement lists, not only another reduction in prices, and strangely differing in the two gaols, but also initiating a system liable to serious abuse.

To sell by weight is fairest and most satisfactory both to buyer and seller, but to sell by measurement affords an opportunity for one maker supplying proportionately heavier mats, thus taking advantage of another maker, and in the case of a public institution opening the way for a wrong estimate of the quantity of raw material actually used, and which can only be checked by extremely close and careful stock-taking. This matter could be better explained in a personal interview.

There is no doubt whatever that the system of selling by weight rather than by measurement is now recognised by all competent authorities on modern systems of business, as calculated to provide safety to manufacturers, sellers, and consumers.

We trust that we have been sufficiently explicit in this letter to enable you to see your way clear to give instructions to recall all the price-lists which have been issued this year, and issue new lists at the old rates, and under the system of selling only by weight.

We are, &c.,
 J. ARMSTRONG AND SON.

The Comptroller-General of Prisons for favour of report.—A.C.F., B.C., 21/10/87.

I have, after consultation with Messrs. Armstrong, my own officers, and some gentlemen connected with the sale of mats, arranged this matter to the satisfaction of Messrs. Armstrong.—H.M., B.C., 21/10/87. The Under Secretary of Justice.

Seen.—W.C., 22/11/87. Inform W. S. Buzacott, Esq., Market-street, of the terms of the minute of the C.-G. of Prisons.—W.C., 23/11/87.

No. 6.

The Under Secretary of Justice to W. S. Buzacott, Esq.

Sir,

Department of Justice, Sydney, 29 November, 1887.

With reference to recent correspondence that has taken place between Messrs. Armstrong and Son and this Department respecting the prices charged for mats manufactured in Sydney and Parramatta Gaols, I have the honor, by direction of the Minister of Justice, to inform you that the Comptroller-General of Prisons reports that, after consultation with Messrs. Armstrong and Son, his own officers, and some gentlemen connected with the sale of mats, he has arranged this matter to the satisfaction of Messrs. Armstrong and Son.

I have, &c.,
 ARCH. C. FRASER,
 Acting Under Secretary.

No. 7.

W. S. Buzacott, Esq., to The Minister of Justice.

Dear Sir,

Market and Sussex Streets, Sydney, 30 November, 1887.

I have the honor to acknowledge your letter of the 28th instant, No. 87-1205, informing me that the Comptroller-General of Prisons has arranged the matter of the sale of mats satisfactorily with Messrs. Armstrong and Son.

I am extremely glad of this result, and beg to express my sincere thanks for your kind consideration.

I remain, &c.,
 WALTER S. BUZACOTT.

Seen.—W.C., 1/12/87.

No. 8.

Minute by the Comptroller-General of Prisons to The Superintendent of Prison Industries.

It is represented to me that the new mat, called the "Centennial," is practically as good a mat as the Diamond mat, and that selling them at [the present rate is a departure from the understanding with Messrs. Armstrong & Co.

The price for this mat was approved by me on the understanding that it was a fair price with a moderate margin for profit, for an entirely inferior description of mat, made by an inferior class of workmen, and was in no way within the meaning of the arrangement with Messrs. Armstrong & Co. to Diamond Backs.

It is further represented that the introduction of the "Centennial" mat has materially interfered with Messrs. Armstrong's sale of Diamond Backs.

What amount of sale so to interfere has been made in Sydney? The Superintendent of Industries to visit Parramatta, confer with Overseer Danks, and furnish a full report.

H.M., 2/5/88.

How many men would be thrown out by abandoning the mat industry; how by the "Centennial" mat?

No. 9.

The Superintendent of Prison Industries to The Comptroller-General of Prisons.

Sir,

Sydney Gaol, 7 May, 1888.

I have the honor to report, for information of the Comptroller-General of Prisons, *re* manufacture and sale of mat called "Centennial."

This mat is of a distinctly different class, and much inferior to that called "Diamond Back." It is sold at a fair margin of profit, viz., £17 per ton value of labour, and is in no way a departure from the understanding arrived at with Messrs. Armstrong and Son, and cannot, as stated, have interfered with their sales of "Diamond Back" mats, inasmuch as only a very small quantity—about forty mats—have been sold in Sydney, other than to two firms, viz., Messrs. Briscoe, Drysdale, & Co., and Messrs. Mason Bros., who are not customers of Messrs. Armstrong and Son. (*See* papers attached.)

I beg to state the sale of "Diamond Back" mats has materially fallen off since the price has been increased. The difficulty in effecting sales of mats made either by free or prison labour, at the excessively high price of 9d. per lb. as against an equally good article imported at 4½d. and 3½d. per lb., needs no comment, and in proof of which I have obtained for your inspection samples of these imported mats at prices quoted.

I may state that I have endeavoured to dispose of prison-made "Diamond Back" mats in the adjacent colonies of Queensland and New Zealand. I quoted them at 6d. per lb. The offer was declined as they could be imported from England at a lower rate.

There are at present 160 prisoners employed in the several gaols at the mat and matting industry, forty-eight of whom are on the "Centennial" mat, and for whom other employment will have to be provided in the event of either of these industries being discontinued.

I would respectfully suggest that Messrs. Armstrong and Son be requested to furnish the name of the firms who have ceased to purchase from them in consequence of the prison manufacture. At present it appears to me a statement made without the support of facts.

I have, &c.,

W. B. McLAREN,
Superintendent Prison Industries.

No. 10.

W. S. Buzacott, Esq., to The Under Secretary of Justice.

Dear Sir,

Sydney, 17 May, 1888.

I shall be obliged if you will kindly inform me when it will be convenient for the Minister of Justice to receive a deputation on the subject of the injurious effect on the local mat-making industry, of the action in regard to circulars, and prices taken by the authorities of Her Majesty's Gaols.

I remain, &c.,

WALTER S. BUZACOTT.

Submitted.—A.C.F., 17/5/88. I will see deputation Wednesday next at 10 o'clock. The Comptroller-General of Prisons to be invited to be present.—W.C., 18/5/88.

No. 11.

The Under Secretary of Justice to W. S. Buzacott, Esq.

Sir,

Department of Justice, Sydney, 18 May, 1888.

Referring to your letter of the 17th instant, I have the honor to inform you that the Minister of Justice will be happy to receive the deputation with regard to the local mat-making industry, as affected by the prices charged by the Prison authorities, on Wednesday next, the 23rd instant, at 10 o'clock in the forenoon.

I have, &c.,

ARCH. C. FRASER,

Under Secretary.

No. 12.

The Under Secretary of Justice to The Comptroller-General of Prisons.

Sir,

Department of Justice, Sydney, 18 May, 1888.

The Minister of Justice having intimated his willingness to receive a deputation with regard to the local mat-making industry as affected by the prices charged by the Prison authorities, on Wednesday next at 10 o'clock a.m., I have the honor, by direction of Mr. Clarke, to invite you to be present on that occasion.

I have, &c.,

ARCH. C. FRASER,

Under Secretary.

No. 13.

J. Armstrong and Son to The Minister of Justice.

Sir,

Riley-street, Sydney, 22 May, 1888.

We beg respectfully to call your attention to the enclosed price list of coir mats issued by the authorities of Her Majesty's Gaol, Parramatta, which we submit is an infringement of your decision, communicated to us on the 10th October, 1887.

That decision fixed the price of mats (Diamond Back) made in Her Majesty's Gaols at 9d. per lb., less 10 per cent.

We now produce for your information a sample mat offered at 4½d. per lb., in which you will observe that the style of the back is altered and the quality slightly reduced, yet the quality and make are such

such as to command the market to the exclusion of the mats which were the subject of your consideration and decision in October last. We may add that instead of being termed a "Diamond Back" mat, the new sample is termed a "Centennial" mat.

The whole alteration can only be regarded as a means of securing the whole of the local trade to Her Majesty's Gaols, and seriously interfering, if not entirely destroying, the local industry carried on by ourselves for many years.

We sincerely trust you will kindly give this matter your favourable consideration.

We are, &c.,
JOHN ARMSTRONG AND SON,
(Per F.A.B.)

[Enclosure]

Parramatta Gaol—Price List for 1888—Centennial Mats.

No.	Width.		Length.		Square Feet.		Average Price.		
	ft.	in.	ft.	in.	ft.	in.	£	s.	d.
1	2	0	1	2	2	4	0	1	2
2	2	3	1	4	3	0	0	1	6
3	2	6	1	6	3	9	0	1	10
4	2	9	1	8	4	7	0	2	3
5	3	0	1	10	5	6	0	2	9
6	3	3	2	0	6	6	0	3	3
7	3	6	2	2	7	7	0	3	9

Price 4½d. per lb. No discount allowed on the above prices.
Housemaids' Kneeling Mats, 18s. per dozen.

No. 14.

Minute of The Minister of Justice.

Department of Justice, Sydney, 23 May, 1888.

In the course of conversation with a deputation, *re* prison mat-making, it was stated that the Department of Prisons sold mats to wholesale firms in this city, and that the Department of Works and Railways bought the prison-made mats from these firms.

Inform Minister of Works in terms of above minute, and add that I can scarcely credit such is the case.

W.C., 23/5/88.

No. 15.

The Under Secretary of Justice to The Under Secretary for Public Works.

Sir,

Department of Justice, Sydney, 23 May, 1888.

In the course of conversation with a deputation that recently waited on the Minister of Justice respecting prison mat-making, it was stated that the Department of Prisons sold mats to wholesale firms in the city, and that the Departments of Works and Railways bought the prison-made mats from those firms,—I am directed by the Minister of Justice to request that you will invite the Secretary for Public Works to have the goodness to state if there is any truth in this statement, as Mr. Clarke can scarcely credit that such is the case.

I have, &c.

ARCH. C. FRASER,
Under Secretary.

No. 16.

The Comptroller-General of Prisons to The Under Secretary of Justice.

2 June, 1888.

THE accompanying papers are, by direction of the Minister of Justice, resubmitted in connection with an interview of a deputation regarding the protest of Messrs. Armstrong and Son against the price of a mat manufactured at Parramatta, and known as the "Centennial" mat, and which was alleged to prejudice the trade of Messrs. Armstrong in a mat known as the "Diamond Back."

It was explained by myself that the authority given by me for the manufacture of the "Centennial" mat, was for a mat, the approved sample of which was produced, and which was altogether of an inferior description to the "Diamond Back," and therefore not calculated to interfere with the sale of the last-named.

A mat was produced on the part of Messrs. Armstrong sold as a "Centennial," but of distinctly superior quality, and calculated to interfere with the sale of Messrs. Armstrong's mats.

It was pointed out by myself that my instructions must have been departed from in making this superior mat, and by subsequent inquiry I have found such to have been the case to a considerable extent.

As I undertook at the interview, I have taken strict order that the Parramatta manufacture be limited to the approved pattern of the inferior mat.

This it was understood would meet the objections, so far as they could be considered in any way reasonable, of Messrs. Armstrong.

By desire of and for the information of the Minister of Justice, I forward a further report from the Superintendent of Prison Industries, showing the profit on the material for the Parramatta manufacture, which gives employment to some forty prisoners. The charges against the profit comprehend £2 a ton for railway freight. This can scarcely be considered a real subtraction.

HAROLD MACLEAN,
Comptroller-General.

I have under consideration a question, quite irrespectively of Messrs. Armstrong's objections, of raising the price of the "Centennial" mat.—H.M.

[Enclosures.]

[Enclosures.]

Sir,

Sydney Gaol, 25 May, 1888.

I beg to report, for information of the Comptroller-General of Prisons, re cost of coir yarn, freight, &c., being the material from which the mat called the "Centennial" is made.

Coir yarn delivered at Darlinghurst, £24 7s. 6d. per ton, freight to Parramatta, which is paid by the Stores Department, I find upon inquiry to be £2 per ton, making cost of yarn delivered at Parramatta Gaol, £26 7s. 6d. These mats are sold at 4½d. per lb., or £42 per ton, leaving a labour profit on local sales of £15 12s. 6d. The delivery of these mats in Sydney entails a further cost of £2, reducing the labour profit on Sydney sales to £13 12s. 6d. per ton.

I may again call your attention to the object of this industry, viz., to furnish employment to short-sentenced prisoners, who would otherwise be comparatively idle.

I have, &c.,

W. B. McLAREN,
Superintendent, Prison Industries.

CIRCULAR.

Sydney Gaol, 3 September, 1887.

ENCLOSED please find new price-list for stock mats, which we propose to sell by measurement, in lieu of weight, as at present.

W. B. McLAREN,
Superintendent of Prison Industries.

Messrs. Albery & Co.

Sale of Diamond Back Mats.

1886, from 1st January to 30th April.—515, 4,362 lb., 9d. per lb. 1887.—440 mats, 2,943 lb., 8d. per lb. 1888.—246 mats, 1,727 lb., 9d. per lb. Centennial mats, 30th April, 1888.—MacLean, Rushcutters Bay, 103 lb.; Israel & Co., 89 lb.; R. H. Smith 53 lb.—245 lb. (or 80 mats).

Mr. Buzacott stated the manufacture of Messrs. Armstrong and Son's D.B. mats had virtually ceased. Mats are now on the water at less than those quoted on sample mats.

Sample mat, size 7, 16 lb., 6s. 2d.; Darlinghurst price net, 10s. 10d. Sample, size 4, 9½ lb., 2s. 8d.; Darlinghurst price net, 6s. 5d. Sample size 3, 8 lb., 2s. 2d.; Darlinghurst price net, 5s. 5d.

Dear Sir,

263 to 269, Kent-street, Sydney, 6 March, 1888.

Re mats ordered 2nd instant, please cancel order, as we cannot pay 9d. and sell at 7d. We are surprised that you should be dictated to by Mr. Armstrong, whoever he may be. We must decline to have anything to do with mats at 4½d., fearing that some day he may order you to make the price 7d. We shall have to do as others of your customers will doubtless have to, that is, import an article to sell at 7d., as we have no intention of selling at a loss, even to please Mr. Armstrong.

The Gaoler of Parramatta Gaol.

Yours respectfully,

MASON BROS. (LIMITED)
(Per P. N.)

Forwarded to the Comptroller-General.—J.L., Deputy-Governor, Sydney Gaol, 25/5/88. Submitted.—A.C.F., 5/6/88.

Mr. W. S. Buzacott, of Market-street, to be informed as succinctly as possible, and in general terms, of the tenor of this report, which the Minister of Justice trusts will lead to an absence of any further complaint.—W.C., 16/6/88.

No. 17.

The Under Secretary of Justice to W. S. Buzacott, Esq.

Sir,

Department of Justice, Sydney, 18 June, 1888.

With reference to a deputation introduced by you to the Minister of Justice, on the 23rd ultimo, regarding the protest made by Messrs. Armstrong and Sons against the selling price of a mat manufactured at Parramatta Gaol, known as the "Centennial" mat, and which was alleged to prejudice the trade of Messrs. Armstrong and Sons in a mat known as the "Diamond Back," I am directed by the Minister of Justice to inform you that upon inquiry it has been ascertained that the authority given by the Comptroller-General of Prisons for the manufacture of the "Centennial" mat was for a mat which was altogether of an inferior description to the "Diamond Back," and, therefore, not calculated to interfere with the sale of that mat.

I am to add that strict orders had been given by the Comptroller-General of Prisons, that mats manufactured in Parramatta Gaol be limited to the approved pattern of the inferior mat before referred to, and that Mr. Clarke trusts that such action will lead to an absence of any further complaint on the part of Messrs. Armstrong and Sons.

I have, &c.,

ARCH. C. FRASER,
Under Secretary.

No. 18.

The Secretary, Chamber of Manufactures, to The Minister of Justice.

Dear Sir,

Sydney, 27 June, 1888.

I have the honor, by direction of the members of this Chamber, to ask when it will be convenient for you to receive a deputation therefrom on the subject of "prison labour against local industry." Awaiting your reply,

I have, &c.,

D. CHADWICK,
Secretary.

Thursday next, at 12 o'clock.—W.C.

No. 19.

The Under Secretary of Justice to The Secretary to the Chamber of Manufactures.

Sir,

Department of Justice, Sydney, 29 June, 1888.

Referring to your letter of the 27th instant, I am directed to inform you that the Minister of Justice will receive a deputation from the Chamber of Manufactures of New South Wales on the subject of "prison labour against local industry" on Thursday next at 12 o'clock.

I have, &c.,

ARCH. C. FRASER,
Under Secretary.

No. 20.

No. 20.

The Under Secretary of Justice to The Comptroller-General of Prisons.

Sir,
 Department of Justice, Sydney, 2 July, 1888.
 The Minister of Justice having arranged to receive a deputation from the Chamber of Manufactures of New South Wales on the subject of "prison labour against local industry" on Thursday next, the 5th instant, at 12 o'clock, I have the honor, by direction of Mr. Clarke, to invite you to be present on that occasion.

I have, &c.,
 ARCH. C. FRASER,
 Under Secretary.

No. 21.

J. Armstrong and Son to The Minister of Justice.

Honorable Sir,
 Mat Manufactory, 114, Riley-street, June, 1888.
 We beg to state that after being established as mat and matting manufacturers for eight years, in May, 1887, Parramatta and Darlinghurst Gaols reduced the selling price of brush mats 25 per cent. below our prices.

After several interviews with the Comptroller-General of Prisons, on 21st November he agreed to go back to the prices charged in 1884.

We found shortly after this agreement that the Parramatta Gaol brought out a brush mat equal in material to our best and second quality brush mats at 9d. per lb., calling the same a "Centennial Mat," and selling it at half the price agreed upon, viz., 4½d. per lb.

We submit that this is underselling us in the market. Being sold at so low a price, it is purchased in preference to our second quality brush mat, and made of the same quality of material and with as little yarn as possible worked in it, with a view of cheapening the sale against us. The Comptroller-General has also reduced the selling price of sennett mats against us.

This system of competition, we humbly submit, is an injustice against us as citizens and manufacturers, and we trust that you will be pleased to give instructions that this competition against local industry be at once discontinued, and that every description of mats and matting made in the Government gaols be sold at a not less price than the Government price list published for 1884.

We trust that the Government will ultimately confine the manufacture of mats and matting to supplying Government establishments only.

We have, &c.,
 J. ARMSTRONG AND SON.

Mr. Armstrong to send list of his trade prices, and when received resubmit papers.—W.C., 5/7/88. See list herewith (No. 88-8,052) received to-day, 6/7/88.

No. 22.

D. Chadwick, Esq., to The Under Secretary of Justice.

The Chamber of Manufactures of New South Wales,
 121, Bathurst-street, 5 July, 1888.
 Dear Sir,
 I beg to inform you that, in accordance with mine of the 27th instant and yours of the 29th June, the deputation from this Chamber will wait upon the Minister of Justice at 12 o'clock this day.

I have, &c.,
 D. CHADWICK,
 Secretary.

Submitted.—T.E.M.N., 5/7/88.

No. 23.

J. Armstrong and Son to The Minister of Justice.

Honorable Sir,
 Mat Manufacturers, 114 Riley-street, 5 July, 1888.
 We have to thank you for your decision to give instructions to the Gaol officials to take immediate steps to stop underselling us in the market, and further, that in future the Gaol goods shall not be sold at a less price to the trade than our present price list, which we herewith enclose, and beg to state that the same is also the Darlinghurst Gaol price list for the year 1879, the year in which we commenced our present establishment, and we trust, as soon as possible, you will give effect to the above decision, and kindly notify the same to us.

We have, &c.,
 J. ARMSTRONG AND SON.

Submitted.—T.E.M.N., 6/7/88. Comptroller-General of Prisons, these papers now submitted for perusal, and any further report to guide Minister in coming to a final decision in this matter.—W.C., 9/7/88. B.C., A.C.F.

No. 24.

The Comptroller-General of Prisons to The Under Secretary of Justice.

3 August, 1888.
 THE outcome of the deputation was a promise by the Minister of Justice that the Prisons Department would not undersell Messrs. Armstrong in the market.

It was explained by myself that the inferior description of mat made at Parramatta and some country gaols, and sold at a lesser rate than Messrs. Armstrong's price, was not in the same category as their mats, and their price could not be regarded as underselling.

On

On the other hand, Messrs. Armstrong contended that the purchase by the public of these inferior low-priced mats, amounted to under-selling, inasmuch as people bought the inferior mats to the prejudice of his sale of the superior.

If, in the opinion of the Minister, his promise applied to the inferior mat in the position above stated, there is no alternative but to cease their manufacture, now employing some fifty men, as they would not be salcable at a higher rate.

HAROLD MACLEAN,
Comptroller-General of Prisons.

Submitted, with reference to the Minister's minute of the 9th ultimo.—A.C.F., 6/8/88.

No. 25.

J. Armstrong and Son to The Minister of Justice.

Dear Sir, Wholesale Mat Manufactory, 114, Riley-street, 6 August, 1888.

We beg most respectfully to ask if instructions have been given to the Comptroller-General of Prisons and the Gaol authorities, not to sell mats of any description at a less price than the published prison list for the year 1879, the same as our current price list, and which, at your request, we forwarded to you a copy through the Chamber of Manufacturers; and believing that you wish to do us justice, we trust that you will see that this question of under-selling us by prison labour is finally settled, as we have no wish to trouble you again, or to bring the injustice of the case towards us under the notice of the public.

Waiting early reply,

We have, &c.,
J. ARMSTRONG AND SON.

Submitted, in connection with previous papers under consideration.—A.C.F., 8/8/88.

Messrs. Armstrong to be informed, and the Comptroller-General of Prisons advised, that mats of the same quality as manufactured by Armstrong and Son are not to be sold at a less price than that obtained by that firm, but if mats of an inferior quality to those made by Armstrong and Son are made in the gaol the price must be regulated accordingly.—W.C., 18/8/88.

No. 26.

The Under Secretary of Justice to J. Armstrong and Son.

Gentlemen, Department of Justice, Sydney, 23 August, 1888.

Referring to your letter of the 6th instant, inquiring whether instructions had been given to the Comptroller-General of Prisons not to sell mats at less prices than those specified in the published prison list of 1879,—I am directed by the Minister of Justice to inform you that the Comptroller-General of Prisons has been advised that mats of the same quality as those manufactured by you are not to be sold at a less price than that obtained by your firm; but if mats of an inferior quality to those manufactured by you are made in the gaol, the prices thereof must be regulated accordingly.

I have, &c.,
ARCH. C. FRASER,
Under Secretary.

No. 27.

The Under Secretary of Justice to The Comptroller-General of Prisons.

Sir, Department of Justice, Sydney, 23 August, 1888.

With reference to your blank cover of the 3rd instant and previous correspondence regarding the manufacture of mats in gaol, I am directed by the Minister of Justice to inform you that he has decided that mats of the same quality as those made by Messrs. Armstrong and Son are not to be sold at a less price than that obtained by their firm; but if mats of an inferior quality to those manufactured by Messrs. Armstrong and Son are made in gaol, the prices thereof must be regulated accordingly, of which decision Messrs. Armstrong and Son have been apprised.

I have, &c.,
ARCH. C. FRASER,
Under Secretary.

No. 28.

J. Armstrong and Son to The Minister of Justice.

Dear Sir, Wholesale Mat Manufactory, 114, Riley-street, Sydney, 27 August, 1888.

Referring to your letter of the 23rd instant (No. 88-9,123), we beg most respectfully to state that the gaol authorities are still selling brush mats equal to our second quality brush at 4½d. per lb., for which our selling price is 9d. per lb. This has been our contention for the last twelve months, and at our waiting upon you with a deputation from the Chamber of Manufacturers, you kindly promised that in future goods should not be sold below our price list, yet, in the face of this decision, we received from one of our customers a price list obtained last week from Parramatta Gaol, offering brush mats, by the name of "Centennial" mats, as stated above, and 50 per cent. below us; also offering Sennett mats 20 per cent. below us.

We beg to state that if this system is further persisted in by the Government we will be compelled, in justice to ourselves and manufacturers in general, to submit our case to the public and the Legislative Assembly. The simple question is this: Why should mats that have been made of the same material and the same amount of workmanship that have realised to the State 9d. per lb. for the last twenty-five years be now sold at a reduced price, viz., 4½d. per lb., to the injury of the manufacturer, the free workman,

and a loss to the State under the assumed name of "Centennial mats," they being equal to our second quality, and made of the same material, thereby stopping the sale of our goods, and, as before stated, underselling us in the market? We beg also to state that the Comptroller-General of Prisons has never done this under any former Government, and we trust that the present Government and yourself will at once stop this injustice as promised by you to the Chamber of Manufacturers.

As this case has been before you for upwards of twelve months, we will thank you for an immediate reply.

We have, &c.,

J. ARMSTRONG AND SON.

Submitted with reference to the Minister's minute of 18th August, 1888, herewith.—A.C.F.
28/8/88. Comptroller-General of Prisons.—W.C. B.C., 29/8/88, A.C.F.

No. 29.

The Comptroller-General of Prisons to The Under Secretary of Justice.

14 September, 1888.

In the renewed complaint of Messrs. Armstrong and Sons it is stated that this Department are selling mats "equal to our second quality brush at 4½d. per lb., for which our selling price is 9d.," and this is the gist of their present representation.

It will be in the recollection of the Minister of Justice that at the interviews with himself the whole question turned upon whether the prisons are selling mats of the same quality as those of Messrs. Armstrong at a reduced rate, thus under-selling; and the mats in evidence were what were termed Messrs. Armstrong's "Diamond Back" and the Parramatta Prison "Centennial."

What Messrs. Armstrong, in their present communication, call their "brush" mat, at 9d. is the "Diamond Back."

The "Centennial" brush mat, it was contended for the prison, was of a distinctly inferior quality. It is that mentioned as being sold at 4½d.

The difference between the two descriptions of mats is thus reported by the Superintendent of Prison Industries:—"Messrs. Armstrong's "Diamond Back" is close-woven, well finished, and weighs about 1½ lb. to the square foot. The "Centennial" is roughly made, and weighs about 1¼ lb. to the square foot."

The decision of the Minister, conveyed in the Under Secretary's letter of the 23rd August, is that "mats of an inferior quality to those manufactured by Messrs. Armstrong" are to be sold at prices regulated by that inferiority.

The "Centennial" mats come within that decision, and hence their manufacture continues.

I have arrived at the conclusion that the charge of 4½d. per lb. for the "Centennial" is too low, and am willing to increase it to 6d.

HAROLD MACLEAN,

Comptroller-General.

Submitted with reference to Minister's minute of 29th ultimo.—A.C.F., 17/9/88.

Messrs. Armstrong and Son to be informed that it is reported to the Minister of Justice that the Gaol authorities are not disposing of mats at the rate of 4½d. per lb. equal to the mat which they are offering to the public at 9d. per lb. The mat sold at 4½d. per lb. is roughly made, and weighs about 1¼ lb. to the square foot, whilst their mat is closely woven, well finished, and weighs about 1½ lb. to the square foot. It has, however, been determined that the price of the gaol mat should be increased to 6d. per lb.—W.C., 19/9/88.

No. 30.

The Under Secretary of Justice to Messrs. J. Armstrong and Son.

Gentlemen,

Department of Justice, Sydney, 22 September, 1888.

Referring to your letter of the 27th ultimo, further respecting the prices charged for mats manufactured in gaols, I am directed by the Minister of Justice to inform you that it has been reported to him that the gaol authorities are not disposing of mats at the rate of 4½d. per lb. equal to the mat which you are offering to the public at 9d. per lb. The mat sold at 4½d. per lb. is roughly made, and weighs about 1¼ lb. to the square foot, whilst your mat is closely woven, well finished, and weighs about 1½ lb. to the square foot.

I am desired to add, however, that it has been determined that the price of the gaol mat should be increased to 6d. per lb.

I have, &c.,

ARCH. C. FRASER,

Under Secretary.

No. 31.

Messrs. J. Armstrong and Son to The Minister of Justice.

Dear Sir,

Wholesale Mat Manufactory, 114, Riley-street, Sydney, 25 September, 1888.

We have to acknowledge your letter of the 22nd instant (No. 88-10,463), and, in reply, beg respectfully to state that the matter is still unsatisfactory, and the explanation is only evading the question, with a view to the crushing out of our industry in order that Her Majesty's gaols may control the whole of the local market.

We contend that the price per lb. should not be lessened, and that the difference in weight should be sufficient reduction for the inferior mats. It is not a question so much of difference in workmanship as in weight of material.

Please notice the following definition of your own statement of respective weights of the mats manufactured in Her Majesty's gaols and those manufactured by ourselves:—

A mat containing 8 square feet (Her Majesty's gaol) weighs, as per your statement, 10 lb., at 9d. per lb. would be sold at 7s. 6d., less 10 per cent.

A.

A mat containing 8 square feet (J. Armstrong and Son) weighs, as per your statement, 14 lb., at 9d. per lb., would be sold at 10s. 6d., less 10 per cent.

Further, a mat containing 8 square feet (Her Majesty's gaols) weighs 10 lb.; if sold at 4½d. would be sold at 3s. 9d., and if sold at 6d. would be sold at 5s.

It is evident from these figures that our business is to be ruined by the extraordinary competition which could only be carried on by prison labour, and which no free labour can grapple with.

We see clearly that we shall have to appeal to the public of New South Wales in order that we may be able to secure an honest livelihood for ourselves, families, and employees.

We have, &c.,

J. ARMSTRONG AND SON.

[Enclosure.]

Her Majesty's Gaol, Parramatta—Mat Department.

Price List, 1888.

Diamond Back mats	9d. per lb. ; average weight per square foot, 1¼ lb.
Superfine frame mats.....	1s. ,, ,, ,, 2 ,,
Superfine coloured border mats.....	1s. 2d. per lb. ; ,, ,, 2 ,,
Centennial mats (brush).....	4½d. ,, ,, 1½ ,,
Sennett mats	10d. per square foot.
Housemaid kneelers	1s. 6d. each.

Lowest quantity allowed to be sold, ½ cwt.

		Stock Sizes.					
No.	ft. in.	ft. in.	ft. in.	ft. in.	No.	ft. in.	ft. in.
1.....	2 0 × 1 2				6.....	3 3 × 2 0	
2.....	2 3 × 1 4				7.....	3 6 × 2 2	
3.....	2 6 × 1 6				8.....	3 9 × 2 4	
4.....	2 9 × 1 8				9.....	4 0 × 2 6	
5.....	3 0 × 1 10						

Mats made to any shape or size. Designs, names, numbers, &c., worked in shaded letters, 1s. each, or plain letters, 9d. each.

Submitted.—A.C.F., 28/9/88. Comptroller-General of Prisons submitted for report.—W.C., B.C., 29/9/88. A.C.F.

I can see nothing herein to call for any addition to my report of the 14th ultimo, which exhausts the controversy. Instructions have been given to increase the price of the "Centennial" mat to 6d. a lb.—H.M., B.C., 4/10/88. The Under Secretary of Justice.

Messrs. Armstrong and Son might be informed, in terms of the Comptroller-General's minute. Submitted.—A.C.F., 5/10/88. Yes.—W.C., 6/10/88.

No. 32.

The Under Secretary of Justice to Messrs. J. Armstrong and Son.

Gentlemen,

Department of Justice, Sydney, 9 October, 1888.

Referring to your letter of the 25th ultimo, further respecting the prices charged for mats manufactured in gaols, I am directed by the Minister of Justice to inform you that he can see nothing to call for any addition to his decision, as conveyed to you in my letter of the 22nd ultimo upon the subject.

I am desired to add that instructions have been given to increase the price of the "Centennial" mat to 6 per lb.

I have, &c.,

ARCH. C. FRASER,

Under Secretary.

No. 33.

F. Abigail, Esq., M.P., to The Minister of Justice.

Dear Sir,

589, George-street, 11 September, 1889.

I have the honor to hand you a letter from Messrs. Armstrong and Son, Mat Manufacturers, of 114, Riley-street, Sydney, from which you will see they complain of the unfair way the work of mat making and selling is carried on in Darlinghurst Gaol. If the statements made by these gentlemen are correct, then a great wrong is being done to both them and the public in the matter. I know the difficulties of the question of prison labour and the fact that prisoners must be employed; but surely it will not be contended for one moment that it should be brought into open competition with the free labour of tradesmen, and the general public pay the loss. I ask your earnest attention to this matter.

I am, &c.,

F. ABIGAIL.

[Enclosure.]

Dear Sir,

Mat Manufacturers, 114, Riley-street, Sydney, September, 1889.

We beg most respectfully to state that eleven years ago we started our trade at the same price as the Darlinghurst Gaol were selling the prison-made goods. Since then the Gaol authorities have reduced the price of goods, and that, at the present time, in many instances this loss will amount to £2 10s. per month per man, and the reduction in most all prisoners' earnings will average two pounds (£2) per month, thus giving, if 100 prisoners are employed at mat making, a loss to the revenue of £200 per month. This requires no evidence, but can be easily proved by comparing the former with the present price list; in fact the goods are being given away at almost any price, and we contend that no individual should be permitted by the Government to act thus, and crush out free labour at a loss to the public of more than £2,000 per annum. We are sorry to say that up to the present time we have found it comparatively useless to point out to the Comptroller-General of Prisons the injustice to us and the loss to the public account in the course he is pursuing.

Yours, &c.,

J. ARMSTRONG AND SON.

The Comptroller-General of Prisons for favour of any further remarks he may desire to make on this subject.—A.C.F., B.C., 13/9/89.

No. 34.

No. 34.

The Under Secretary of Justice to F. Abigail, Esq., M.P.

Sir,

Department of Justice, Sydney, 13 September, 1889.

I have the honor to acknowledge the receipt of your letter of the 11th instant, forwarding a communication from Messrs. Armstrong and Son, complaining of the competition in the mat-making industry at Darlinghurst Gaol.

I have, &c.,

ARCH. C. FRASER,

Under Secretary.

No. 35.

Messrs. J. Armstrong and Son to The Minister of Justice.

Hon. Sir, Wholesale Mat Manufactory, 114, Riley-street, Sydney, 16 September, 1889.

We beg most respectfully to state that, eleven years ago, we started in Sydney as mat and matting manufacturers at the same prices as the Darlinghurst Gaol was selling prison-made goods; which, since the last two years, have been greatly reduced, and at the present time, in many instances, the loss will amount to 50s. per month, and the reduction in most prisoner's earnings will average two pounds (£2) per month; thus giving, if 100 prisoners are employed at mat-making, a loss of two hundred pounds (£200) per month. This requires no evidence, and can be easily proved by comparing the former with the present price-list; in fact, the goods are almost given away at any price, and we contend that the Government should not allow any gaol officials to act thus and crush out free labour at a loss to the public of more than two thousand pounds (£2,000) per year. Although we have frequently brought this under the notice of the Comptroller of Prisons, and a deputation from the Chamber of Manufacturers waited upon the late Minister of Justice (the Hon. W. Clarke), who promised that the gaol selling price in future should be the same as our selling price-list, yet immediately after the deputation left pressure was brought to bear to alter his decision. We are sorry to say that up to the present we have found it useless to point the Comptroller of Prisons to this injustice to us, and also to the public, in the course he is pursuing.

We would also, as a positive proof of our contention to loss in prisoners' earnings, call your attention to the fact that the Comptroller, in his Report for 1888, admits a loss in prisoners' earnings of nearly four thousand pounds (£4,000) per year. This, we contend, is caused by lowering the price of prison-made goods, thereby reducing the earnings to meet the loss. If it is permitted to go on, we would respectfully ask how is it possible for any local industry to stand against such injustice? We believe that sufficient employment for prisoners can be found by supplying public works alone, and so prevent the underselling of free labour if each trade were more equalised, and not so many employed at this one trade. We also enclose two* copies of price-lists from Parramatta Gaol showing a reduction in some instances of 50 per cent. in frame mats since last year.

Trusting that you will see that no goods are permitted to be sold less than the former selling price,

We have, &c.,

J. ARMSTRONG AND SON.

[Enclosure.]

Gentlemen,

In answer to your favour of the 12th instant, I beg to state that the prices of our Diamond Brush Frame mats are as under:—

Size No.	Dimensions	Rate	s.	d.
1	2 feet 4 inches	at 9d. per foot	1	9
2	3 " 0 "	"	2	3
3	3 " 9 "	"	2	8
4	4 " 7 "	"	3	5
5	5 " 6 "	"	4	1½
6	6 " 6 "	"	4	10½
7	7 " 7 "	"	5	8

All larger sizes of the same class of mats are at the rate of 7d. per lb. Fancy coloured bordered mats and lettered mats at 1s. 1d. per lb. and 1s. per letter.

Yours, &c.,

THOMAS BARNETT,

Gaoler.

The Comptroller-General to see me at 10:30 a.m. to-morrow.—A J.G., 16/9/89. B.C., 16/9/89.—T.E.M.N. (for U.S.) Writer to be requested to furnish his price-list of mats of like quality to those made in the gaols.—A.J.G., 17/9/89.

No. 36.

The Under Secretary of Justice to The Comptroller-General of Prisons.

Dear Sir,

Department of Justice, Sydney, 16 September, 1889.

The Minister of Justice will be obliged by your calling to see him at half-past 10 o'clock to-morrow respecting a complaint made by Messrs. Armstrong and Sons, matmakers.

Yours truly,

ARCH. C. FRASER.

The Deputy-Comptroller called this morning, and stated that Mr. Maclean was ill, and could not see the Minister to-day. The Deputy-Comptroller suggested that nothing should be done until Mr. Maclean was able to see the Minister, as the former knows all the facts of the case.—A.C.F., 17/9/89.

13

No. 37.

The Under Secretary of Justice to J. Armstrong and Son.

Gentlemen,

Department of Justice, 17 September, 1889.

Referring to your letter of the 16th instant, complaining of the reduction made in prices for mats manufactured in Sydney and Parramatta Gaols, I am directed by the Minister of Justice to request you to furnish him with your price list of mats of like quality to those made in the Gaols.

I have, &c.,

ARCH. C. FRASER,
Under Secretary.

No. 38.

J. Armstrong and Son to The Minister of Justice.

Hon. Sir,

114, Riley-street, Sydney, 20 September, 1889.

We beg to forward to you, at your request, our price list of mats, the same as the Hon. W. Clarke promised the deputation from the Chamber of Manufactures that the Government prisons should adopt. It is the former selling price of prison-made goods for twenty-six years, but during the last two or three years the prison authorities have gradually reduced the price of their goods. As stated in our former communication, in the first place they brought out a brush mat, calling the same a "Centennial" brush mat, which is being sold at sixpence (6d.) per lb., and our brush mat, please see list, is 9d. and 10d. per lb. Now you will please to perceive that this is considerably under our price. The gaol authorities say that the mat does not look so well as our brush mat, but the overseer knows full well that he can get any prisoner to make the same mat equal to ours, in the same time, by putting in more material, and, by so doing, undersell us in the market. You will see that the gaol price list for Sennett mats to order is ten pence (10d.) per foot, while ours is 1s. 6d. per lb. (nearly 50 per cent. below us), and we also call your attention to the superfine frame mats, at 1s. per foot, which cannot be made less than 2 lb. to the foot. Here is another reduction of 50 per cent. below our list. Housemaids' kneelers and spittoon mats are also sold 50 per cent. less than us. As per matting, we have been compelled to leave out of our list, the prison reduction in some instances being from 50s. to 60s. per prisoner per month.

We beg most respectfully to state that it is difficult for any tradesman to carry on business with active prison competition against him, at any time, but it becomes ruinous when such unjust means are resorted to, as to lower the price prison-made goods, to crush out free labour, at the expense to the public of over two thousand pounds (£2,000) loss per year; we beg most respectfully to add that, after an experience as overseer in Darlinghurst Gaol for ten years, if any goods are allowed to be sold by the foot or measure, instead of by weight, a loss will be perpetuated at the end of each year. We would also state that the Comptroller of Prisons pointed to the superiority of our mats over the prison-made goods; we beg to state that if the prisoners are properly instructed, there is no need for any inferior work, even by learners, as the time of a prisoner while learning is not considerable, and he can take time during a month or six weeks to perfect himself as a workman.

Trusting you will not think the above is sent in a dictatorial spirit, but only that you may have the plain facts put before you, that you may see that justice is done to us, and the old price list is issued to the trade, and goods not permitted to be sold at a less price.

We have, &c.,

J. ARMSTRONG AND SON.

I am still awaiting an interview with the Comptroller-General on this subject. If Messrs. Armstrongs' representations are correct they have very grave cause for complaint.—A.J.G., 21/9/89. The Comptroller-General of Prisons, B.C., 23/9/89.—T.E.M.N., for U.S.

No. 39.

The Comptroller-General of Prisons to The Under Secretary of Justice.

2 October, 1889.

In connection with my interview upon this subject with the Minister of Justice, I enclose a report from the Superintendent of Prison Industries.

At the time of the arrangement made in the administration of the late Minister the question of underselling Messrs. Armstrong and Son was dealt with solely in reference to the "Diamond Back," "Super Frame," and "Centennial" mats, of which alone at that time complaints were made.

The "Diamond Back" and "Super Frame" were raised in price to Messrs. Armstrongs' standard, and have since been maintained at that price.

The "Centennial" not being a mat made by Messrs. Armstrong, and, therefore, having no standard price, was raised 25 per cent., which almost stopped the sale.

Messrs. Armstrong are in error in the prison list they submitted, wherever it was obtained.

The price for "Super Frame" was given at per foot, of which they complained, instead of at per pound, at which they are sold. This makes a difference of 50 per cent., which they complain of in error.

The list supplied by Messrs. Armstrong is full of inaccuracies, the extensions being almost all erroneous.

The "Sennett" mats to which Messrs. Armstrong refer, formed no part of the arrangement made with Messrs. Armstrong. It seems that the prison pattern is sold under Messrs. Armstrongs' rates. The trade is quite immaterial, being only some £29 a year.

The "Spittoon" mats are sold under Messrs. Armstrongs' rates; the trade is quite immaterial, only £16 a year. The "Housemaid Kneelers" the Superintendent reports to be a different class of mat to Messrs. Armstrongs', and seems to be never on their list.

I think that it will be seen that Messrs. Armstrong have no justification for their complaints, and have had very large concessions at the cost of the Department.

If the Minister thinks fit to direct that any class whatever of mats or matting must be regulated in price entirely by Messrs. Armstrongs' standard, it will have to be done. Their

Their chief complaints refer to Parramatta. I propose to discontinue the mat industry there, which has been, in effect, stifled by the concessions made.

The Superintendent's report disposes of the assertion of Messrs. Armstrong as to loss on the prison trade.

Mat-making forms a large element in prison manufactures in all parts of the world.

HAROLD MACLEAN,
C.-G.P., 2/10/89.

[Enclosures.]

Sir,

Sydney Gaol, 26 September, 1889.

I do myself the honor to report *re* allegations of Messrs. Armstrong and Son. In answer to the statement that prisoners employed mat-making are worked at a loss of about £2,000 per annum, I will simply compare the earnings under control of Messrs. Armstrong and under present management:—

Half-year ending 30th June, 1876 : Seventy-nine prisoners employed ; net earnings, £590 16s. 3d.

Half-year ending 30th June, 1889 : Seventy-eight prisoners employed ; net earnings, £1,486.

"Diamond Back" and "Super Frame" mats, both at Parramatta and Darlinghurst, same price as Messrs. Armstrong and Son.

The "Centennial," a different class mat, sold at the advanced price of 6d. per lb. ; trade almost nil.

Matting does not appear on Messrs. Armstrong and Son's price list, either past or present.

"Housemaids' Kncelers" are also a recent written addition to their price list. No previous complaint about our price.

Spittoon mats and Sennett mats sold at a less rate, but very little trade done.

The price-list submitted by Messrs. Armstrong and Son, as a copy of one issued from Parramatta, is full of errors and not to be relied on.

I have, &c.,

W. B. M'LAREN,
Superintendent of Prison Industries.

The Comptroller-General of Prisons.

Forwarded.—J.L., Governor Sydney Gaol, 26/9/89.

Telegram from Thos. Barnett, Governor of Parramatta Gaol, to A. H. Collis, Deputy Comptroller of Prisons, Sydney.

23 September, 1889.

SUPERFINE frame mats : Plain, 1s. per lb. ; bordered, 1s. 2d. per lb.

Sir,

Department of Prisons, Sydney, 3 September, 1891.

I beg to report that goods are not manufactured in the gaols of the Colony and sold to the public. The only manufactures sold are mats and matting, and these sales are restricted to the trade only.

I have, &c.,

W. B. M'LAREN,
Superintendent of Prison Industries.

The Comptroller-General of Prisons.

Submitted.—A.C.F., 2/10/89.

Mr. Abigail and Messrs. Armstrong to be informed in suitable terms of the nature of the Comptroller-General's minute and supplied with a copy of the report from the Superintendent of Prison Industries, and further informed that I have given directions for an increase in price of all goods supplied at a less rate than that charged by Messrs. Armstrongs' standard. C.-G. to be informed of my wish in this respect.—A.J.G., 11/10/89.

No. 40.

The Under Secretary of Justice to The Comptroller-General of Prisons.

Sir,

Department of Justice, Sydney, 21 October, 1889.

Referring to your report of 2nd instant on a letter received from Messrs. J. Armstrong and Son, further respecting the price of mats manufactured at Darlinghurst and Parramatta Gaols, I am directed by the Minister of Justice to inform you that he has decided that the price of all goods sold at a less rate than that charged by Messrs. Armstrong and Son, should be increased to their standard, and to request that you will be good enough to give the necessary instructions in the matter accordingly.

I have &c.,

ARCH. C. FRASER,
Under Secretary.

No. 41.

The Under Secretary of Justice to F. Abigail, Esq., M.P.

Sir,

Department of Justice, Sydney, 21 October, 1889.

Referring to your letter of 11th September last, forwarding a communication from Messrs. J. Armstrong and Son, respecting the prices charged for mats manufactured at Darlinghurst and Parramatta Gaols, I am directed by the Minister of Justice to forward for your information the enclosed copy of a report on the matter received from the Superintendent of Prison Industries, and to inform you that the arrangement referred to by Messrs. Armstrong and Son as having been arrived at during the administration of the late Minister of Justice, Mr. Clarke, was solely in reference to "Diamond Back," "Super Frame," and "Centennial" mats, of which alone at that time complaints were made. The two former were raised to their standard prices, and the "Centennial" not being a mat made by them was raised 25 per cent., which almost stopped the sale.

The Minister has been informed that the "Super Frame" mats are sold by the lb., not by the foot as given in the price list submitted by Messrs. Armstrong and Son, which makes up the difference of 50 per cent. complained of, and brings the price to their standard.

The Minister has further been informed that it is proposed to discontinue the mat-making industry at Parramatta Gaol.

I am to add that Mr. Gould has given directions for an increase of price to Messrs. Armstrong and Son's standard of all goods supplied at a less rate than that charged by them.

I have, &c.,

ARCH. C. FRASER,
Under Secretary.

No. 42.

No. 42.

The Under Secretary of Justice to J. Armstrong and Son.

Gentlemen,

Department of Justice, Sydney, 21 October, 1889.

Referring to your communications of 16th and 20th ultimo, respecting the prices charged for mats manufactured at Darlinghurst and Parramatta Gaols, I am directed by the Minister of Justice to forward for your information the enclosed copy of a report on the matter received from the Superintendent of Prison Industries, and to inform you that the arrangement referred to by you as having been arrived at during the administration of the late Minister of Justice, Mr. Clarke, was solely in reference to "Diamond Back," "Super Frame," and "Centennial" mats, of which alone at that time complaints were made. The two former were raised to your standard prices, and the "Centennial," not being a mat made by you, was raised 25 per cent., which almost stopped the sale.

The Minister has been informed that the "Super Frame" mats are sold by the lb., not by the foot, as given in the price list submitted by you, which makes up the difference of 50 per cent. complained of, and brings the price to your standard.

The Minister has further been informed that it is proposed to discontinue the mat-making industry at Parramatta Gaol.

I am to add that Mr. Gould has given directions for an increase of price to your standard of all goods supplied at a less rate than that charged by you.

I have, &c.,

ARCH. C. FRASER,
Under Secretary.

No. 43.

J. Armstrong and Son to The Minister of Justice.

Mat Manufactory, 114, Riley-street,

Sydney, 24 October, 1889.

Honorable Sir,

We take pleasure in tending to you our heartiest thanks for your assurance that justice shall be done to us in the matter of prison labour competing unduly with free labour. The more so because we have been subjected to a large amount of trouble in the way of correspondence, &c., besides the actual annoyance and pecuniary loss directly traceable to the action of the authorities. In doing this we take the liberty of assuring you that in all our representations we have been careful to advance nothing but what was strictly true, and as a further guarantee we are willing to furnish you with the original Parramatta price list of which we sent you a copy on condition that it is returned to us at your earliest convenience. We make this condition because we are aware that much craft and deception have been used to perpetuate the injustice from which we have so long suffered, and we found it extremely difficult to obtain a price list. Indeed, one of our customers informs us that one of the gaol officials had the audacity to admonish him for supplying us with a price list on a former occasion. From this it will be seen that we have been persecuted and undersold in the market, and that too in a most dishonorable and contemptible manner, and it is certainly satisfactory to find that you intend all prison made goods shall be sold on a par with the prices as shown in our list.

But we would most respectfully ask that you will be good enough to see that this is done, and that the necessary alteration is made in the price list issued to the trade by the prison authorities.

We feel confident that unless this is done they will continue to conduct their business so loosely as to dispose of their goods at the same ridiculously low prices. We trust that the matter will be firmly dealt with by you, and finally settled, as you must perceive how persistently the gaol authorities have sought most unfairly, unjustly, and altogether unwarrantably to injure our business. Hitherto any pretext has sufficed to continue this most detestable practice.

Again thanking you,

We have, &c.,

J. ARMSTRONG AND SON.

Submitted. See also remarks of Messrs. Armstrong and Son, enclosed on the report submitted by the Superintendent of Prison Industries; but as the matter has now been settled to the evident satisfaction of Messrs. Armstrong and Son, there would not appear to be any necessity for further action on the part of this Department. The papers might be forwarded for the perusal of the Comptroller-General.—A.C.F., 31/10/89.

Approved.—A.J.G., 1/11/89. The Deputy Comptroller of Prisons.—T.E.M.N. (for U.S.), B.C., 1/11/89. Perused and returned, new price lists being printed in accordance with the Minister's decision.—A.H.C., B.C., 13/11/89.

No. 44.

J. Armstrong and Son to The Minister of Justice.

Honorable Sir,

Mat Manufactory, 114, Riley-street, 15 November, 1889.

Your kind consideration of our case and decision thereon is highly satisfactory to us, and will, no doubt, be so to all lovers of justice and the public at large.

We beg most respectfully to ask that when the Darlinghurst and Parramatta Gaols new price list is printed and issued to the trade you will kindly oblige us by directing or giving instructions that one copy of each gaol price list be forwarded to us, that we may see that your instructions are fully carried out, and our minds contented that there will be no further contention upon the matter.

We have, &c.,

J. ARMSTRONG AND SON.

Submitted.—A.C.F., 19/11/89.

Price list may be forwarded as desired.—A.J.G., 20/11/89.

No. 45.

The Under Secretary of Justice to The Deputy Comptroller of Prisons.

Sir, Department of Justice, Sydney, 22 November, 1889.
Referring to your blank cover communication of the 15th instant, respecting the preparation of new price lists for mats, &c., made in the Sydney and Parramatta Gaols, I am directed by the Minister of Justice to request you to be so good as to forward copies of the same, when prepared, to Messrs. Armstrong & Co., 114, Riley-street, for their information.

I have, &c.,

ARCH. C. FRASER

(per T.E.M.N.),

Under Secretary.

No. 46.

The Under Secretary of Justice to J. Armstrong and Son.

Gentlemen, Department of Justice, Sydney, 22 November, 1889.
Referring to your letter of the 15th instant, respecting the prices charged for mats, &c., made in the Sydney and Parramatta Gaols, and asking to be furnished with the new price lists when prepared, I am directed by the Minister of Justice to inform you that the Deputy Comptroller of Prisons has been requested to forward you a copy of the lists when issued.

I have, &c.,

ARCH. C. FRASER,

Under Secretary.

No. 47.

The Governor, Sydney Gaol, to The Comptroller-General of Prisons.

Sir, H. M. Gaol, Sydney, 29 April, 1892.

On 27 June, 1890, the Superintendent of Prison Industries issued a certain circular notifying that a particular class of mat (excepting for public Departments) would be discontinued.

See attached list.

I have now the honor to report that this restriction has led to a serious loss of revenue and also to a large accumulation of brush, bordered, and super mats in the store, a quantity far in excess of any possible want for the Government Departments. I therefore now beg to suggest that circular of the 27th June, 1890, be forthwith cancelled, the manufacture of the particular class of mats therein mentioned resumed, and the goods now in store and to be so manufactured placed for sale in open market at actual current rates. Should such a course be pursued a marked increase of prison earnings will follow without in any way affecting the prices paid to outside firms manufacturing a similar class of goods.

I have, &c.,

P. HERBERT,

Governor, Sydney Gaol.

Superintendent of Prison Industries for report as to reasons for the issue of circular of 27th June, 1890.—G.M., B.C., 2/5/92. Report herewith. Also see papers *re* dismissal of Overseer J. Danks.—W.B. McL., 3/5/92.

The sale of the mats in question was discontinued solely in consequence of the necessity for removing Overseer Danks (the Instructor) from the service. In view of this letter, and as I am informed by Mr. McLaren that the mats can now be manufactured at the gaol under Overseer Foster, sales to the trade may be renewed, on the clear understanding that the prices charged shall not be below the current rates. It is very necessary that every fair effort should be made to secure regular and productive work for prisoners, and that the extensive mat-making machinery which has been provided at Darlinghurst Gaol should be utilised as much as possible.—G.M., 27/5/92. The Governor, Darlinghurst Gaol, B.C. The Superintendent of Prison Industries to note.—P.H., Gov., Darlinghurst, 28/5/92. Noted.—W.B. McL., 30/5/92.

[Enclosure.]

Stock of Mats on hand, 29 April, 1892, which were formerly sold to the public.			
1,011 Plain Brush Mats—12,453 lb. at 9d.			£466 19 9
11 Border " 128 " 10d.			5 6 10
261 Super " 3,877 " 1s.			193 17 0
55 Super Border Brush Mats—1,203 lb. at 1s. 2d.			70 3 6
5 " " 80 " 1s. 3d.			5 0 0
33 " " 33 " 1s. 9d.			2 17 9
7 " " 35 " 1s. 6d.			2 12 6
25 " " 990 " 2s.			99 0 0
			£845 17 4

W. FOSTER,
Overseer.

Forwarded to the Comptroller-General of Prisons.—P. HERBERT, Governor, Sydney Gaol, 9/4/92.

No. 48.

J. Armstrong and Son to The Comptroller-General of Prisons.

Dear Sir, Mat Manufactory, 114, Riley-street, 27 June, 1892.

It is with regret that we have most respectfully to address you again as to gaol competition with free labour; but we have thought it our duty to do so before taking any further steps in the matter, you having by circular in 1889 informed the trade that you would not supply the public with Diamond Back brush mats, or super frame mats, or with names on them.

We

We beg to state, for your information, that one of our customers, being at the gaol last week, *was solicited by the overseer for custom for the above mats, also stating that the gaol was going to supply the public.* We trust we have been misinformed, as we have gone to considerable expense in purchasing machinery, &c., to supply the public with the above goods.

Trusting you will give immediate attention to this, and stop any breach of agreement.

We have, &c.,

J. ARMSTRONG AND SON.

The Governor, Darlinghurst Gaol, for report (see passage in italics).—G.M., B.C., 29/6/92. The Superintendent of Prison Industries to make strict inquiry, and then report.—P.H., Governor, Darlinghurst, 30/6/92.

I have made strict inquiry in the matter of this complaint, and beg to report that Overseers Forster and Murphy, in charge of mat-shops, both deny having at any time solicited custom from any visitors to the gaol.—W. B. M'LAUREN, Superintendent of Prison Industries, 30/6/92. The Governor, Darlinghurst Gaol.

Forwarded for the information of the Comptroller-General of Prisons.—P.H., Governor, Darlinghurst, 1/7/92.

Acknowledge letter, and inform that the supply to trade of the mats in question was discontinued in June, 1890, on account of certain departmental reasons, not because it in any way interfered with any manufacturer or with free labour. It has now been found necessary, in the interests of the Department, to resume the sale of the mats, which will be disposed of to the trade only, at current rates, not to the general public. I fail to see that Armstrong and Son have any ground for the complaint which they have made in their letter.—G.M., 1/7/92.

No. 49.

The Comptroller-General of Prisons to J. Armstrong and Son.

Department of Prisons, N.S.W., Comptroller-General's Office,

Gentlemen,

Sydney, 4 July, 1892.

I have the honor to acknowledge the receipt of your letter of 27th June ultimo, respecting the decision to resume the sale of "Diamond Back brush mats" and "super frame mats" which are manufactured at Darlinghurst Gaol.

2. In reply, I beg to inform you that the sale to the trade of the mats in question was discontinued in June, 1890, on account of certain departmental reasons, not because it in any way interfered with any manufacturer or with free labour.

3. It has now been deemed necessary, in the interests of the Department, to resume the sale of the mats, which will be disposed of to the trade only, at current rates, not to the general public as your letter states.

I have, &c.,

GEORGE MILLER,
Comptroller-General.

No. 50.

J. Armstrong and Son to The Minister of Justice.

Dear Sir,

Mat Manufactory, 114, Riley-street, 29 July, 1892.

We beg most respectfully to bring under your notice, as citizens and manufacturers, what we consider to be a gross injustice towards us and the public in general, trusting you will take immediate steps to prevent us from suffering loss of trade by undue competition with prison labour. We beg to state that we have been established in Sydney fourteen years, and have gone to considerable expense purchasing looms and machinery to supply the mat trade of the Colony, and have done so to the satisfaction of the trade in general.

About two years and a half since we wrote to the late Honorable Minister of Justice about prison competition with free labour injuring us, and in June, 1890, the present Comptroller issued a circular to the trade stating that the gaol authorities had given up supplying the trade with our class of goods, viz., Diamond Back brush mats and super frame mats with names on; since then, as above stated, we have given every satisfaction to the trade. Finding that after two years the Comptroller has again commenced to supply the trade, we wrote to him upon the subject, and, in his reply to us he there states that he is not going to supply the public, yet admits he is going to do so through the trade. We would most respectfully call your attention to the Comptroller's Annual Report to you for 1891; he there shows that a greater number of prisoners were employed at the mat trade than in the previous year, and complains about so many recommitals. We beg to state that most of the same is caused by prisoners upon discharge being unable to find employment at the trade; for out of the many thousands of prisoners that have passed through the mat-shops for the last thirty years, we believe there is not one to be found employed at the trade in the Colony, owing to prison competition with free labour crushing out Colonial industry, this being an injustice to the prisoner and a loss to the public in the expense of reconvictions. We candidly admit (and having had great experience with prisons and prisoners, both here and in England,) that employment must be found for them; but, at the same time, in a young Colony like this, they could be employed exclusively in supplying Government establishments with all requirements, and, by this, their time be fully occupied, and not interfere with invested capital or free labour in any way, if proper supervision is used. We beg also to state that for years there was a contention between the Press and the gaol authorities for underselling us to the trade, but when the circular was issued, in 1890, that contention ceased.

We trust also, your honorable self being a member of the present Government, who have promised to protect native industries, will not permit us to be at a loss of trade by having to compete against prison labour.

We have, &c.,

J. ARMSTRONG AND SON.

Submitted. Might be referred to the Comptroller-General of Prisons for favour of report, and with reference to previous papers.—A.C.F., 4/8/92. Approved.—R.E.O'C., 5/8/92. The Comptroller-General of Prisons.—T.B.M'N. (for U.S.), B.C., 6/8/92. See my memo. herewith.—G.M. The Under Secretary of Justice, B.C., 10/8/92.

No. 51.

The Under Secretary of Justice to J. Armstrong and Son.

Gentlemen,

Department of Justice, Sydney, 3 August, 1892.

I have the honor to acknowledge the receipt of your letter of the 29th ultimo, respecting the manufacture of mats in the gaols of the Colony, and to inform you that the same will receive due consideration.

I have, &c.

ARCH. C. FRASER,
Under Secretary.

No. 52.

The Comptroller-General of Prisons to The Under Secretary of Justice.

Darlinghurst Gaol:—Armstrong and Son's letter dated 29th July, 1892, as to sale to the trade of certain mats manufactured at.

The sale to the trade of the mats in question was discontinued on account of a difficulty that arose through the misconduct of an overseer of the mat-shop, and which made it necessary to dispense with his services. It has, however, been found practicable to continue the manufacture of the mats under the supervision of another overseer, and they have accumulated to such an extent as to render it necessary in the interests of the Department to again offer them to the trade, but no attempt to sell at lower prices than those charged by Messrs. Armstrong and Son has been made.

The discontinuance of the sale in June, 1890, was in no way connected with the representations made by Messrs. Armstrong and Son to the late Minister of Justice in 1889 (before I took charge of the Department) which then led to the total discontinuance of the mat-making industry at Parramatta Gaol, which, as the late Mr. McLean reported, "had been in effect stifled by the concessions made" to Messrs. Armstrong and Son. Nor was I influenced in the action I took by any correspondence which had appeared in the Press.

The requirements of the Government Departments fall far short of the quantity of mats manufactured at the gaol, and if the sale were restricted to such Departments, a great part of the valuable mat-making plant at Darlinghurst would have to remain unused, and many prisoners who are now usefully employed would, as a consequence, be left in idleness. Mat-making is an industry which in every country is in favour as a suitable means of employment for prisoners.

If the Department had introduced into the gaols as a new industry something which was carried on by Messrs. Armstrong and Son only, there might be some ground for their complaint, but inasmuch as the making of various kinds of mats was started at Darlinghurst Gaol with an expensive plant many years before the present firm of Armstrong and Son came into existence, I am unable to see any justification for their present action. Mr. Armstrong himself was for ten years employed as an overseer in the mat-shop at Darlinghurst, and his attempt to interfere with the prison industries by asking that the sale to the trade may be stopped is, I submit, most unreasonable.

By some people I am urged to find more useful work for the prisoners confined in our gaols (and this I make every effort to do) while others endeavour to interfere with the industries which the Department has already introduced.

I would invite the Minister's attention to the attached letter from the Governor of the Gaol dated 29th April, 1892. On his recent visit, Mr. O'Connor saw what a large number of mats was in stock at the gaol.

GEORGE MILLER,
Comptroller-General.

The Under Secretary for Justice, B.C., 10/8/92. Submitted.—A.C.F., 12/8/92.

[Enclosure.]

Sydney, 20 April, 1892.

On 27th June, 1890, the Superintendent of Prison Industries issued a certain circular notifying that a particular class of mat (excepting for public departments) would be discontinued.

I have now the honor to report that this restriction has led to a serious loss of revenue and also to a large accumulation of brush-bordered and super mats in the store, a quantity far in excess of any possible want of the Government Departments. I, therefore, now beg to suggest that the circular of 27th June, 1890, be forthwith cancelled, the manufacture of the particular class of mats therein mentioned resumed, and the goods now in store and to be so manufactured placed for sale in open market at actual current rates. Should such a course be pursued a marked increase of prison earnings will follow, without in any way affecting the prices paid to outside firms manufacturing a similar class of goods.

The Comptroller-General of Prisons.

I have, &c.

P. HERBERT.

No. 53.

J. Armstrong and Son to The Minister of Justice.

Honorable Sir,

Mat Manufactory, 114, Riley-street, Sydney, 22 October, 1892.

We beg most respectfully to state that we duly received your letter dated 3rd August last, stating that our correspondence to you upon undue gaol competition with us would have due consideration; we beg also to ask you to consider in addition to our former correspondence the injustice of the Comptroller-General of Prisons, after two years non-supplying the public with prison-made goods, commencing again to supply a few houses in the trade to our loss, also to the exclusion of the general public; and we beg leave to ask most respectfully that the Government will not permit the Comptroller of Prisons to use public money to crush out our industry, and to benefit a few freetrade houses in Sydney, who may profit by our loss of trade, and to the loss of our employees. We trust that you will also see that no tradesman or manufacturer is safe in investing money in machinery to develop trade in the Colony if the head of a department is permitted to use public money in competition against any honest industry to the ultimate ruin of the same, and perhaps driving men into prison for want of employment, of which there is so little in the Colony at the present time. Trusting you will give righteous judgment in our case, and consider our former correspondence with this.

We have, &c.,

J. ARMSTRONG AND SON.

Submitted. See 92-12,164 herewith.—A.C.F., 27/10/92.

No. 54.

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No. 54.

Mr. A. Forsyth to The Minister of Justice.

Sir,

339, Kent-street, Sydney, 26 October, 1892.

Some two months back I had the honor of interviewing you *re* prison competition with free labour in the manufacture and sale of coir mats, when you promised to give me an answer whether the sale of mats to the public is or is not to be continued by the Prison Department.

As I have not received, up to date, an answer it may be as well to remind you that the right and expediency of employing prison labour in the production of such articles as offer suitable employment for prison labour is fully recognised, but as the Government Departments require more than double of this class of goods than can be produced by prison labour, their sale to the public is unnecessary, and inflicts destructive competition on those employing free labour in the manufacture of similar articles.

Should all prison-made goods be supplied to the Government Departments, this will doubtless decrease the quantity to be made by free labour, but will not in any way tend to reduce the price of those made by private manufacturers; but if prison-made goods are sold to the public, even to the extent of one-twentieth of the aggregate consumption, the effect will be to lower the price of the whole to the rates at which the Prison Department are willing to sell.

This view of the sale of prison-made goods has been taken by nearly all civilised countries, and I most respectfully ask you how can a manufacturer that has to pay current wages, or, at the least, wages sufficient to maintain those employed, compete with prison labour in part supported by the State.

For the reasons above stated, and others that will arise in considering this matter, I hope you will be able to come to an early and favourable decision on the question.

I have, &c.,

ARCHIBALD FORSYTH.

Submitted. See 92-12,164 and 92-16,535 not yet dealt with by the Minister.—A.C.F., 27/10/92.

No. 55.

J. Armstrong and Son to The Minister of Justice.

Honorable Sir,

Mat Manufactory, 114, Riley-street, 23 November, 1892.

Since receiving yours of the 3rd August, stating that our contention *re* prison-labour competition injuring us and the public in general, in answer to which you stated that the same should have due consideration, not having an answer to our application up to the present time, we beg most respectfully to state, for your information, since communicating with you on this subject we have met with a considerable amount of intrigue. In the first place, the gaol authorities have written to our customers and the Steam Navigation Companies, stating that they are prepared to supply special orders. Then our customers have sent to us asking, in many instances, the price for special mats, and, finding the gaol will do the same for less money and more discount, we have lost the order. We trust that you, with the Government, will stop this, to us, ruinous competition of colonial industry.

We beg to enclose, also, for your information, the Prison Report for 1888, a copy of which we sent to the late Hon. Minister of Justice, showing that there was a deficiency of nearly £4,000 which the late Comptroller of Prisons says he could not account for. We then stated that most of the loss was in consequence of reckless competition against us.

Trusting you will see the immediate necessity of stopping all prison competition with free labour.

We have, &c.,

J. ARMSTRONG AND SON.

Submitted, in connection with previous papers, herewith.—A.C.F., 26/11/92.

The Comptroller-General of Prisons for report as to the allegations of communicating with the persons named. If it were possible to use all the mats made in supplying Government Departments none should be sold to the general public. If prison labour could be utilised in supplying other goods than mats to the Government Departments this should be done. Will the Comptroller-General of Prisons please write a full statement as to how matters stand at present, to what extent and with what goods does the Prison Department supply the other Government Departments, and can this mode of employing prisoners be extended so as to employ some of the prisoners now employed at mat-making in other industries?—R.E.O'C., 31/12/92.

The Comptroller-General of Prisons.—T.E.M'N. (for U.S.), B.C. 3/1/93.

No. 56.

The Under Secretary of Justice to J. Armstrong and Son.

Gentlemen,

Department of Justice, Sydney, 26 November, 1892.

I have the honor to acknowledge the receipt of your letter of the 26th instant, further respecting the manufacture of mats within the gaols of the Colony, and to inform you that the matter is still under consideration.

I have, &c.,

ARCH. C. FRASER,

Under Secretary.

No. 57.

J. Armstrong and Son to The Attorney-General.

Dear Sir,

Mat Manufactory, 114, Riley-street, Sydney, 7 January, 1893.

Seeing the amount of Bills and other matters that have engaged the valuable time of yourself and the Honorable Minister of Justice, we have refrained from troubling you with our case *re* prison competition with free labour. It being nearly six months since our case was first brought under notice of the Honorable Minister of Justice, during that time we have suffered considerable loss; our machinery and

and employees have been working only three or four days per week in consequence of prison competition; we, therefore, beg to enclose for your information further correspondence sent to the Honorable Minister of Justice in November last, showing how the gaol authorities are competing against us (the reply to which we received is—that our case is still under consideration); we beg most respectfully, and earnestly entreat you to use your influence with the Honorable Minister to consider all our correspondence, and so prevent us and our employees being ruined by the unjust proceedings of the Comptroller of Prisons in again coming into active competition against us, and persecuting us with public money.

We have, &c.,

J. ARMSTRONG AND SON.

The correspondence in the matter herein referred to appears to be with the Department of the Minister for Justice, within whose province it comes. This letter is submitted with reference to the request contained in the concluding few lines thereof.—W.W.S., 9/1/93.

Forwarded to the Minister for Justice. But first please acknowledge letter, and inform that the matter is one which cannot be dealt with by my Department, and that the letter has been forwarded to my colleague—E.B., 30/1/93.

The Under Secretary of Justice, B.C., 1/2/93.—H.M., for the Sec. Submitted with reference to previous papers now before the Minister.—A.C.F., 2/2/93.

No. 58.

The Secretary to The Attorney-General to J. Armstrong and Son.

Gentlemen,

Attorney-General's Department, Sydney, 1 February, 1893.

I am directed by the Attorney-General to acknowledge the receipt of your letter of the 7th ultimo, complaining of the competition on the part of prison labour against your manufactory, and to inform you that the matter complained of is one which cannot be dealt with by this Department, and that your communication has been forwarded by Mr. Barton to his colleague the Minister of Justice.

I have, &c.,

HERBERT MORRIS,

(For Secretary to Attorney-General).

No. 59.

J. Armstrong and Son to The Minister for Public Works.

Hon. Sir,

Mat Manufactory, 114, Riley-street, Sydney, 27 February, 1893.

We find that you stated in your address at the meeting of Mort's Dock picnic, that the present Government were anxious to help on private enterprise. We are sorry to say such is not the case, we are not disposed to enter into newspaper controversy in that respect, or to bring our correspondence before the Assembly, but to our sorrow, we find that the Government after two years abstaining from competing with us, commenced to do so in June last, by sending circulars to our customers, taking our trade away, and not only that, but giving a greater discount to get our customers, and so throw our employees out of work by competition with convict labour. We have been in correspondence with the Honorable Minister of Justice for the last eight months, and the only reply we receive is, that our case is still under consideration; thus we are being ruined by the present Government permitting the Comptroller of Prisons using public money to crush us, and to throw our employees out of employment, and we beg to refer you to the Honorable Minister of Justice, and to our correspondence with him in the matter as to the persecution of us by the Comptroller of Prisons. We believe, that when you read the whole of the correspondence, you will see we are being cruelly treated by a Government who profess to encourage private enterprise, it seems to us anything but protection.

We have, &c.,

J. ARMSTRONG AND SON.

My dear O'Connor,—Is the statement made herein true?—Yours truly, WILLIAM JOHN LYNE, 28/2/93. Bring the other papers on this matter before me, and prepare statement of how the matter stands.—R.E.O'C., 28/2/93.

No. 60.

J. Armstrong and Son to The Minister of Justice.

Dear Sir,

114, Riley-street, Sydney, 6 March, 1893.

It is with great reluctance we have to again trouble you upon the injustice of the present Government underselling us by prison competition after the Parkes Government had abstained from doing so for two years previously. After eight months correspondence with your office on the matter, the only reply we receive is that our case is still under consideration; at the same time we are being ruined, and our employees thrown out of work. We beg most respectfully to ask you, before bringing our case and correspondence before the Legislative Assembly, if there is any probability of the present Government who profess to encourage private enterprise ceasing to compete with us by convict labour and with public money.

An early reply will oblige.

We have, &c.,

J. ARMSTRONG AND SON.

Bring all the papers before me as early as possible.—R.E.O'C., 6/3/93.

No. 61.

Minute of The Under Secretary of Justice.

J. Armstrong & Co.'s complaints respecting alleged undue interference with their industry by the sale of prison-made mats.

SUBMITTED.—Messrs. Armstrong & Co.'s complaints that their mat-making industry, carried on by free labour, is unfairly competed with by the sale of prison-made goods has formed the subject of a large amount of correspondence for some years. In November, 1887, it was mutually arranged to the satisfaction of both sides that the Prisons Department was not to undersell Armstrong & Co., and a price list agreed upon.

In June, 1888, Armstrong & Co. asserted they were being undersold in one particular class of mat, the "Diamond Back," but the Superintendent of Prison Industries reported that the "Centennial" (the mat referred to) was not equal in quality to the "Diamond Back." Mr. Clarke (then Minister) on 18th August, 1888, decided that mats of the same quality as those made by Armstrong should not be sold at a less price, but for inferior mats the price must be regulated accordingly. Armstrong & Co. continued to assert that in this respect they were being undersold, but it was shown the "Centennial" was only roughly made and weighed but $1\frac{1}{4}$ lb. to the square foot, while Armstrong's "Diamond Back" was of a better finish, closely woven, and weighed $1\frac{3}{4}$ lb. to the square foot. The prison authorities, however, decided, for the sake of increasing the profit, to increase the price of the "Centennial."

The concessions made to Armstrong & Co. led to the partial cessation of the mat-making industry at Parramatta Gaol, and to its reduction in other gaols, and in June, 1890, sales of some classes of mat were discontinued, through difficulty which arose owing to the misconduct of an overseer. Now it has been found possible to recommence the manufacture of mats, and a large stock having accumulated, former customers—firms and shipping companies—were communicated with, notifying the resumption of sales. The prices asked are still strictly in accord with those charged by Armstrong & Co., and the Prisons Department deny underselling or seeking to take away the customers of the firm named.

The Comptroller-General in his report of 10th August last points out that the mat-making was started in the gaols of the Colony long before the firm of Armstrong & Co. came into existence, that Mr. Armstrong was for ten years overseer in the shop at Darlinghurst. Mr. Miller also points out that if mat-making be discontinued a large number of prisoners would be in enforced idleness, and that the Government Departments could not absorb the quantity of mats manufactured. A.C.F., 13/3/93.

No. 62.

J. Armstrong and Son to The Minister of Justice.

Hon. Sir,

Mat Manufactory, 114, Riley-street, Sydney, 17 June, 1893.

We beg most respectfully to again address you *re* prison-labour competition with us in the market. We have refrained from continuing our correspondence, believing that your time has been fully occupied with Parliamentary business, but we take the liberty of again asking you to consider our correspondence, to which we have not received a reply during the recess, and in doing so, would respectfully call your attention to the fact that, while the Government is, and has been, doing its best to find employment for the working classes, the prison authorities, by competing with and underselling us in the market, are throwing our employes out of work, and thereby increasing the number of unemployed; also ruining us after investing a considerable amount in plant and machinery, believing that the Comptroller of Prisons would strictly adhere to the circular sent round to the trade, stating that the Government would not supply mats as made by us in the future. And we therefore humbly trust that you will see the necessity of taking steps to stop the present course of action pursued by the Comptroller of Prisons.

Trusting you will give the matter your favourable consideration,

We have, &c.,

J. ARMSTRONG AND SON.

Submitted.—A.C.F., 20/6/93.

No. 63.

The Under Secretary of Justice to J. Armstrong & Co.

Gentlemen,

Department of Justice, Sydney, 20 June, 1893.

I have the honor to acknowledge the receipt of your letter of the 17th instant further respecting the manufacture of mats within the gaols of this Colony, and to inform you that the same will receive due consideration.

I have, &c.,

ARCH. C. FRASER,

Under Secretary.

No. 64.

The Under Secretary of Justice to The Comptroller-General of Prisons.

Will the Comptroller-General of Prisons be good enough to furnish, for the information of the Minister, a statement showing,—

1. The extent of the manufacture of mats in the gaols of the Colony during 1891 and 1892, with the number and description of the mats made.
2. The distribution of the goods manufactured, and,
3. Whether the industry is a paying one to the Government.

A.C.F., 22/6/93.

For report of the Governor, Darlinghurst Gaol, in the first instance.—A.H.C. (for C.-G.P.), 27/6/93. The Superintendent of Prison Industries will be good enough to furnish report as to questions No. 1 and 2.—P.H., Gov., 27/6/93. A return of details herewith.—W. B. McLAREN, 17/7/93. The Governor Darlinghurst Gaol. Information furnished on separate papers with report from myself.—G.M., B.C., 9/8/93. The Under Secretary of Justice.

No. 65.

No. 65.

The Comptroller-General of Prisons to The Under Secretary of Justice

MINUTE PAPER.

Subject:—Under Secretary of Justice's Memo. of 22/6/93 on Armstrong and Son's letter of 17/6/93.

Department of Prisons, Comptroller-General's Office, Sydney.

HEREWITH is transmitted for the Minister's information a report from the Superintendent of Prison Industries, together with returns of manufactures, and sales of mats and matting during the period of 1891 and 1892.

From Mr. McLaren's report it will be seen that the industry is a paying one. I may mention, however, that this is not the only object in view. The principal one is to secure a productive industry, requiring the exercise of intelligence and skill, so that suitable work may be found for hard labour prisoners.

Mat-making is found to be one of the best kinds of productive work for gaols, and a large plant was provided years ago, at considerable cost, for Darlinghurst.

Armstrong and Son have again stated what is not true when they represent that the Prison Department is "underselling" them in the market. Our prices are based upon theirs, and the same discount is allowed to the trade on the class of mats which they manufacture. They do not manufacture coir matting. This Department, further, does not sell to the public,—only to the trade—while Armstrong and Son can sell to whom they please.

I have in a previous report referred to the unreasonableness of Armstrong and Son's efforts to prevent mats made by prisoners from being sold to the trade. I will now quote from the Report of the Queensland Board of Inquiry into Gaols, Penal Establishments, and Lock-ups (1887), which has been highly spoken of in England. In referring to the employment of prisoners that report says:—

"Purely penal labour, such as the crank, shot drill, and the treadmill, is the unreasoning exercise of muscular force, and produces resentment, obstinacy, and hardness in the labourer. It is torture in disguise, can only be carried on for a limited period, and is totally non-reformatory in its effects. That prison labour competes with free labour in a certain limited sense is true, but the labour of the prisoners, if they were at large, would be available in the open market to compete in some direction with that of other free men. Why, then, should not a prisoner compete equally if he is confined and fed at the expense of all free and honest men? Admitting that in certain trades which are best adapted to prison labour there would be competition, individual interests must give way to communal. Gaols must be maintained by the honest and law-abiding; this burden may be lightened by compelling rogues, vagabonds, and dishonest men to maintain themselves by labour in prison. To teach a prisoner to work who has been previously nothing but a parasite on society is to add to the sum of producing power in the community. It is better for the honest man that he should submit to the competition of even prison-taught fellow craftsmen than that he should be the victim of their cupidity or criminality."

GEORGE MILLER,

Comptroller-General.

The Under Secretary of Justice, B.C., 9/8/93.

[Enclosures.]

Sir, Department of Prisons, N.S.W., Comptroller General's Office, Sydney, 31 July, 1893.

I have the honor to report *re* coir matting and mat industry in gaols—Darlinghurst, Armidale, Dubbo, Young, and Tamworth—during the years 1891 and 1892.

During that period 42,953½ square yards of coir-matting have been manufactured, the net value of which amounts to £2,937 2s. 9d.; of this £736 15s. have been supplied to Government Departments, and £1,968 6s. 8d. to the trade. I may here state we are the only manufacturers of coir matting in the Colony, with the exception of the Industrial Blind Institution, which does a small amount of this work.

For the same period 5,542 mats of various kinds have been manufactured, the net value being £1,618 14s. 7d.; of this amount £1,029 2s. 9d. have been supplied to Government Departments, and £426 13s. 6d. sold to the trade.

These two statements show that the aggregate labour profit from mats and matting is £4,160 17s. 11d., representing the quantities sold during the period stated, 1891 and 1892.

The quantities of coir-matting and mats which have not been sold remain in stock, the value of which amounts to £394 19s. 5d.

A detailed statement of manufactures and sales for years 1891 and 1892 herewith.

I have, &c.,

W. B. McLAREN,

Superintendent, Prison Industries.

The Comptroller-General of Prisons.

Memorandum.

It having been decided to resume the manufacture of diamond back, super frame, and lettered mats, orders (from the trade only) may now be forwarded to Darlinghurst Gaol for such class of goods, which shall be supplied at current rates.

P. HERBERT,

Governor, Darlinghurst Gaol.

Memorandum.

Department of Prisons, N.S.W., Comptroller-General's Office, Sydney, 29 June, 1893.

Be good enough to furnish a return showing the extent of the manufacture of mats in the gaol under your charge during the years 1891 and 1892, the number and description of the mats made, and the distribution of them.

The value of labour and material should also be shown.

GEORGE MILLER,

Comptroller-General.

The Gaoler, Armidale.

Please furnish a return showing the value of mats made during the years 1891 and 1892 (labour and material). This return includes those in stock prior to that date.—W.B.M.L., 18/7/93. Return herewith.—H. GOVERS, Gaoler, 26/7/93. The Superintendent, Prison Industries.

Manufacture and disposal of mats at Armidale Gaol for years 1891 and 1892.

4th July, 1893.

Year	Stock on hand commencing year.			
	Plain Brush.	Bordered Brush.	Plain Thrum.	Bordered Thrum.
1891	85	7	...	7
1892	91	7	1	7

Year	Manufactured.			
	Plain Brush.	Bordered Brush.	Plain Thrum.	Bordered Thrum.
1891	73	1	5	1
1892	14	...	9	..

Disposed

Disposed of.

Year.	Plain Brush.	Bordered Brush.	Plain Thrum	Bordered Thrum
1891	67	1	4	1
1892	105	7	10	7

Year.	Labour.	Material.
	£ s. d.	£ s. d.
1891	17 2 3	10 1 6½
1892	8 8 10	3 16 10

The Comptroller-General of Prisons, Sydney.

Memorandum.

Department of Prisons, N.S.W., Comptroller-General's Office, Sydney, 29 June, 1893.

Be good enough to furnish a return showing the extent of the manufacture of mats in the gaol under your charge during the years 1891 and 1892, the number and description of the mats made, and the distribution of them.

The value of labour and material should also be shown.

GEORGE MILLER,
Comptroller-General.

The Gaoler, Dubbo.

Herewith return showing the extent of manufacture of mats for the years 1891 and 1892.—J. BOYDEN, Gaoler, 4/7/93. The Comptroller-General of Prisons.

Labour and material column should be filled in. Were there not lettered mats made during these two years? If so value of letters should be shown, in the sales each line should be extended—also correct errors in extension in manufacturing side of return.—W. B. McL., 18/7/93. The Gaoler, Dubbo.

Herewith returns with alterations; figures marked incorrect, I cannot make them any more or less, or in the manner that you make them.—J. BOYDEN, Gaoler, 26/7/93. The Superintendent, Prison Industries.

H.M. GAOL, DUBBO.—MAT DEPARTMENT.

RETURN showing the extent of the Manufacture of Mats in Her Majesty's Gaol, Dubbo, during the years 1891 and 1892.

No. of Mats.	Description.	MANUFACTURED.				Total Value.	No. of Mats.	How Distributed.	SOLD, &c.				Total Value.
		Weight.	Rate.	Labour.	Material.				Weight.	Labour.	Material.		
119	Diamond backs	1083	9d.	£ s. d. 18 6 10½	£ s. d. 21 2 10½	£ s. d. 39 9 9	48	Darlinghurst Gaol	lb. 511	£ s. d. 8 10 4	£ s. d. 10 2 11	£ s. d. 18 18 3	
							53	Sold to private storek'p'rs	400½	0 0 6½	0 18 1	10 4 7½	
52	Super plain	758½	1/-	21 16 10½	10 1 4½	38 11 3	17	Darlinghurst	217	6 6 7	4 10 5	10 17 0	
							18	Sold to private storek'p'rs	345	9 15 10	7 9 2	17 18 0	
	24 letters on 3 mats.	..	..	0 13 0	..	..	7	24 letters on 3 mats	..	0 13 0	..	..
26	Super border	410½	1/2	15 12 4½	8 13 6½	24 5 11	12	Dubbo Gaol	130½	4 17 10½	2 14 4½	7 12 3	
							1	Sold to private storek'p'rs	185	6 18 0	3 17 7	10 16 10	
5	Do. fancy out sizes	166½	1/5	8 6 3	3 9 3½	11 15 6½	1	Bathurst Gaol	86	4 6 0	1 15 10	6 1 10	
							1	Sold to private storek'p'rs	54½	2 14 6	1 2 8½	3 17 2½	
24	Sennett, coarse	86½	1/-	2 10 5½	1 16 0½	4 6 6	10	Do do	77	2 4 11	1 12 1	3 17 0	
1	Do super	4½	1/6	0 4 10½	0 1 10½	0 6 9	..		..	..	..	..
227		..	..	67 10 8½	51 4 11½	118 15 8½	173		..	55 14 4	43 2 8	98 17 0

Synopsis :-

Mats on hand on 31st December, 1890	£46 14 10
Manufactured, 1891 and 1892, as above	118 15 8½
	£165 10 6½
On hand, 31st December, 1892	66 13 6½
	£98 17 0

The Comptroller-General of Prisons, Sydney.

JAMES BOYDEN, Gaoler.

Memorandum.

Department of Prisons, N.S.W., Comptroller-General's Office, Sydney, 29 June, 1893.

Be good enough to furnish a Return showing the extent of the manufacture of mats in the Gaol under your charge during the years 1891 and 1892, the number and description of the mats made, and the distribution of them.

The value of labour and material should also be shown.

GEORGE MILLER,
Comptroller-General.

The Gaoler, Young.

Return attached.—T.G.A., Young Gaol, 1/7/93.

H.M. GAOL, YOUNG.

RETURN showing Mats Manufactured during the Years 1891 and 1892.

Description of Mat.	Number.	Weight.	Material.	Labour.	Disposal.
Sennett	1	3½	£ s. d. 2 6	£ s. d. 5 0	Sold.
Superfine frame, plain	1	9	10 9	1 1 6	do
Do lettered	1	15	15 3	1 10 6	do
Do plain	1	3	1 0 8	2 1 4	do
Do lettered	1	35	14 2	1 8 4	do
Do do	1	42	1 10 0	3 0 0	do
Do plain	5	37	1 5 10	2 11 8	do
Do do	5	90	19 10	1 19 7	do
Do lettered	1	48	7 3	14 5	do
Do do	1	20½	6 6	12 10	do
Do plain	2	21½	8 3	13 5	do
Do lettered	1	12	1 8	3 3	do
Diamond back, bordered	1	6½	..	..	..
			£ 8 3 8	16 3 10	

N.B.—Since I took charge (April, 1891) no mats or matting have been manufactured for stock.

The Comptroller-General of Prisons,

THOMAS G. ADAMSON, Gaoler, 1/7/93.

Tamworth

MATS made and sold during 1891 and 1892 :—

Tamworth Gaol, 5 July, 1893.

Mats made in 1891.	Mats sold in 1891.	Mats made in 1892.	Mats sold in 1892.
Plain brush..... 112	Plain brush..... 43	Plain brush..... 58	Plain brush..... 19
Bordered brush..... 0	Bordered brush..... 0	Bordered brush..... 0	Bordered brush..... 0
Fancy thrum..... 0	Fancy thrum..... 1	Fancy thrum..... 3	Fancy thrum..... 0
Lettered thrum..... 4	Lettered thrum..... 4	Lettered thrum..... 2	Lettered thrum..... 1
Plain thrum..... 0	Plain thrum..... 0	Plain thrum..... 1	Plain thrum..... 1
116	48	64	21

NOTE.—Of the surplus of the mats made during 1891 and 1892 over those sold in those two years, the unsold balance were taken into stock, and portions of them sent to Darlinghurst Gaol.

Value of Material of Mats made in 1891.	Value of Labour for Mats made in 1891.	Value of Material of Mats made in 1892.	Value of Labour for Mats made in 1892.
£ s. d. 22 4 9	£ s. d. 30 0 6	£ s. d. 6 18 9½	£ s. d. 11 5 2½

The Comptroller-General of Prisons, Sydney.

DONALD McLEAN,
Gaoler.

Number and weight of the various kinds of mats manufactured; also the same with regard to the sales should be furnished.—W. B. McL., 18/7/93. The Gaoler, Tamworth.

The information required is on the attached form.—D. McL., 21/7/93. The Superintendent of Prison Industries.

RETURN showing number and weight of Mats made and sold during 1891 and 1892.

Tamworth Gaol, 22 July, 1893.

Number and weight of Mats made in 1891.				Number and weight of Mats sold in 1891.			
		cwt.	qr. lb.			cwt.	qr. lb.
112	Plain brush (assorted sizes), weighing ...	11	0 17½	43	Plain brush (assorted sizes), weighing ...	2	2 9
4	Lettered thrum do do	0	2 21	1	Fancy thrum (No. 6) do	0	0 14
				4	Lettered thrum (assorted) do	0	2 21
116		Cwt.	11 3 10½	48		Cwt.	3 1 16

Number and weight of Mats made in 1892.				Number and weight of Mats sold in 1892.			
		cwt.	qr. lb.			cwt.	qr. lb.
58	Plain brush (assorted sizes), weighing ...	3	3 24½	19	Plain brush (assorted sizes), weighing ...	1	1 18½
3	Fancy thrum do do	0	1 8	1	Lettered thrum (out size) do	0	0 25
2	Lettered do do	0	1 9	1	Plain do do do	0	0 25½
1	Plain do (out size) do	0	0 25½				
64		Cwt.	4 3 11	21		Cwt.	1 3 13

The Superintendent of Prison Industries,
Office of the Comptroller-General of Prisons, Sydney.

DONALD McLEAN,
Gaoler.

RETURN showing the Manufacture and Distribution of Mats at Her Majesty's Gaol, Armidale, during the years 1891 and 1892.

No. of Mats.	Description.	MANUFACTURED.					SOLD, &c.						
		Weight		Labour.	Material.	Total Value.	No. of Mats.	How disposed of	Weight.		Total Value.		
		lb.	s. d.						lb.	s. d.			
87	Plain brush.....	512½	0 9	10 13 9½	8 10 7½	19 4 5	104	To storekeepers..	671	0 9	14 7 1	10 18 2	25 3 3
1	Bordered brush.....	0	0 10	0 3 0	0 2 0	0 5 0	75	By tender.....	481	0 6	4 0 2	8 0 4	12 0 6
14	Plain thrum (lettered).....	309¾	1 0	10 14 2½	5 2 11	20 13 10½	1	To storekeepers..	0	0 10	0 3 0	0 2 0	0 5 0
1	Bordered thrum.....	10½	1 2	0 8 9	0 3 6	0 12 3	15	By tender.....	4	0 6	0 0 8	0 1 4	0 2 0
							15	To storekeepers..	326	1 0	15 0 2	6 3 4	21 3 6
							1	By tender.....	15	0 8	0 5 0	0 5 0	10 0 0
							3	To storekeepers..	32	1 12	1 0 8	0 10 8	1 17 4
							5	By tender.....	52	0 8	0 17 4	1 17 4	1 14 8
				26 16 0	13 10 9½	40 15 0½					36 0 1	26 16 2	62 16 3

Mats on hand, 31st December, 1892—N

The Comptroller-General of Prisons, Sydney.

HENRY GOVERS, Gaoler.

MATTING manufactured by the Mats Department, H.M. Gaol, Darlinghurst, during the years 1891 and 1892, and how disposed of.

	Manufactured.					How disposed of.											
						Government.					Trade.						
	Rolls.	Yards.	Labour.	Material.	Total.	Rolls.	Yards.	Labour.	Material.	Total.	Rolls.	Yards.	Labour.	Material.	Gross Value.	Discount.	Net Value.
1891.																	
Plain matting, at 2s. per square yard	351½	14,483½	£ 17 5	£ 9 7	£ 27 0	131	5,324	£ 11 4	£ 16 8	£ 28 0	175	3,395	£ 14 2	£ 15 10	£ 30 0	£ 19 0	£ 11 0
Border matting, at 2s. 1d. per square yard	133½	6,434	370 6 4	299 17 10	670 4 2	27	1,126	65 13 8	51 12 2	117 5 10	146	5,218	304 7 8	239 3 2	543 10 10	54 7 1	489 3 9
Sundries—Comprising cricketing material, repairs, binding, cutting, &c.	..	..	189 18 5	78 4 3	267 17 8	..	..	..	..	..	..	..	189 18 5	78 4 3	267 17 8	26 13 9	241 1 11
1892.																	
Plain matting, at 2s. per square yard	338½	15,536½	923 15 11	659 17 1	1,583 13 0	172	4,993	231 5 2	203 0 10	434 5 0	172½	9,095	530 10 10	378 19 2	909 10 0	90 19 0	818 11 0
Border matting, at 2s. 1d. per square yard	155	6,199½	360 16 1	284 19 6	645 5 7	30	1,187	69 4 10	54 8 1	123 12 11	100	3,486	203 7 0	159 15 6	363 2 6	36 16 3	326 16 3
Sundries—Comprising cricketing material, repairs, binding, cutting, &c.	..	..	250 13 7	117 5 11	367 19 6	..	..	..	..	..	..	..	250 13 7	117 5 11	367 19 6	36 15 11	331 3 7
	998½	42,053½	2,937 2 0	2,046 14 2	4,983 16 11	360	12,630	736 15 0	635 17 9	1,272 12 0	593½	26,194	1,968 6 8	1,323 3 10	3,291 10 6	829 8 0	2,962 7 6

NOTE.—We are the only manufacturers in the Colony of matting.

H. FORSTER,
Overseer.

W. B. M'L.

MATS manufactured by Mat Department, H.M. Gaol, Darlinghurst, during the years 1891 and 1892, and how disposed of.

	Manufactured.					How disposed of.											
						Government.					Trade.						
	No.	Weight.	Labour.	Material.	Total.	No.	Weight.	Labour.	Material.	Total.	No.	Weight.	Labour.	Material.	Gross Value.	Discount.	Net Value.
1891.																	
Gd. rope yarn*	8	6	0 3 0	0 3 0	0 6 0	91	1,794	£ 22 8 0	£ 22 8 0	£ 44 17 0	..	..	..	..	..	..	..
1s. foot wool border*	843	2,626	71 2 5	71 2 5	142 16 10	136	482	13 1 1	13 1 1	26 2 2	920	2,819	70 7 0	70 0 11	132 13 11	16 5 6	117 8 6
1s. 6d.*	38	681	34 1 0	17 0 6	51 1 6	12	307	19 17 0	9 18 0	29 15 6	23	256	12 16 0	6 8 0	10 4 0	1 18 5	17 5 7
1s. 9d.*	1	12	0 10 6	0 10 6	1 1 0	13	23	1 0 2	1 0 1	2 0 3	..	..	..	..	..	..	..
9d.	882	11,344	259 19 4	165 8 8	425 8 0	518	6,310	144 12 1	92 0 6	236 12 6	2	18	0 8 3	0 5 3	0 13 6	0 1 4	0 12 2
10d.	72	475	11 17 6	7 18 4	19 15 10	12	100	2 10 0	1 13 4	4 3 4	60	375	9 7 0	6 5 0	15 12 6	1 11 3	14 1 8
Sennet.	59	301	13 0 8	6 10 4	19 11 0	30	137	4 11 4	2 5 8	6 17 0	23	144	4 16 0	2 8 0	7 4 0	0 14 6	6 9 7
1s. lb.	339	5,070	139 4 0	94 12 0	233 16 0	322	4,801	160 0 8	80 0 4	240 1 0	..	..	..	..	..	..	..
Letters	..	..	30 19 3	10 16 6	41 15 9	..	..	30 19 3	10 16 6	41 15 9	..	..	..	..	..	..	..
1s. 2d.	90	2,126	79 15 0	44 5 4	124 0 4	50	1,549	58 1 9	32 5 5	90 7 2	..	..	..	..	..	..	..
Letters	..	..	3 15 0	1 5 0	5 0 0	..	..	3 15 0	1 5 0	5 0 0	..	..	..	..	..	..	..
1s. 3d.	3	40	1 10 0	1 0 0	2 10 0	4	23	1 1 9	0 14 6	1 16 3	..	..	..	..	..	..	..
	2,380	23,377	695 17 8	420 12 7	1,116 10 3	1,200	15,028	462 1 7	267 12 4	729 13 11	1,030	3,612	103 14 9	91 13 2	195 7 11	19 10 10	175 17 1
1892.																	
Gd. rope yarn*	15	485	5 8 9	5 8 0	10 17 6	136	2,130	26 12 6	26 12 6	53 5 0	..	..	..	..	..	..	..
1s. ft. wool border*	10	54	1 7 0	1 7 0	2 14 0	8	38	0 19 0	0 19 0	1 18 0	6	80	0 15 0	0 15 0	1 10 0	0 3 0	1 7 0
1s. 1d.*	1,032	3,023 3	81 17 7	81 17 7	163 15 2	133	424	11 9 8	11 9 8	22 10 4	788	2,238	60 12 3	60 12 3	121 4 6	12 2 5	109 2 1
1s. 6d.*	34	653	32 13 0	16 6 6	48 19 6	24	403	20 3 0	10 1 6	30 4 6	13	267	13 7 0	6 13 6	20 0 6	2 0 0	15 0 6
1s. 9d.*	21	107	4 13 8	4 13 7	9 7 3	4	26	1 2 9	1 2 9	2 5 6	13	79	3 9 2	3 9 1	6 18 3	0 13 10	6 4 5
2s.*	3	94	7 1 0	2 7 0	9 8 0	6	217	18 10 6	6 3 6	24 14 0	..	..	..	..	..	..	..
1s.	692	9,053	301 15 4	150 17 8	452 13 0	474	7,510	250 6 8	125 3 4	375 10 0	73	1,339	44 12 8	22 6 4	66 19 0	6 13 10	60 5 2
Letters	..	..	25 10 6	8 6 0	33 16 6	..	..	13 1 3	4 0 3	17 7 6	..	..	12 5 8	4 1 1	16 6 9	1 12 8	14 14 5
9d.	1,052	10,723	245 14 9	156 7 6	402 2 3	612	7,216	185 7 4	105 4 8	270 12 0	199	1,245	28 10 8	18 3 1	46 13 9	4 13 4	42 0 5
10d.	1	7	0 3 6	0 2 4	0 5 10	..	..	..	..	..	..	..	..	..	..	..	..
1s. 2d.	45	806	30 4 6	16 15 10	47 0 4	55	1,013	37 19 9	21 2 1	59 1 10	12	222	8 6 0	4 12 6	12 19 0	1 5 11	11 13 1
Letters	..	..	2 1 3	0 13 9	2 15 0	..	..	0 13 6	0 4 6	0 18 0	..	..	1 7 9	0 9 3	1 17 0	0 8 8	1 13 4
1s. 3d.	9	213	7 19 9	5 6 8	13 6 3	2	31	1 3 3	0 15 6	1 18 9	7	182	6 16 6	4 11 0	11 7 6	1 2 9	10 4 9
Letters	..	..	2 2 3	0 13 9	2 16 0	..	..	..	..	..	..	..	2 2 3	0 13 9	2 16 0	0 5 7	2 10 5
1s. 5d.	3	104	4 15 4	2 12 0	7 7 4	..	..	..	..	..	..	..	4 15 4	2 12 0	7 7 4	0 14 9	6 12 7
Letters	..	..	1 7 0	0 8 9	1 15 9	..	..	..	..	..	..	..	1 7 0	0 8 9	1 15 9	0 3 7	1 12 2
Sennet, 1s. lb.	92	487½	18 5 0	8 2 6	24 7 6	94	583	19 12 0	9 16 0	29 8 0	21	85	2 16 8	1 8 4	4 5 0	0 8 6	3 16 6
	2,929	25,763	771 0 2	462 7 0	1,233 7 2	1,543	19,026	567 1 2	323 1 3	890 2 5	1,138	5,791	191 4 5	130 15 11	322 0 4	32 3 10	289 16 6

NOTE.—We are the only manufacturers in the Colony of the articles marked.*

H. FORSTER,
Overseer.

W. B. M'L.

ABSTRACT of Manufactures and Sales of Coir Matting and Mats, Darlinghurst and minor Gaols, during years 1891 and 1892.

LABOUR PROFIT ONLY.

Gaols.		Manufactures.		Gaols.		Sales.									
		£	s. d.	£	s. d.			£	s. d.	£	s. d.				
Darlinghurst	To matting	2,937	2 9	2,937	2 9	Darlinghurst	By sales	Govt. Depts.	736	15 0	2,705	1 8			
										Trade			1,968	6 8	
Darlinghurst	To mats	1,466	17 10	1,618	14 7	Darlinghurst	By sales	Govt. Depts.	1,029	2 9					
Armidale	"	26	16 6							Trade			294	19 2	
Dubbo	"	67	10 8½					Armidale	"	"			36	0 1	
Tamworth	"	41	5 8½					Dubbo	"	"			55	14 4	
Young	"	16	3 10					Tamworth	"	"			23	16 1	
						Young	"	"	16	3 10					
						Total sales.....				4,160		17 11			
						By unsold matting and mats.....						394		19 5	
Total.....		£ 4,555		17 4		Total				£ 4,555		17 4			

H.M. Gaol, Parramatta—Mat Department.
Price List, 1889.

Mats.	Size.	Feet. Inch.	Feet. Inch.	Average Weight.	Cost per lb.	Average Price.
	No.			lb.	£ s. d.	£ s. d.
Centennial Brush	1	2 0	1 2	3½	.....	0 2 6
	2	2 3	1 4	4½	0 0 6	0 2 9
	3	2 6	1 6	5½	.....	0 3 3
	4	2 9	1 8	6½	0 0 6	0 4 0
	5	3 0	1 10	7½	.....	0 5 0
	6	3 3	2 0	8½	0 0 6	0 5 9
	7	3 6	2 2	9½	.....	0 6 6
Diamond-back Brush (Subject to 10 per cent. discount.)	1	2 0	1 2	4	0 0 9	0 2 9
	2	2 3	1 4	5	.....	0 3 6
	3	2 6	1 6	6	0 0 9	0 4 0(?)
	4	2 9	1 8	7	.....	(?)
	5	3 0	1 10	8	0 0 9	(?)
	6	3 3	2 0	9	.....	(?)
	7	3 6	2 2	10	0 0 9	(?)
Wool-bordered Slips	Plain.	1	2 6	1 0	} ls. per sq. foot.	(?)
		2	2 9	1 0		
		3	3 0	1 0		
	Fancy.	1	2 6	1 0		
		2	2 9	1 0		
		3	3 0	1 0		

Document mutilated.

Superfine Frame, special, made to order any size or shape, at	£	s.	d.	per square foot.
" " " with coloured border	0	1	0	"
Sennet Mats, special, made to order	0	0	10	"
Housemaids' Kneelers	0	1	6	each.
Shaded Letters	0	1	0	"
Plain Letters	0	0	9	"

Ten per cent. deducted from all articles at 9d. per lb. and over.

Mats made to any shape or size with names, numbers, designs, monograms, &c., plain or shaded.
Letters or numbers.

J. J. DANKS, Foreman,
Mat Department.

No. 66.

Minute by The Under Secretary of Justice.

SUBMITTED. To assist the Minister in the consideration of this matter, I asked the Comptroller-General of Prisons to furnish a statement showing (1) the extent of the manufacture of mats in the gaols of the Colony during 1891 and 1892, with the number and description of the mats made; (2) the distribution of the goods sold; and (3) whether the industry is a paying one to the Government. Mr. Miller's report and the statements of the Superintendent of Prison Industries deal with the matter fully. Attention is also invited to the *procès* dated 13th March last, giving the particulars of the complaints made by Armstrong and Son, and the facts bearing upon them.
11/8/93.

A.C.F.

I have inquired into this complaint, and have considered the report of the Comptroller-General of Prisons and his officers in reference thereto. Messrs. Armstrong & Co. seem to be mistaken in ascertaining that they have been undersold by the gaol authorities. I find that the terms of the arrangement embodied in the circular referred to have been faithfully adhered to, and Messrs. Armstrong & Co. may rest assured that it will continue to be so adhered to.—R.E.O'C., 17/8/93.

Forwarded for the information of the Comptroller-General of Prisons—B.C., A.C.F., 18/8/93.
Read.—G.M., 25/8/93.

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No. 67.

The Under Secretary of Justice to J. Armstrong and Son.

Gentlemen,

Department of Justice, Sydney, 21 August, 1893.

Referring to your letter of the 17th June last and previous correspondence, complaining that the sale of prison-made mats enters into unfair competition with your business, I am directed to inform you that the Minister of Justice has written a minute upon the subject, of which the following is a copy:—

"I have inquired into this complaint, and have considered the reports of the Comptroller-General of Prisons and his officers in reference thereto. Messrs. Armstrong and Son seem to be mistaken in asserting that they have been undersold by the gaol authorities. I find that the terms of the arrangement embodied in the circular referred to have been faithfully adhered to, and Messrs. Armstrong may rest assured that it will continue to be so adhered to."

I have, &c.,

ARCH. C. FRASER,
Under Secretary.

No. 68.

J. Armstrong and Son to The Minister of Justice.

Dear Sir,

Mat Manufactory, 114, Riley-street, Sydney, 23 August, 1893.

We beg most respectfully to state in answer to yours of the 21st instant, that there seems to be some misconception of our correspondence to you for the last twelve months, and that you have not had the same laid fully before you. Our contention is, and has been, that the Comptroller of Prisons is not justified in supplying the trade, after sending circulars to the trade, that in the future he would not do so, and after ceasing to do so for two years commenced again, and states he is not supplying the public in competition with us, but that he is only supplying the trade and not the public; we say that it is only an indirect way of supplying the public to the advantage of a few shopkeepers, and loss to us as manufacturers, who have invested a considerable amount of money in machinery, looms, &c., and we believe if the whole of the correspondence is laid before you, that you will see how unjustly we have been dealt with in the matter for the last twelve months by the Comptroller of Prisons, and our hands thrown out of employment by prison competition, which we trust the Government will put a stop to at once.

We have, &c.,

J. ARMSTRONG AND SON.

May await return of papers from Prisons Department.—T.E.M'N., for U.S., 25/8/93.

No. 69.

The Under Secretary of Justice to J. Armstrong and Son.

Gentlemen,

Department of Justice, Sydney, 25 August, 1893.

I have the honor to acknowledge your letter of the 23rd instant further respecting the mat making industry in the gaols of the Colony, and to inform you that the same will receive due consideration.

I have, &c.,

ARCH. C. FRASER,
Under Secretary.

No. 70.

J. Armstrong and Son to T. J. Houghton, Esq., M.P.

Dear Sir,

Mat Manufactory, 114, Riley-street, Sydney, 27 September, 1893.

In yours of the 7th instant you stated that you thought it best to see the Comptroller of Prisons in reference to our grievance of prison competition and underselling us in the market. We think that would be best, for he must either be cognizant of the fact, or he has been deceived for some time by his subordinates so as to keep their billets, but if such is the case, and that he may not be deceived any longer, we wish you to lay the following facts before him, as they are indisputable, and we do not wish to be driven to publish the same through the Press of the Colony, which we must do unless this unjust competition is stopped at once. We beg to state that we have been in business for upwards of fifteen years, and during the whole of that time the gaol authorities have been doing their very best to come into competition with us; in fact, in 1888 and 1889 the prison report showed, as seen by you, a loss of four thousand pounds chiefly by prison competition with us; but for the last twelve months a cunningly devised plan of underselling us has been adopted to take the trade from us, to our loss, and also to our employes, and no firm can withstand such unjust proceedings. For example say that the gaol in manufacturing super frame brush mats for the last twenty years have made a good and a durable article which would weigh not less than 2½ lb. to the square foot, and sold at one shilling per lb. less discount, that a mat four feet by three feet would be 30s. less the ten per cent. discount, please observe that we made and do make our goods the same price, but to undersell us, the gaol for the last twelve months have been supplying the trade with mats at 2 lb. to the square foot, thus reducing the price to the shopkeeper 6s. below us. Now as it takes the same amount of time to make the light mat as the former, also the same amount of material as the face is simply cut to a lower gauge, and what is cut off is waste. Now you see by this plan the mat as stated above is sold for 6s. less than our price, and the former gaol price, although the price per lb. is the same, and the loss falls upon the prison earnings—thus, if a prisoner makes 1½ mats per week as above, which he can easily do, the loss in his earnings to the public is 9s. per week, and in the year for the number of mats made a loss to the State of many hundred pounds, for the benefit of a few shopkeepers who pocket the amount, knowing that we cannot supply goods at that price and pay for labour, you will see that so long as prison labour is permitted to compete with free labour in any trade, capital and honest industry have no chance of employment, and we shall deeply regret to be compelled to

to help put out the present Government by bringing these indisputable facts before the electors of the Colony, but having lost hundreds of pounds during the last twelve months by this underselling mode of prison competition, we think that no honest man or any one with a sense of justice can blame us for doing so; for surely the gaol authorities ought not to be allowed to carry on as they like by giving money away as stated by us, as the facts can be proved by the gaol books and invoices sent to the shopkeepers. We trust that the Comptroller of Prisons will also see that this statement is correct, by comparing in the prison books, the weight and size, also price of mats sold to the Government Establishments, and the difference in those sold to the trade the difference will be in the latter, loss in prison earnings to the tax-payer.

We have, &c.,

J. ARMSTRONG AND SON.

Left by Mr. Houghton, M.P., who asked me to consider the statements made.—G.M., 3/10/93.
Letter to Mr. Houghton, M.P.

No. 71.

J. Armstrong and Son to T. J. Houghton, Esq., M.P.

Dear Sir,

Mat Manufactory, 114, Riley-street, Sydney, 4 October, 1893.

We thank you very much for the trouble you are taking to obtain justice for us. The prison price list is the same as ours, but the way we are undersold is by the mats being made lighter than formerly, and lighter than those at present supplied to Government establishments, that is to say in super frame brush and Sennett mats. Say, for example, that all Government establishments require a good durable article, is it not feasible that the public require the same description of mat; yet the trade, finding that they can get a lighter mat made at the prison, give orders to that effect, and the public are supplied with an inferior article that will only last half the time it should do, at the expense of the prison earnings. This is not easy for the Comptroller to discover, except in the selling price. In the first place, in the making of a mat it has to pass through several hands, viz., the splicer, the baller, the mat-maker, the binder, and the shearer. Now, if the mat is made lightweight, and the size is 4 ft. x 3 ft., the price less than ours is 6s., and the loss falls upon the whole of the earnings of the men who have contributed to make the mat, and can only be shown in the annual report of loss in prison earnings to the advantage of the trade who go to buy in the cheapest market, and we therefore suffer by this unjust competition.

Perhaps, if you could forward these remarks to the Comptroller, it will help him to elucidate the truth from his subordinates.

Again thanking you.

We are, &c.,

J. ARMSTRONG AND SON.

The Comptroller General of Prisons,—

Dear Sir,

At Mr. Armstrong's request I forward this communication for your information. It might be read in conjunction with the letter I left you on Tuesday afternoon.

Yours, &c.,

T. J. HOUGHTON, 5/10/93.

Superintendent of Prison Industries. For report in connection with papers now under reference to him.—G.M., B.C., 9/10/93.

No. 72.

The Comptroller-General of Prisons to T. J. Houghton, Esq., M.P.

Department of Prisons, New South Wales, Comptroller-General's Office,

Sir,

Sydney, 13 October, 1893.

Referring to the letters of Messrs. Armstrong and Son, dated respectively, 27th September ultimo and 4th October instant, addressed to you and forwarded by you to me, I have the honor to subjoin, for your information, an extract from a report of the Superintendent of Prisons Industries upon the representation made by Messrs Armstrong and Son, that this department is underselling them in the market.

"The super frame mat (the class of mat in question) supplied to the trade is a very superior mat, and is manufactured strictly in accordance, both in quality and weight, with mats first introduced under the supervision of Overseer B. J. Danks, in October, 1887. I may here state that Mr. Danks was appointed an Overseer in mat department shortly after the resignation of Mr. J. Armstrong (now of the firm of Armstrong and Son) who had held that position in Darlinghurst Gaol for about twelve years. There have not been any attempts to undersell Messrs. Armstrong and Son. With reference to the loss said to have been sustained by Messrs Armstrong and Son during the last twelve months, viz.:—Several hundreds of pounds by gaol competition, I beg to state the gross value of the mats in question supplied to the trade from Darlinghurst Gaol during the whole of the year 1892, amounts to only £121 9s. 4d. I am unable to understand therefore how Messrs. Armstrong and Son could have lost several hundreds of pounds as stated."

I have further to state that, in view of the improper and offensive terms in which Messrs. Armstrong and Sons' letter of the 27th September, is couched, I must decline to take further notice of their communications. The Minister of Justice has already been placed in possession of the facts as regards the mat-making industry at Darlinghurst Gaol.

I have, &c.,

GEORGE MILLER,

Comptroller-General.

[Enclosure.]

Department of Prisons, N.S.W.,

Comptroller-General's Office, Sydney, 12 October, 1893.

Sir,

I have the honor to report, for information of Comptroller-General of Prisons, *re* allegations of Messrs. Armstrong and Sons.

1. The super frame mat (the class of mat in question) supplied to the trade is a very superior mat, and is manufactured strictly in accordance, both in quality and weight, with mats first introduced under the supervision of Overseer B. J. Danks in October, 1877. I may here state that Mr. Danks was appointed an overseer in mat department shortly after the resignation of Mr. J. Armstrong (now of the firm of Messrs. Armstrong and Sons) who had held that position in Darlinghurst Gaol for about twelve years.

2. There has not been any attempt to undersell Messrs. Armstrong and Sons.

3.

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3. With reference to the loss said to have been sustained by Messrs. Armstrong and Sons during the last twelve months, viz., several hundreds of pounds by gaol competition, I beg to state the gross value of the mats in question supplied to the trade from Darlinghurst Gaol during the whole of the year 1892, amounts to only £121 9s. 4d. I am unable to understand, therefore, how Messrs. Armstrong and Sons could have lost several hundreds of pounds as stated.

W. B. M'JAREN,
Superintendent of Prison Industries.

The Comptroller General of Prisons.

No. 73.

E. Darnley, Esq., M.P., to The Minister of Justice.

Dear Sir,

Legislative Assembly, N.S.W., Sydney, 28 November, 1893.
Please find enclosed letter *re* "prison labour in competition with free labor." Kindly inform me if it is true or not, as, if not, the firm advertising in the manner shown are doing the Government a gross injustice.

Yours, &c.,
E. DARNLEY.

[Enclosure.]

Dear Sir,

64, Brisbane-street, Sydney, 21 November, 1893.
Seeing that the Honorable Minister of Works stated to you that the Government would not for one moment compete with prison labour against free labour, I enclose for your information an advertisement in the Public Notice column of last Saturday's *Sydney Morning Herald*, and in doing so, state that I was in the employ of that firm for upwards of nine years, but for the last twelve months, with many others, have been thrown out of employment through prison competition with free labour, and those employed at the present time have only two days work per week for many months past. So much for a Government who profess to befriend the working classes and encourage colonial industry. Perhaps you will kindly forward this communication to the Honorable Minister, and open his eyes upon the subject to the injury being done by prison labour being in competition with free labour, and by doing so kindly oblige,

Yours faithfully,
G. READ,
late Employee of the Firm.

E. Darnley, Esq., M.L.A.

[Sub-Enclosure.]

HALL-DOOR MATS at Wholesale Prices.—In consequence of the Government competing against us by prison labour, we are compelled to supply the public at wholesale prices. See the quality of our goods at the Technological Museum. An Design or Pattern made to order.
J. ARMSTRONG AND SON, Manufacturers,
114, Riley-street, Sydney.
Established in Sydney, 1866.

The Comptroller-General of Prisons with reference to previous papers.—B.C., 29th November, 1893.
T.E.M'N. (for U.S.).

I do not know that I can add anything to what I have already said in previous reports to the Minister, which are with the papers that were sent to the Department of Justice the day before yesterday. My impression is, that Armstrong & Son think that by constantly hammering away at the free *v.* prison labour question, they may succeed in stifling the mat-making industry at Darlinghurst, in like manner as they succeeded in stopping that industry at Parramatta Gaol, and thus increase the already very great difficulty which this Department has to contend with in finding suitable employment for the thousands of prisoners who are sentenced to various terms of hard labour in our gaols. It is not unlikely that the letter from "G. Read" has been written at the instigation of Armstrong and Son.—G.M., 1/12/93.

The Under Secretary of Justice.—B.C. Submitted with reference to the Minister's minute of 17th August last. (See also 93-18,731).—T.E.M'N. (for U.S.), 5/12/93.

Inform that the statements in the letter referred to are not correct, and state facts.—R.E.O'C., 8/12/93. Forwarded for the information of the Comptroller-General of Prisons.—B.C., 3rd January, 1894. T.E.M'N. (for U.S.). Seen.—G.M., 4/1/94.

No. 74.

The Under Secretary of Justice to E. Darnley, Esq., M.P.

Sir,

Department of Justice, Sydney, 29 November, 1893.
I have the honor, by direction of the Minister of Justice, to acknowledge the receipt of your letter of the 28th instant, forwarding a communication addressed to you by Mr. G. Read, alleging that mats manufactured by prison labour compete with private enterprise, and to inform you that the same will receive due consideration.

I have, &c.,
ARCH. C. FRASER,
Under Secretary.

No. 75.

The Under Secretary of Justice to E. Darnley, Esq., M.P.

Sir,

Department of Justice, Sydney, 13 December, 1893.
Referring to your letter of the 28th ultimo, forwarding a communication from Mr. G. Read upon the subject of the manufacture of mats in gaols, I have the honor, by direction of the Minister of Justice, to inform you that from reports furnished by the Comptroller-General of Prisons, it would appear that the statement made is not correct, that Messrs. Armstrong and Son seem to be mistaken in asserting that they have been undersold by the Gaol authorities, and that the terms of the arrangement made between that firm and the Prisons Department, 1887, have been faithfully adhered to by the latter, and will continue to be so adhered to.

I am to add that under the arrangement referred to the Prisons Department bases the charges for certain classes of mats upon those fixed by the firm named, and allows the same discount to the trade on the class of mats which they manufacture, and the Department only sells to the trade, not to the public, while Messrs. Armstrong and Son may sell to whom they please.

I have, &c.,
ARCH. C. FRASER,
Under Secretary.

No. 76.

Mr. G. F. Havenhand to The Minister of Justice.

My dear Sir,

36, Renny-street, Paddington, 27 November, 1893.

My attention has been drawn to the advertisement attached, which is appearing in both the metropolitan dailies. I am sure your keen sense of justice will not allow such a state of things as evidently obtains in connection with the gaol at Darlinghurst to continue. It seems to me that if the advertisers represent the matter faithfully you have only to know it to remedy what must reflect upon the administration of this part of your Department.

I have, &c.,

G. F. HAVENHAND.

[Copy of advertisement attached.]

The Comptroller-General of Prisons in connection with previous papers. B.C., 29th November, 1893.—T.E.M'N. (for U.S.). Will the Inspector-General of Police be good enough to favour me with a confidential report as to the position of the writer of this letter (G. F. Havenhand) B.C.—T.E.M'N. (for U.S.) 15/12/93. The information required attached.—E.F. The Under Secretary of Justice, B.C., 29/12/93.

No. 3 Police Station, Sydney, 18th December, 1893.—Sergeant J. E. Sawtell begs to report for Inspector Bremner's information that he has seen Henry Armstrong, of 36, Renny-street, Paddington, "who is a letter carrier," and who admits writing the attached letter under the pseudonym of G. F. Havenhand, in the interest of his father, J. Armstrong, of 114, Riley-street, Sydney. Mr. Armstrong, senior, who is a mat manufacturer, and who has been overseer in the mat department at Darlinghurst Gaol for a number of years, complains of the number of prisoners who are taught the trade every year and when out of gaol become a drug on the market. He also complains of the way the gaol authorities cut down the value of the mats by supplying an inferior article at the same price as his mats of similar size.—J. E. SAWTELL, sergeant. J. Bremner, Esquire, inspector.

Forwarded to Inspector-General.—G. READ. 19/12/93.

The attention of the Deputy Postmaster-General should be called to the conduct of letter-carrier Armstrong in sending a letter to this Department under an assumed name, commenting on the policy of the Department in connection with the mat-making industry at Darlinghurst Gaol.—A.C.F.

No. 77.

The Under Secretary of Justice to Mr. G. F. Havenhand.

Sir,

Department of Justice, Sydney, 29 November, 1893.

I have the honor to acknowledge the receipt of your letter of the 27th instant, with respect to the price alleged to be charged for mats manufactured by prison labour, and to inform you that the same will receive due consideration.

I have, &c.,

ARCH. C. FRASER,

Under Secretary.

No. 78.

The Under Secretary of Justice to The Deputy Postmaster-General.

Sir,

Department of Justice, Sydney, 23 December, 1893.

I have the honor to forward for your perusal, and for any action that may be deemed desirable, the accompanying papers respecting the conduct of a letter-carrier named Henry Armstrong in writing to this Department under an assumed name, and commenting on the policy of the Department in connection with the mat-making industry at Darlinghurst Gaol.

I have, &c.,

ARCH. C. FRASER,

Under Secretary.

No. 79.

The Deputy Postmaster-General to The Under Secretary of Justice.

Sir,

Postal and Electric Telegraph Department,

General Post Office, Sydney, 5 January, 1894.

With reference to your communication of the 23rd ultimo, No. 93/18731, relative to a letter which was written by Sorter Armstrong, of this office, over the name "G. F. Havenhand," in regard to the mat-making industry at Darlinghurst Gaol, I am directed to inform you that Armstrong has been called upon for an explanation in the matter, and it appears that the letter was written by him in the name of his stepson, and with the latter's permission. He expresses regret for writing the letter, and promises to guard against anything of the kind in future. He bears a very good character, and Mr. Kidd thinks that the warning he has had will meet the case.

The papers which you submitted are returned herewith.

I have, &c.,

S. H. LAMBTON.

Submitted might be referred to the Comptroller-General of Prisons for his information.—A.C.F., 8/1/94. Approved—T.M.S., 11/1/94. The Comptroller-General of Prisons.—B.C., 11 January, 1894.—T.E.M'N. (for U.S.) Seen.—G.M., 15/1/94.

1894.

NEW SOUTH WALES.

FIRE BRIGADES' BOARD, SYDNEY.

(TENTH ANNUAL REPORT.)

Presented to Parliament, Pursuant to Act 47 Vic. No. 3, sec. 7.

The Chairman to The Chief Secretary.

Fire Brigades' Board, Head Quarters Fire Station,

Sir,

Sydney, 15 February, 1894.

Pursuant to "The Fire Brigades Act, 1884," section 7, I have the honor to present the Report of the Fire Brigades' Board for the Metropolitan District upon their administration during the year 1893.

I have, &c ,

CHARLES BOWN,

Chairman.

REPORT OF THE FIRE BRIGADES' BOARD FOR THE YEAR 1893.

THE Fire Brigades' Board are pleased to have the honor of reporting that the work of the Fire Department during the year 1893 has continued to be of a thoroughly satisfactory character.

The constitution of the Board remains unchanged, the biennial elections having taken place in the Board previous year.

The sum of the risks declared by the insurance companies within the metropolitan area was £61,185,715, being an increase of £2,769,770 upon the previous return. The number of contributing offices was reduced from forty-five to forty-three, the City of London Fire Insurance Company and the Union Assurance Company of London having closed their agencies in the Colony, and the Union Fire and Marine Insurance Company of New Zealand having been absorbed by the Alliance Assurance Company; while the Batavia Sea and Fire Insurance Company was the only office added to the list of contributories. [Appendix I] During last year the Hong Kong Insurance Company retired from the Colony, and the New South Wales Assurance Corporation and Pacific Fire and Marine Insurance Company went into liquidation; while on the other hand the Royal Exchange Assurance Company and the Indemnity Insurance Company of Australasia entered upon fire business here.

A contribution of £5,500 was levied upon the Companies, pursuant to sections 13 and 14 of the Act—distributed in the ratio of their amounts at risk—being equal to a tax of 2½d. per £100 of risk.

The borough of Rookwood was the only addition to the contributing municipalities, though the extension of the Act to Mosman, in the latter portion of the year, will add that to the number for the current year. The assessments of the thirty-one contributing municipalities amounted to £5,416,778, being an increase of £153,123, or of £135,938 exclusive of the additional borough of Rookwood. These figures exhibit a considerable check in the annual rate of increase hitherto maintained, which becomes more apparent when it is considered that no less than £118,614 of the total addition was in the city proper, and only £17,294 among the twenty-nine other municipalities which contributed in the previous year. It is, however, satisfactory to note that notwithstanding the unprecedented depression prevailing in all classes of property, as well as of business, there still has been an upward tendency, though in less degree than that which hitherto obtained. The contributions of the municipalities, £5,500 in all, was equivalent to 2s. 0¾d. per £100 of the assessed value of their ratable property.

The estimate of £16,500 for the maintenance of the Department was, by careful management, not exceeded; and that for the current year has been set down at a similar sum; but the projected erection of the two fire-stations mentioned below, and the increase of subsidies to Volunteer Fire Companies, added to an impost by the Postal and Electric Telegraph Department for the maintenance of telephones, and fire-alarm lines, will be an additional tax upon our resources.

Unforeseen legal delays prevented the transfer of the site provided for a fire-station in Balmain, anticipated in our last report, but it is expected that the early completion of some legal technicality on the part of the vendors will remove the only remaining obstacle to proceeding with the erection of a building.

building. The selected site is at about the highest elevation in Balmain, having the great advantage of down-hill runs for the fire appliances when called into service, and of commanding a distant view. It has a frontage of 50 feet to Darling-street by a depth of 150 feet, and is close to the town-hall, post and telegraph offices, and the main business portion of the suburb. We expect to establish the local volunteer fire company during this year in a suitable station on that site, the plans for which have already been adopted.

For North Sydney also, which, owing to its isolated position, stands in need of especial protection of the kind, the Government has been pleased to place £150 on the Estimates, in order to secure a most suitable site for the purpose, having a frontage of 39 feet 1 inch to Walker-street, with a depth of 80 feet, situated close to the Masonic Hall, and within easy reach of the main thoroughfare. On that site, if funds permit, it is hoped that a fire-station will be erected on plans similar to that at Balmain; and the St. Leonards Volunteer Fire Company established there, with a horse and hose-waggon, &c., to enable the firemen to speedily reach the more distant parts of the large district entrusted to the company's care. This municipality is supplied with water from the reservoir at Chatswood, and the pressure runs up to the high figure of 150 lb. per square inch near the sea-level. Taking this into consideration, together with the hilly character of the district, it is intended eventually to replace the more cumbersome and heavy manual engine by the lighter equipment, as being more suitable for existing conditions.

Paddington and Burwood.

It is hoped that while provision has been made for the protection of Balmain and North Sydney, the requirements of the thickly-populated eastern suburbs will not be overlooked. There is a most eligible piece of vacant Crown land at the back of the Paddington Town-hall, which we hope may be set apart for similar purposes of fire protection. Early in the year a deputation from the Municipal Council of Burwood waited upon the Chief Secretary to ask that a portion of the ground on Burwood Road, lying waste in consequence of the deviation of the railway, should be utilised for the establishment of a fire-station, and the request was favourably received. This site, however, has not yet been dedicated.

The completion and occupation of No. 3 Metropolitan Fire Brigade Station, George-street North, Circular Quay, on 25th January, 1893, were recorded in our last Report.

Proposed amendment of F. B. Act.

We are given to understand that the proposed amendment of the Fire Brigades' Act has been placed in the hands of the Parliamentary Draughtsman, and we view with satisfaction that there is, therefore, some prospect of its being submitted to Parliament this year. Among the other desirable amendments which previous reports have pointed out, that for the inclusion of the harbour waters in the area within which the Act has operation is continually forced upon our notice by the recurrence of ship fires. Notwithstanding that this class of fire is outside our jurisdiction, and no contribution is made for the protection of property afloat, the Board does not feel justified in withholding any assistance which it is possible to afford. No legislation has yet been attempted to further regulate the sale and storage of inflammable liquids, &c., and the erection of buildings.

Fires.

The number of calls received from the 1st January to the 31st December was 401; and deducting false alarms and chimney fires, the number of actual fires was 258;—less by 54 than those of the previous year. Six fires on vessels in the harbour, an exactly similar number to those of the previous twelve months, were attended, and in every instance satisfactory "saves" were effected. These were on vessels at the wharves, and therefore within reach of land fire-engines and appliances. A notable fire also occurred in the stream, inaccessible to the firemen and their extinguishing appliances, clearly demonstrating the necessity for the floating steam fire-engine, repeatedly recommended in previous reports. By the fire referred to, which occurred in Kerosene Bay on the night of the 29th May, the old training ship "Vernon," then being dismantled, was burned to the water's edge, and involved in her destruction the hulk "Golden South," which was moored close by. Again, on the 22nd July, an explosion of coal gas occurred on the barque "Argo," in Neutral Bay, by which, besides severe damage to the vessel, one life was lost, and four persons were injured. The ship had taken in a cargo of coal, and the accident was the first of the kind recorded to have occurred to a vessel laden with coal of this colony, though similar explosions have occurred in other countries.

For the purpose of dealing with ship fires, the Marine Board had their new pilot steamer "Captain Cook" fitted with a steam pump, having a capacity of 36,000 gallons per hour; and on the occasion of the above explosion she was promptly summoned from Watson's Bay, but happily her services were not required, for no fire followed the explosion.

Inquests.

The number of inquests into fires which, pursuant to the regulations under section 6, sub-section VII, the City Coroner has been moved to hold, has been five. Four of these resulted in verdicts of arson against some person or persons unknown, while that upon the fire at the "Taragon Hotel," on 6th December, concluded with the committal of the proprietor and the manager. Conviction followed, and the former was sentenced to five and the latter to three years' imprisonment. There is little doubt that a considerable number of fires in the past have been the result of incendiarism, and that these coronial inquiries are having a salutary deterrent effect, and reducing the proportion which fires of suspicious origin bear to those that result from accident. The speed with which an alarm can be telephoned to the nearest fire-station, and the rapidity with which a well disciplined and equipped body of firemen can be concentrated upon the scene of fire, render the task of an incendiary increasingly difficult; for time is not allowed for the flames to gain sufficient headway to efface the traces of his guilt.

Telephone fire alarms.

Thirteen additional telephone fire alarms have been installed during the year; in addition, the erection of six in the borough of the Glebe has been almost completed, and a number of others are in progress or contemplation. It is satisfactory to observe that the proportion of false alarms received is less than that recorded in the reports of fire departments elsewhere.

Fire Brigades.

To the Metropolitan Fire Brigade four men have been added, increasing the number to fifty-one, including the superintendent; and the 80-foot extension ladder, mentioned in last year's report as ordered from London, has been added to its equipment; the water-tower for attachment to this ladder has, however, not yet arrived. The Brigade's admirable state of discipline and effectiveness is still maintained; the officers and men have never shrunk from the service they have undertaken, but have always responded manfully when called upon. The ship fires referred to above were especially trying in consequence of the heat and density of the smoke in the holds, difficulty of access to the fires, uncertainty as to their locations

locations, and as to whether an explosion might occur at any moment. Many firemen were carried up, overcome by smoke, from the effects of which they suffered for days, but their comrades continued to battle with the flames, nothing daunted, and, as has been said, in every instance with final success. We are therefore pleased to be able to give our highest commendation to their services. On these and other occasions the volunteer firemen shared the honours with the men of the permanent brigade, those attached to stations within or close to the city boundaries promptly responding to calls to work at all city fires, including the ship fires, and the suburban companies worked well in their own districts. Their efforts are acknowledged by the Superintendent of Fire Brigades in his report, attached hereto; and he also expresses his obligation to the police, the general public, and the officers of the Water and Sewerage Department, for valuable co-operation. The expenditure in subsidies to the twenty-two Volunteer Fire Companies enumerated in Appendix V, was £2,485, an increase of £379 upon that of the previous year. In addition, horses have been provided in several instances, to enable the companies to cover longer distances and to reach fires with greater speed. The maintenance of these has of necessity caused increase of expenditure, which the Board has been called upon to provide, and the additional tax upon the funds at our disposal is considerable.

Pursuant to section 6 of the Fire Brigades Act, the Chief Secretary, on 27th January, 1893, was pleased to approve of the appointment of Mr. Alfred Webb, the Principal Foreman of the Metropolitan Fire Brigade, to be Deputy-Superintendent, to act in case of the absence or other disability of the Superintendent.

Deputy-Superintendent,
appointment of.

Other detailed and very complete information concerning all the operations of the Department is supplied in tabulated form in various appendices.

14th March, 1894.

CHARLES BOWN,
Chairman.

APPENDIX I.
INSURANCE COMPANIES.

Contributory Company.	Amount at risk, 31 Dec., 1892.	Contribution, 1893.	Contributory Company.	Amount at risk, 31 Dec., 1892.	Contribution, 1893.
	£	£ s. d.		£	£ s. d.
The Alliance Assurance Co.	1,376,842	122 15 1	The New South Wales Assurance Corporation (Ltd.)	657,646	58 12 8
Atlas Assurance Co.	433,080	39 12 3	New Zealand Insurance Co.	2,053,524	183 1 8
Australian Alliance Assurance Co.	408,358	36 8 2	North British and Mercantile Insurance Co.	1,032,693	92 1 5
Australian Mutual Fire Insurance Society	8,115,190	723 10 2	North Queensland Insurance Co. (Ltd.)	247,300	22 1 0
Batavia Sea and Fire Insurance Co.	241,153	21 10 0	Northern Assurance Co.	736,000	65 12 4
British and Colonial Insurance Co. (Ltd.)	446,639	39 16 5	Norwich Union Fire Insurance Society	2,155,983	192 4 4
Calcedonian Insurance Co.	353,407	31 10 2	Pacific Fire and Marine Insurance Co.	730,251	65 2 1
City Mutual Fire Insurance Co. (Ltd.)	3,299,599	294 3 6	Palatine Insurance Co. (Ltd.)	450,015	40 2 5
Colonial Mutual Fire Insurance Co. (Ltd.)	1,303,140	116 3 7	Phoenix Fire Office of London	1,297,723	116 14 0
Commercial Union Assurance Co.	6,183,083	551 5 0	Queensland Mutual Insurance Co. (Ltd.)	143,500	12 15 10
Cornwall Fire and Marine Insurance Co. of Launceston	350,000	31 4 1	Royal Insurance Co.	2,271,670	202 10 7
Derwent and Tamar Fire and Marine Assurance Co.	362,154	32 5 9	Scottish Union and National Insurance Co.	365,877	32 12 5
Fire Underwriters' Association of N.S.W. — for offices outside N.S.W.	383,812	34 4 4	South British Fire and Marine Insurance Co. of New Zealand	1,382,000	123 4 3
Guardian Fire and Life Assurance Co.	646,192	57 12 3	Standard Fire and Marine Insurance Co. of New Zealand	965,486	86 1 7
Hong Kong Fire Insurance Co. (Ltd.)	547,603	48 16 5	Straits Fire Insurance Co. (Ltd.)	240,000	21 7 11
Imperial Insurance Co. of London	1,333,747	118 18 2	Sun Fire Office of London	740,215	65 19 10
Lion Fire Insurance Co. (Ltd.)	234,329	20 17 10	United Insurance Co. (Ltd.)	3,589,409	320 0 3
Liverpool and London and Globe Insurance Co.	2,782,633	248 1 10	United Australian Mutual Fire Insurance Co. (Ltd.)	475,267	42 7 5
London and Lancashire Fire Insurance Co.	590,270	52 12 6	Victoria Insurance Co. (Ltd.)	1,737,100	154 17 5
Manchester Fire Assurance Co.	368,235	32 16 8	Credit by voluntary contribution of Royal Insurance Co., for risks taken over last year from the late Queen Insurance Co.		5,455 0 0
Mercantile Mutual Insurance Co.	8,673,681	773 6 0			45 0 0
Mutual Union Insurance Co. (Ltd.)	190,000	16 13 10	Totals	61,185,715	5,500 0 0
National Fire and Marine Insurance Co. of New Zealand	1,180,779	105 5 5			
Netherlands-India Sea and Fire Insurance Co.	110,000	9 16 2			

APPENDIX II.
MUNICIPALITIES.

Municipality	Assessment, 1892.	Contribution, 1893.	Municipality.	Assessment, 1892.	Contribution, 1893.
	£	£ s. d.		£	£ s. d.
City of Sydney	2,636,632	2,677 2 10	Newtown	165,139	167 13 6
Alexandria	64,350	65 6 9	North Botany	20,898	21 4 5
Ashfield	146,015	148 5 2	North Sydney	249,022	251 16 8
Balmain	193,076	196 0 10	Paddington	174,312	176 19 10
Botany	23,464	23 16 6	Parramatta	75,875	77 0 10
Burwood	85,200	86 10 2	Petersham	117,714	119 10 5
Camperdown	43,788	44 9 3	Randwick	116,682	118 7 5
Darlington	27,864	28 5 10	Redfern	181,202	183 19 9
Drummoyne	23,178	23 10 8	Rookwood	17,185	17 9 0
Five Dock	15,014	15 4 11	St. Peters	32,102	32 11 11
Glebe	157,890	160 6 4	Waterloo	67,757	68 15 11
Granville	44,764	45 9 0	Waverley	105,151	106 15 4
Kogarah	40,800	41 8 6	Willoughby	73,435	74 12 3
Leichhardt	133,112	135 3 2	Woollahra	152,728	155 1 6
Macdonald Town	32,804	33 6 2	Totals	5,416,778	5,500 0 0
Manly	66,781	67 16 2			
Marrickville	133,894	135 19 0			

APPENDIX III.

SUMMARY of ATTENDANCES at Board Meetings during the year 1893.—(Number of Meetings, 27, exclusive of Committee Meetings.)

Names.	Meetings.	
	Present.	Absent.
Charles Bown, Esq., J.P. (Chairman)	27	0
Walter Church, Esq., J.P. (Vice-Chairman)	22	5*
Alderman J. C. Beare, J.P.	27	0
Edward J. Love, Esq.	27	0
Charles Hellmrich, Esq., J.P.	27	0
W. C. Goddard, Esq., J.P.	27	0

* On a visit to another Colony.

APPENDIX IV.

FIRE BRIGADES' BOARD, SYDNEY.

ABSTRACT of RECEIPTS and EXPENDITURE for the Year ending 31st December, 1893.

RECEIPTS.		EXPENDITURE.	
£. s. d.	£. s. d.	£. s. d.	£. s. d.
To Insurance Companies—		1 January, 1893—By balance	
Alliance	122 15 1		445 15 3
Athena	33 12 3	By GENERAL EXPENDITURE.	
Australian Alliance	86 8 2	Plant, stores, &c.	1,050 4 0
Australian Mutual	723 10 2	Clothing	436 19 6
Batavia	21 10 0	Printing, stationery, postage, &c.	86 18 8
British and Colonial	39 16 5	Rates and taxes	277 11 1
Caledonian	31 10 2	Life premiums	166 7 5
City Mutual	294 3 6	Guarantee premiums	10 0 0
Colonial Mutual	116 3 7	Cab-hire and cartage	25 9 7
Commercial Union	651 5 0	Rewards for calls	19 10 6
Cornwall	31 4 1	Rewards to turncocks	5 11 0
Derwent and Tamar	32 5 9	Petty expenses	84 10 1
Guardian	57 12 3	Assistance rendered	22 0 8
Hong Kong	43 16 5	Law costs	22 1 0
Imperial	113 18 2	Miscellaneous	39 1 3
Lion	20 17 10	M.F.B. Benefit Club	33 18 8
Liverpool and London and Globe	248 1 10	Stations—Repairs and additions	354 13 8
London and Lancashire	52 12 0	Newtown Fire-station	28 9 3
Manchester	32 16 8	North Sydney Fire-station—Site for	5 0 0
Mercantile Mutual	773 0 0		3,504 5 3
Mutual Union	18 18 10	By Salaries	7,800 16 11
National of New Zealand	105 5 5	Board fees	300 0 0
Netherlands-India	9 16 2	Auditors' fees	35 0 0
New South Wales Assurance Corporation	43 19 6	Medical fees	14 14 0
New Zealand	153 1 8		8,150 10 11
North British and Mercantile	92 1 5	By Lighting	474 2 8
North Queensland	22 1 0	Fuel	72 16 6
Northern	65 12 4		546 19 2
Norwich Union	192 4 4	By Horses—	
Pacific	32 11 1	Purchase	167 17 6
Palatine	40 2 5	Hire	30 15 0
Phoenix	115 14 0	Fodder	407 0 1
Queensland Mutual	12 15 10	Shoeing	39 9 1
Royal	202 10 7	Harness	39 9 6
Scottish Union and National	32 12 5		661 11 2
South British of New Zealand	123 4 3	Fire-alarms, Telephones, &c.	680 0 4
Standard of New Zealand	89 1 7	By Subsidies to Volunteer Fire Companies—	
Straits	21 7 11	Alexandria	100 0 0
Sun	65 10 10	Ashfield	110 0 0
United	320 0 3	Balmain	200 0 0
United Australian Mutual	42 7 5	Burwood	110 0 0
Victoria	154 17 5	Drummoyne	50 0 0
Underwriters' Association—for offices outside New South Wales	24 4 4	Glebe	150 0 0
	5,407 15 10	Granville	60 0 0
Colonial Treasurer	5,500 0 0	Leichhardt	75 0 0
		Manly	75 0 0
To Municipalities—		North Botany	50 0 0
City of Sydney	2,677 9 10	North City	60 0 0
Alexandria	65 6 9	Paddington	150 0 0
Ashfield	148 5 2	" Brewery	200 0 0
Balmain	190 0 10	Parramatta (No. 1)	85 0 0
Botany	23 16 6	" (No. 2)	85 0 0
Burwood	64 17 3	Randwick	50 0 0
Camperdown	44 9 3	Rookwood	40 0 0
Darlington	28 5 10	Standard Brewery	265 0 0
Drummoyne	23 10 8	St. Leonards	220 0 0
Five Dock	11 8 0	Waterloo	110 0 0
Glebe	160 6 4	Waverley	100 0 0
Granville	45 0 0	Woollahra	200 0 0
Kogarah	31 1 5		2,485 0 0
Leichhardt	135 3 2	Volunteer Firemen employed in watching duties	28 11 0
Macdonald Town	24 19 8	By Balance—	
Manly	67 10 2	Commercial Banking Co. of Sydney (ltd.) ..	641 17 1
Marrickville	185 19 0	Superintendent's petty cash	50 0 0
Newtown	167 13 5	" watching duty cash	20 0 0
North Botany	21 4 5		711 17 1
North Sydney	251 16 8		
Paddington	176 10 10		
Parramatta	77 0 10		
Petersham	119 10 5		
Randwick	118 7 5		
Redfern	183 19 0		
Rookwood	17 9 0		
St. Peters	32 11 11		
Waterloo	68 15 11		
Waverley	100 15 4		
Willoughby	74 12 3		
Woollahra	155 1 6		
	6,455 17 9		
Rent of quarters	560 14 4		
Watching duties	100 16 6		
Fines	1 7 6		
Assistance rendered	125 0 0		
Sale of old plant	53 15 0		
Liquidator—Fire, Marine, and Accident Indemnity Company	0 3 8		
	860 16 7		
Total	£17,214 10 2	Total	£17,214 10 2

Z. COLLIS BARRY,
Secretary.

Having examined and compared the books, vouchers, and accounts of the Fire Brigades' Board for the year ending 31st December, 1893, also this statement of receipts and expenditure, I certify the same to be correct.

Sydney, 19 January, 1894.

JAMES ROBERTSON, F.I.A.V.,
Public Accountant.

APPENDIX V.
VOLUNTEER FIRE COMPANIES, 1893.

Name of Station	Situation of Station.	No. of Members registered on Roll.	Plant.		Subsidy. £ s. d.
			Engines, Reels, &c.	Hose, feet of.	
CITY COMPANIES.					
North City	Cumberland-street	16	1 hose waggon, 2 horses, 1 reel ...	796	60 0 0
Paddington Brewery	Dowling-street	21	1 manual, 2 hose reels	1,200	200 0 0
Standard Brewery	Foveaux street	15	1 hose cart, 2 horses, 1 reel	912	205 0 0
SUBURBAN.					
Alexandria	Gerard-street	21	1 manual, 1 reel	805	100 0 0
Ashfield	Liverpool Road	17	1 manual engine	898	110 0 0
Balmain (2 stations)	Darling-street	28	2 manuals, 1 reel	1,200	200 0 0
Burwood	Belmore-street	18	1 manual engine	975	110 0 0
Drummoyne	Lyons Road	15	1 hose reel	505	50 0 0
Glebe	Mitchell-street	20	1 manual, 1 reel	1,080	150 0 0
Granville	Good-street	24	1 manual, 1 reel	644	60 0 0
Leichhardt	Marion-street	15	1 hose cart, 1 reel, 1 horse	400	75 0 0
Manly	Market-lane	18	1 manual, 2 hose reels	830	75 0 0
North Botany	Rickety-street	17	1 hose reel	606	50 0 0
Paddington	Oxford-street	18	1 manual, 1 reel	1,050	150 0 0
Parramatta No. 1	Church-street	21	1 manual, 1 reel	850	85 0 0
Parramatta No. 2	Church-street	21	1 manual, 1 reel, 1 hose and ladder cart.	1,100	85 0 0
Randwick	Council Chambers	15	1 hose reel	685	50 0 0
Rookwood	Joseph-street	22	1 manual engine	300	40 0 0
St. Leonards (2 stations)	Mount-street, and at Alfred-street.	21	2 manuals, 2 reels	1,700	220 0 0
Waterloo	Kellick-street	19	1 manual, 1 reel, 1 hose and ladder cart, 1 horse.	1,100	110 0 0
Waverley	Carrington Road	17	1 manual, 1 reel	894	100 0 0
Woollahra	Moncur-street	17	1 manual, 1 hose waggon, 2 horses	759	200 0 0
		400		19,280	£2,485 0 0

APPENDIX VI.

ATTENDANCE of Volunteer Companies at Actual Fires, within specified hours, for the Year 1893.

Volunteer Companies.	12 midnight to 6 a.m.		6 a.m. to 12 noon.		12 noon to 6 p.m.		6 p.m. to 12 midnight.		Total number of fires attended.	
	Number of fires attended.	Number of men present.	Number of fires attended.	Number of men present.	Number of fires attended.	Number of men present.	Number of fires attended.	Number of men present.	Total number of fires attended.	Total number of men present.
CITY COMPANIES--										
North City	22	185	7	35	10	51	26	220	65	401
Paddington Brewery	19	201	6	42	10	91	31	345	66	689
Standard Brewery	24	200	8	51	13	124	35	354	80	729
SUBURBAN--										
Alexandria	9	70	5	28	7	52	12	83	33	233
Ashfield	9	90	4	43	...	...	13	168	26	291
Balmain	2	20	...	...	4	40	4	48	10	108
Botany	1	8	...	...	2	21	2	31	5	60
Burwood	2	13	3	28	...	...	4	40	9	83
Drummoyne	3	18	...	...	...	...	...	...	3	18
Glebe	3	23	3	11	2	18	10	95	18	147
Granville	3	20	...	...	...	...	1	6	4	26
Leichhardt	9	59	8	48	...	...	19	125	36	232
Manly .....	...	...	...	...	3	27	1	12	4	89
Paddington	2	19	3	20	...	...	11	59	16	98
Parramatta No. 1	2	32	...	...	3	20	2	18	7	70
Parramatta No. 2	4	31	...	...	...	...	2	17	6	48
Randwick .....	...	...	...	...	...	...	1	5	1	5
Rookwood	1	8	...	...	...	...	1	9	2	17
Rockdale*† .....	...	...	...	...	...	...	1	12	1	12
St. Leonards	2	22	...	...	...	...	2	23	4	55
Waterloo	5	52	1	11	3	20	14	101	23	184
Waverley	1	8	4	34	1	10	8	80	14	132
Woollahra	3	32	4	38	2	20	9	91	18	181

* Not subsidised.

† Outside the M. F. Board's area.

APPENDIX VII.

Mr. Superintendent Bear's Report.

To the Fire Brigades' Board,—
Gentlemen,

Metropolitan Fire Brigade,
Head Quarters' Station,
28 February, 1884.

I do myself the honor to submit my Tenth Annual Report of the working and general efficiency of your Brigade, and the several Volunteer Companies, together with the details of fires attended in the city and suburbs for the year ending 31st December, 1883.

The total number of alarms received for fires, or supposed fires, was 401; of these 68 were false alarms, 75 proved to be only chimney alarms, and 258 were calls for fires. Of the fires 210 were slight or trifling, 23 were serious, and 25 resulted in total destruction. Of the 258 fires 154 were insured, 57 not insured, and in 47 instances the insurances on the buildings or contents could not be ascertained. In addition to the ordinary fires there have been chimney fires, requiring the attendance of firemen with hand-pumps only, making an aggregate total of 401 calls for fires, false alarms, and chimney fires.

The fires of 1893, as compared with those of 1892, show a decrease of 56; in the chimney fires attended with engines, the total 29 is similar; and those attended by firemen with hand-pump only, viz., 46, also corresponds with last year.

In the fires which were slight there has been a decrease of 60; in serious, an increase of 2; and in fires which resulted in total destruction, there has also been an increase of 2. Among the buildings totally destroyed are classed shed-buildings, weatherboard cottages, &c. Attached are detailed statements of the various fires attended by the Brigades and the Volunteer Fire Companies, as well as those unattended, but which have been reported to the Brigade from various sources, and a member of the Brigade has been sent to obtain the necessary particulars. The various summaries appended show the particular dates, times of call, time of outbreak, trades, localities, insurances, hourly and daily, weekly and monthly. There is also appended a summary of the supposed origin of fires for the year.

Referring to the summary of localities, it will be noticed that in the city of Sydney alone there were 200 calls, 104 of which were for actual fires, 39 were false alarms, 18 were for chimney fires reported as houses on fire, and 39 were for chimney fires attended by firemen with hand-pumps only.

Of the fires in the city there were in Macquarie Ward, 19; Brisbane and Cook Wards, 18 each; Denison Ward, 14; Phillip Ward, 12; Fitzroy Ward, 10; Gipps Ward, 7; and Bourke Ward, 6.

In the suburbs there were 201 calls, of which 154 were for fires, 29 were false alarms, 11 were chimney fires reported as houses on fire, and 7 were for chimney fires attended by firemen with hand-pumps only. The suburbs affected in regard to fires only were as follows, viz.:—Rulfern and Newtown, 16 each; Glebe, 11; Ashfield, 9; Balmain and Waverley, 8 each; Parramatta and Waterloo, 7 each; Leichhardt, Marrickville, Paddington, Petersham, Woollahra, and slips in the harbour, 6 each; North Sydney, 5; Alexandria, 4; Canterbury, Darlington, Drummoyne, and Macdonaldtown, 3 each; Auburn, Botany, Burwood, and Rockdale, 2 each; Granville, Manly, Randwick, St. Peters, and Strathfield, 1 each.

In summarising the trades it will be found that private dwellings have been mostly affected by fires, the number for all classes of damage being 93; but taking the actual trades into consideration, the most notable stand in the following order, viz.:—Grocers, 13; commission agents and produce merchants, 12; licensed victuallers, 11; stables, 10; bakers and confectioners, 7; ships, 6; drapers and milliners, painters and decorators, 5 each; boarding-houses and coopers, 4 each; builders and contractors, buildings in course of erection, butchers, fishmongers, furniture dealers, tobacconists and hair-dressers, printers and stationers, restaurants, sheds, unoccupied premises, general dealers, and dairies, 3 each; places of amusement, bedding manufacturers, boot-makers, cabinet-makers and upholsterers, coach-builders, fruiterers and green-grocers, offices, opticians, Government buildings, schools, warehouses, jewellers, workshops, bus proprietors, open yards, soap and candle works, and brass-founders, 2 each; other trades affected, 1 each. These are to be found in the "Summary of Trades."

The strength of the Brigade is as follows:—Two large steam fire-engines, 5 small steam fire-engines, 2 7-inch manual engines, 3 6-inch manual engines, 6 under 6-inch manual engines, 4 telescope ladders, 1 American ladder truck, 1 ladder van, 1 hose van, 1 steam-engine tender, 10 hose reels, 24,535 feet of hose, most of which is in good and fair condition, 18 horses, 52 telephones erected, 7 telephone switchboards, 87 telephone fire alarms, 50 firemen, including Superintendent, Deputy-Superintendent, and coachmen.

The undermentioned Volunteer Fire Companies hold plant on loan from your Board, viz.:—Alexandria, Ashfield, Drummoyne, Burwood, Leichhardt, Granville, Manly, North Botany, North City, Randwick, St. Leonards, Standard Brewery, Waverley, and Woollahra. Six Volunteer Fire Stations are also vested in the hands of your Board.

The following comprise the Volunteer Fire Companies within your Board's jurisdiction:—Alexandria Volunteer Company, subsidised, £100; Ashfield Volunteer Company, £110; Balmain Volunteer Company, £200 (2 stations); Burwood Volunteer Company, £110; Drummoyne Volunteer Company, £50; Glebe Volunteer Company, £150; Granville Volunteer Company, £60; Leichhardt Volunteer Company, £75; Manly Volunteer Company, £75; North Botany Volunteer Company, £50; North City Volunteer Company, £60; Paddington Volunteer Company, £150; Paddington Brewery Volunteer Company, £200; Parramatta Volunteer Company No. 1, £85; Parramatta Volunteer Company No. 2, £85; Randwick Volunteer Company, £60; Rookwood Volunteer Company, £40; St. Leonards Volunteer Company (2 stations), £220; Standard Brewery Volunteer Company, £205; Waterloo Volunteer Company, £110; Waverley Volunteer Company, £100; Woollahra Volunteer Company, £200.

The total amount paid as subsidies and bonuses to the various Volunteer Fire Companies during the year was £2,485. In addition to the subsidies new plant has been supplied in many cases to Volunteer Companies to replace that condemned as unfit for further use. The approximate value of the whole of your Board's plant, together with the land and stations held in trust, is £82,446 13s. 6d. The value of the Volunteer Companies' own plant is not included in this sum.

The undermentioned are the members of the Metropolitan Fire Brigade:—

Name.	Rank.	Date of Appointment.	Where stationed.
William Douglas Bear	Superintendent of Fire Brigades, and Inspector of Kerosene.	Under Government, May, 1884.	Head-quarters.
Alfred Webb	Deputy Superintendent	26 June, 1883	do
John E. Ford	Foreman	1 Aug., 1884	Officer in charge No. 2 Station.
Sidney Watson	do	1 Jan., 1885	do No. 3 Station.
John Snelson	do	14 July, 1884	do No. 4 Station.
William McKnight	Engineer	1 July, 1884	Head-quarters.
John H. McKnight	do	14 July, 1884	do
George Lang	Senior fireman	7 Jan., 1885	Head-quarters.
Thomas P. Gordon	do	3 Jan., 1885	No. 3 Station.
Thomas Gorman	do	18 June, 1885	No. 2 Station.
Samuel Holman	do	11 Feb., 1886	Head-quarters.
Edward C. Brown	do	1 July, 1884	Officer in charge No. 5 Station.
George C. Gray	1st class fireman	1 July, 1884	No. 4 Station.
Joseph Stanchell	do	1 July, 1884	Head-quarters.
James Hancock	do	1 Aug., 1884	No. 3 Station.
Robert W. Nash	do	1 Jan., 1887	do
Thomas G. Cutts	do	19 March, 1888	No. 2 Station.
Harris S. Davis	do	18 April, 1888	do
Francis Howard	do	19 April, 1888	No. 3 Station.
Stephen H. Eyre	do	6 Aug., 1888	Head-quarters.

Name.	Rank.	Date of Appointment.	Where stationed.
Frank Jackson	1st class fireman	7 Feb., 1889...	No. 3 Station.
John Graham	do	15 April, 1889...	No. 2 Station.
George J. Parsons	do	6 Sept., 1889...	do
George H. Dadd	do	13 Feb., 1890...	Head-quarters.
Augustus J. Gerard	do	21 Feb., 1890...	No. 3 Station.
George Alchin	do	28 April, 1890...	No. 4 Station.
Albert E. Pickering	do	18 Sept., 1890...	No. 3 Station.
Charles May	do	3 Oct., 1890...	do
Harrie B. Lee	do	19 Feb., 1891...	No. 5 Station.
Thomas E. Clarke	do	23 Mar., 1891...	Head-quarters.
Edward Smith	do	7 May, 1891...	do
John A. Becker	2nd class "A"	12 Mar., 1891...	No. 4 Station.
Joseph Morris	do	28 July, 1891...	No. 2 Station.
William Corkill	do	25 May, 1891...	do
James W. Morris	do	1 Dec., 1891...	Head-quarters.
Harry Skelton	2nd class "B"	24 Mar., 1892...	do
Robert Hunter	do	16 April, 1892...	do
Edward Pember	do	23 April, 1892...	do
James A. Meade	3rd class "A"	9 June, 1892...	do
George J. Weston	do	4 July, 1892...	do
John A. Nicoll	do	3 Aug., 1892...	do
Alexander Jamieson	do	18 Nov., 1892...	do
John F. Arnold	3rd class "B"	3 Jan., 1893...	do
Harry Flukes	do	6 Jan., 1893...	No. 2 Station.
Francis W. Brooks	do	do	Head-quarters.
Ephraim Stoneham	do	do	do
Edward J. Roberts	do	9 Jan., 1893...	do
Herbert J. Houghton	do	11 Jan., 1893...	do
James Jones	do	1 June, 1893...	do
George W. Barry	Probation	21 Aug., 1893...	do
<i>Auxiliaries.</i>			
G. J. Holman	Fireman	6 June, 1892...	No. 5 Station.
W. J. Mattingly	do	do	do
W. F. Carey	do	do	do
A. J. Murray	do	do	do
W. R. Pinfold	do	do	do
T. H. Cook	do	4 Oct., 1893...	do
J. F. Cook	do	6 Oct., 1893...	do
D. Anderson	do	23 Oct., 1893...	do

During the year thirteen additions have been made to the Telephone Fire Alarm System, viz., Nos. 75 to 87, their positions being given in the following list of Telephone Fire Alarms.

TELEPHONE FIRE ALARMS.

No. of Box.	Fire Station to which the Alarm is connected.	Locality of Alarm.
1	Head Quarters, Castlereagh-street	Corner of George and Park Streets.
2	" " " "	" York and King Streets.
3	" " " "	" Pitt and King Streets.
4	" " " "	" Elizabeth and King Streets.
5	" " " "	" Liverpool and College Streets.
6	" " " "	" William-street and Boomerang Road.
7	" " " "	" William and Victoria Streets.
8	" " " "	" Elizabeth and Park Streets.
9	" " " "	Macquarie-street, opposite Parliament House.
10	No. 3 Station, George-street North	" Hunter and Bligh Streets.
11	" " " "	" Hunter and George Streets.
12	Head Quarters	" Pitt and Market Streets.
13	" " " "	" King and Sussex Streets.
14	" " " "	" Sussex and Erskine Streets.
15	No. 3 Station, George-street North	" Kent and Margaret Streets.
16	Head Quarters	" Elizabeth and Hay Streets.
17	" " " "	Messrs. A. Holdern & Sons, George-street, Haymarket.
18	" " " "	Corner of Sussex and Liverpool Streets.
19	" " " "	" Kent and Bathurst Streets.
20	" " " "	" Kent and Market Streets.
21	" " " "	" Oxford and Riley Streets.
22	" " " "	" George-street and Union-Jane.
23	" " " "	" George and Goulburn Streets.
24	" " " "	" York and Market Streets.
25	" " " "	" Factory and Harbour Streets (J. Bridge & Sons).
26	No. 4 Station, Stanmore Road, Marrickville....	" Norton-street and Parramatta Road, Leichhardt.
27	" " " "	" Railway premises and Luckey-street, Summer Hill.
28	" " " "	" Marrickville and Ilawarra Roads, Marrickville.
29	" " " "	Council Chambers, St. Peters.
30	Waverley Volunteer Station, Carrington Road, Waverley.	" " Randwick.

No. of Box.	Fire Station to which the Alarm is connected.	Locality of Alarm.
31	No. 3 Station, George-street North	George-street North, opposite Mariners' Church.
32	" " " "	Corner of George-street North and Lower Fort-street.
33	" " " "	" Lower Fort-street and Windmill-street.
34	" " " "	" Argyle and Playfair Streets.
35	" " " "	" Argyle and Kent Streets.
36	" " " "	" Victoria Terrace, opposite Eye Hospital, Miller's Point.
37	" " " "	" Young-street and Circular Quay.
38	" " " "	" Macquarie-street North and Circular Quay.
39	" " " "	" Bridge and Pitt Streets.
40	" " " "	Opposite Terry's lane, Pitt-street.
41	" " " "	Corner of Church Hill and Charlotte-place.
42	" " " "	Kent-street, near Gas-lane.
43	" " " "	Corner of Bent and O'Connell Streets.
44	No. 2 Station, George-street West	" Elizabeth and Devonshire Streets.
45	" " " "	" George-street West and Newtown Road.
46	" " " "	" Regent and Cleveland Streets.
47	" " " "	" Redfern and Botany Streets, Redfern.
48	" " " "	Elizabeth-street, Redfern, opposite Horder's stables.
49	" " " "	Corner of M'Arthur and Harris Streets.
50	" " " "	" Figg and Harris Streets.
51	" " " "	" Bowman and Harris Streets.
52	G.P.O.	" George and Barrack Streets.
53	No. 4 Station, Stanmore Road, Marrickville	" Parramatta Road and Johnston-street, North Annandale.
54	" " " "	" Johnston and Booth Streets.
55	" " " "	" Illawarra and Warren Roads, Marrickville.
56	M.F.B. Station, Newtown	" King and Horder's Streets, Newtown.
57	" " " "	Intersection of Newtown and Darlington Roads, and Forbes-street, Newtown.
58	" " " "	Corner of Camden-street and Cook's River Road, Newtown.
59	" " " "	Intersection of Wells-street, Cook's River Road, and Rochford-street, Newtown.
60	" " " "	Corner of Enmore Road and Wilford-street, Newtown.
61	" " " "	" Enmore and Stanmore Roads, Newtown.
62	" " " "	In front of Council Chambers, Erskineville Road, Macdonaldtown.
63	" " " "	Corner of Parramatta Road and Parkes-street, Camperdown.
64	No. 2 Station, George-street West	" Abercrombie Place and Cleveland-street.
65	" " " "	" Abercrombie and Shepherd Streets.
66	Woollahra Volunteer Station, Moncur-street	" Queen-street and Old South Head Road.
67	" " " "	" Nelson-street and Old South Head Road.
68	" " " "	" Cowper and Oxford Streets, Waverley.
69	" " " "	" Ocean-street and Point Piper Road.
70	" " " "	" South and Bay Streets.
71	" " " "	" Darling Point Road and New South Head Road.
72	" " " "	" Yarrabee and Darling Point Roads.
73	" " " "	" Forth-street and Edgecliff Road.
74	Darlinghurst and Randwick Police Stations	" Carlton-street, Kensington Estate.
75	No. 3 Station, George-street North	" Watson's Road and Upper Fort-street.
76	" " " "	" Essex and Harrington Streets.
77	" " " "	" Bridge and Macquarie Streets.
78	Head Quarters, Castlereagh-street	" Erskine-street and York-lane.
79	" " " "	" Druitt-street, opposite Weighbridge.
80	" " " "	" Bourke and William Streets.
81	" " " "	" Bourke and Junction Streets.
82	" " " "	" Macleay-street and Elizabeth Bay Road.
83	" " " "	" Macleay and Wilde Streets, opposite clock.
84	" " " "	" Victoria and Orwell Streets.
85	" " " "	" Bourke and Liverpool Streets.
86	" " " "	" Goulburn and Macquarie Streets.
87	No. 4 Station, Marrickville	" Cook's River Road and Railway-street.

Most of the Volunteer Fire Stations, Theatres and Music Halls, the University, Government Printing Office, Railway Department, Town Hall, and Messrs. Hoffaung and Co.'s warehouse are in direct communication with our permanent stations. The Police Stations are also in communication, through the Central Police Station. The various wharves, warehouses, business houses, and many public buildings, are in telephone communication by means of the General Post Office Exchange, which is open to receive and transmit calls for fires at any hour of the day or night; and arrangements have been made by which the watchmen employed by the principal business houses report through to the Head-quarters' Station several times every night. The new fire-station for the protection of the northern end of the city, which was commenced on the 7th July, 1891, was opened on the 25th January, 1893, and nine men are stationed there, with the necessary fire-extinguishing appliances. On 5th August the Brigade was strengthened by the arrival of a ladder capable of being extended to a height of 80 feet, which has formed a valuable acquisition to the department.

The telephone fire-alarms and nearly the whole of the electrical apparatus has been kept in order by the members of the Brigade.

I have to thank the officers and members of the Volunteer Companies for their valuable assistance during the year. The officers and members of the Police Force have as usual rendered very effective assistance, and I have to express my obligation to them. I have also to tender my thanks to the turncocks and to the public generally for their valuable co-operation.

The discipline and general efficiency of the Brigade are in all respects satisfactory, and although the duties at times have been a severe strain on the whole staff, the work has been performed cheerfully and well.

In conclusion, I beg to tender my most sincere thanks to your Board for the cordial support it has awarded me.

I have, &c.,

WILLIAM D. BEAR,

Superintendent of Brigades, and Inspector of Kerosene.

APPENDIX VIII.

List and Details of Fires attended by, or reported to, the Metropolitan Fire Brigade, or Volunteer Fire Companies, for the Year ending December, 1893.

Date.	When discovered.	Time of Call.	Locality.	Name of Tenant.	How Premises occupied.	Construction of Premises.	Origin or supposed cause of Fire.	Insurances		Extent of Damage, &c.	Extinguished by
								Contents	Building.		
1893. Monday, 2 January.	6-52 a.m.	6-56 a.m.	5, East-street, Redfern..	Mary Ann Wilson.....	Private dwelling..	Weatherboard, iron over shingle roof.	Spark from kitchen chimney.	None.....	Austra'n Mutual, £200.	Attic used as bedroom, together with contents, severely damaged by fire, and roof partly off; three rooms under and contents slightly damaged by water.	M.F.B., with hydrant.
Tuesday, 3 January.	7 20 p.m.	7-22 p.m.	337, George-street, City	Messrs C. E. Fuller & Co.	Booksellers and stationers.	Brick, and iron roof.	Unknown	Merc'ile Mutual, £6,500.	Austra'n Mutual, £1,200. Merc'ile Mutual, £1,200.	Middle room on first floor and contents, consisting of fancy stationery, severely damaged by fire, smoke, and water. Stock in shop under slightly damaged by fire, smoke, and water; rest of building and contents damaged by smoke.	M.F.B., with one hydrant, assisted by several Vol. F. Cos.
Wednesday, 4 January.	7-39 p.m.	7-44 p.m.	21, Derwent-st., Glebe..	S. Macrow	Private dwelling..	" ..	Candle	None	Merc'ile Mutual, £150.	Bed and bedding in back room on first floor slightly damaged by fire.	Inmates, with buckets of water.
Friday, 6 January.	2-23 a.m.	2-24 a.m.	229, Castlereagh-street, City.	R. Marshall	" ..	" ..	Smoking tobacco	" ..	Unknown.....	Bed and bedding damaged by fire in front room on first floor; rest of contents of same room slightly damaged by heat and smoke.	M.F.B., with buckets of water.
Saturday, 7 January.	3 0 a.m.	None rec'd.	Church-street, Parra- matta North.	M. Rochester	Store and dwelling	Brick and weatherboard, iron roof.	Hot ashes	Building and contents, Union of N. Zealand, £1,100.	Austra'n Mutual, £150.	Outhouse in rear of premises slightly damaged by fire	Inmates, with buckets of water.
"	9-10 p.m.	9-33 p.m.	*Homebush Road, Strath- field.	George Lewis.....	Private dwelling..	Weatherboard, iron roof.	Candle	None	Merc'ile Mutual, £150.	Bed and bedding damaged by fire, rest of contents damaged by heat and smoke in front room on ground floor.	" ..
Sunday, 8 January.	2 30 a.m.	2-33 a.m.	69, Regent-st., Redfern	Mrs. Annie Wise	Fruiterer	Brick, and iron roof.	Unknown	Merc'ile Mutual, £100.	Austra'n Mutual, £500.	A small quantity of fruit and confectionery, together with portion of wood partition, damaged by fire in front shop on ground floor. Plate-glass window broken.	M.F.B., with hydrant.
"	" ..	" ..	69½ " " ..	M. T. Jackman	Tobacconist....	" ..	" ..	Austra'n Mutual, £50.	" ..	About 8 x 10 feet of wood partition and screen in front shop damaged by fire; ceiling damaged by smoke.	" ..
"	2-30 a.m.	2 33 a.m.	14, Ennis-lane, Balmain	J. Bennis..... P. Fitzgerald	Tinsmith	Brick and weatherboard, shingle roof.	Unknown	None	Austra'n Mutual, £250.	Shop and dwelling of six rooms, together with most part of contents, burned out and roof off.	Balmain V. F. Co., with two hydrants.
"	" ..	" ..	10, " " ..	Mrs. Caran	" ..	" ..	" ..	Austra'n Mutual, £100.	Austra'n Mutual, £200.	Dwelling of six rooms; roof slightly damaged by fire; remaining portion of house damaged by water, furniture by removal.	" ..
Monday, 9 January.	3-0 a.m.	None rec'd.	Market and Pitt streets, City.	Walter Jones, licensed victualler, "George Hotel."	Wood and iron, iron roof.	Wood and iron, brick, and con- crete roof.	Smoking tobacco.	South British, £750.	Unknown	Bed, bedding, and some wearing apparel damaged by fire in room on roof.	Inmates, with buckets of water.
"	noon.	" ..	" " ..	" ..	" ..	" ..	Defective gas-fit- ting.	" ..	" ..	Woodwork of gas-heating apparatus in dining-room on first floor slightly damaged by fire.	" ..
Tuesday, 10 Jan.	7-31 p.m.	7 36 p.m.	143 King-street, City ..	Henry George Kothe ..	Fancy goods im- porter.	Brick, and iron roof.	Unknown	Imperial Insur- ance Co., £300.	Mercantile Mutual, £600.	Front shop on ground floor and contents, consisting of a quantity of fancy goods, &c., severely damaged by fire, heat, smoke, and water; rest of building slightly damaged by smoke.	M.F.B., with hydrant.
Saturday, 14 January.	9-3 p.m.	9-6 p.m.	The Grange, Wilson- street, Newtown.	W. Coker.....	Private dwelling..	Stone, and slate roof.	Light thrown down.	Unknown	Unknown	An empty case in outhouse at rear of premises slightly damaged by fire.	Inmates, with buckets of water.
Monday, 16 January.	11-15 p.m.	None rec'd.	Pitt and Market streets, City.	Walter Jones, licensed victualler, "George Hotel."	Wood and iron, and iron roof.	Wood and iron, and iron roof.	Unknown	South British, £750.	Unknown	Wood partition and a small quantity of wearing apparel damaged by fire in room on roof level.	" ..
Tuesday, 17 January.	11-40 p.m.	None rec'd.	Kenilworth-street, Waverley.	Cottages in course of erection.	Brick, and iron roof.	Brick, and iron roof.	" ..	" ..	Northern Insur- ance Co., £500.	Doors, sashes, and a quantity of building material burned; floor damaged by fire in back kitchen on ground floor.	Neighbours, with buckets of water.
Wednesday, 18 January.	1-37 a.m.	1-37 a.m.	*Rocky Point Road, Rock- dale.	Theodore Nicaise	Fruiterer.....	Weatherboard, with iron roof.	" ..	None.....	Australian Mutual, £125.	Shop and two rooms and contents burned out and fallen down.	St. George Vol. F. Company. M.F.B., with two hydrants
"	" ..	" ..	" " ..	Alexander Dean	Furniture dealer.	" ..	" ..	Atlas Insurance Company, £150.	Australian Mutual, £200.	Shop and four rooms and contents, consisting of furniture, burned out and fallen down.	" ..
"	" ..	" ..	" " ..	Unoccupied premises	" ..	" ..	" ..	" ..	Australian Mutual, £10.	Shop and three rooms, shop severely damaged by fire; rest of building damaged by heat.	" ..
Saturday, 21 January.	2-55 a.m.	3 0 a.m.	No. 48 and 50, Ultimo Road, City.	Francis Young	Produce merchant	Brick, and iron roof.	Unknown	National of New Zealand, £650.	National of New Zealand, £900.	A building of two floors, about 100 ft. x 40 ft., containing about 200 tons of hay and chaff, and a large quantity of empty bags, together with machinery, burned out and partly fallen down.	M.F.B., with four steam fire engines and one hydrant, assisted by several Vol. Fire Cos.
Wednesday, 23 January.	3-3 a.m.	3-10 a.m.	No. 52 Elizabeth-street, City.	James Hamilton	Private dwelling..	" ..	Spark from fire ..	None	Imperial, £100 ..	Roof damaged by breakage. Back kitchen on ground floor nearly burned out; stairs severely damaged by fire; rest of building and contents slightly damaged by fire, heat, and smoke.	M.F.B., with hydrant, as- sisted by Vol. Fire Cos.
Friday, 27 January.	2-35 p.m.	2-40 p.m.	17, Tattersall's Club Chambers, Pitt-street, City.	Liverpool Horse and Galloway Club.	Offices	Brick and stone, and iron roof.	Light thrown down.	City Mutual Insurance Co., building and contents, £16,475.	" ..	Under part of counter and a quantity of paper damaged by fire in office on ground floor.	Neighbours, with private hydrant.

* Outside M.F.B. area. † Subsequent fire, Monday, 16th January, 1893. ‡ Previous fire, 9th January, 1893.

List and Details of Fires attended by, or reported to, the Metropolitan Fire Brigade, or Volunteer Fire Companies—continued.

Date.	When discovered.	Time of Cull.	Locality.	Name of Tenant.	How Premises occupied.	Construction of Premises.	Origin or supposed cause of Fire.	Insurances.		Extent of Damage, &c.	Extinguished by.
								Contents.	Building.		
1892.											
Friday, 27 January.	2 43 p.m.	2 53 p.m.	7, Bay View terrace, Pyrmont.	Mr. George Spering	Private dwelling..	Stone, and shingle roof.	Spark from furnace chimney.	None	Unknown	About 4 ft. x 4 ft. of shingle roof damaged by fire; walls of back room on first floor damaged by water.	Neighbours, with buckets of water.
"	7 40 p.m.	7 43 p.m.	Park-street, off Pyrmont Bridge Road, Glebe.	The Magic Soap and Candle Company.	Soap factory	Wood and iron, and iron roof.	Spark from furnace.	"	None	A small quantity of bags and sawdust burned in shed....	M.F.B., with buckets of water.
"	7 45 p.m.	7 50 p.m.	Ramsey's Bush, Parramatta Road, Ashfield.	Mrs. Stevenson	Bush shed	Bags and bushes	Set fire to for eviction.	"	"	A bush shed burned down; received notice from police to leave.	Burned itself out.
Saturday, 28 January	9 20 a.m.	9 30 a.m.	Doncaster Avenue, Kensington Estate, Randwick.	Mr. J. Cook	Carpenter's shop.	Weatherboard, and iron roof.	Spark from fire	"	Merc'ile Mutual, £50.	A shed building, about 20 ft. x 12 ft.; contents, consisting of a small quantity of ash frames, severely damaged by fire; walls damaged by heat and smoke.	Employees, with buckets of water.
"	11 38 p.m.	11 39 p.m.	*42, George-street, Waterloo.	Edward Gwinnan	Produce merchant	Brick, with iron over shingle roof.	Unknown	Im. Insurance Co., £250.	Austra'n Mutual, £500, on the block.	Store 60 x 60 ft., containing about 2 tons of produce, burned out and partly fallen in.	M.F.B. with one steam fire engine and two hydrants, assisted by Waterloo, Standard Fire, and Alexandria Vol. Fire Cos.
"	"	"	*44, George-street, Waterloo.	Mrs. Annie Brough	Private dwelling..	"	"	None	"	Roof damaged by fire and cutting away; three rooms under damaged by water; furniture slightly damaged by removal.	"
"	"	"	*46, George street, Waterloo.	Matthew Froster	"	"	"	"	"	Roof damaged by fire and cutting away; three rooms under and contents damaged by water and removal.	"
"	"	"	*48, George-street, Waterloo.	William Best	"	"	"	"	"	Roof damaged by fire and cutting away; three rooms under damaged by water, and furniture by removal.	"
"	"	"	*50, George-street, Waterloo.	Mrs. Elizabeth Walker	"	"	"	"	"	Roof damaged by fire and cutting away; three rooms under, and contents slightly damaged by water and removal.	"
"	"	"	*52, George-street, Waterloo.	Bernard Whalen	"	"	"	"	"	Roof damaged by fire and cutting away; three rooms slightly damaged by water; furniture slightly by water and removal.	"
"	"	"	*54, George-street, Waterloo.	George Anderson	"	"	"	"	"	Cottage of three rooms and kitchen; furniture slightly damaged by removal and water.	"
Sunday, 29 January.	3 12 p.m.	3 15 p.m.	Playlan-street, City	Thomas Playfair	Butcher	Wood, and iron roof.	Light thrown down.	Building and fixtures, Commercial Union, £900.	"	Woodwork and machinery slightly damaged by fire.....	Employees, with buckets of water.
Monday, 30 January.	4 23 a.m.	None rec'd.	Church-street, Parramatta.	A. H. Roberts & Co.	Tobaccoists	Brick, and iron roof.	Rats at matches..	London and Lancashire, £200.	Liverpool & London & Globe, £500.	Front shop and contents, consisting of a quantity of tobaccoists' materials, very severely damaged by fire and water.	Parramatta Vol. Fire Cos., with hydrant.
Tuesday, 31 January.	5 30 a.m.	5 33 a.m.	(Nos. 210 and 212, Kent-street, City.	Messrs. Clifford, Love, & Co.	Warehouse	"	Overheat of kiln.	Derwent and Tamar, £5,000; Northern, £2,000; N. S. Wales, £1,000; Hong Kong, £1,500.	Royal, £3,000; Guardian, £2,000.	Back part of warehouse, on 3rd floor, over kiln, and contents severely damaged by fire and water, rest of contents slightly damaged by smoke and water.	M.F.B., with one hydrant, assisted by several Vol. Fire Cos.
"	3 10 p.m.	3 12 p.m.	52, Harbour-street, City	Laycock, Son, and Nettleton.	Bedding manufactory.	Wood and iron, and iron roof.	Light thrown down.	None	None	A shed building, about 20 x 20 ft., containing about 5 tons of straw and 1 ton of fibre, severely damaged by fire and water; shed nearly burned out and fallen down.	M.F.B., with one hydrant.
"	8 40 p.m.	8 45 p.m.	George-street, Marrickville.	W. H. Pentecost	Private dwelling..	Weatherboard, and shingle roof.	Kerosene lamp, explosion of.	Commercial Union, £100.	Unknown	A small quantity of wearing apparel damaged by fire in front room on ground floor, wall and ceiling of same room damaged by heat and smoke.	Inmates and neighbours, assisted by M.F.B., with buckets of water.
Wednesday, 1 February.	4 23 p.m.	4 33 p.m.	85, Cleveland-street, Redfern.	Thomas Stewart	'Bus proprietor..	Wood and iron, and iron roof.	Light thrown down.	Hong Kong, £330	Hong Kong, £170	A shed building, about 80 x 30 ft., and contents, consisting of 150 tons straw, hay and chaff, lucerne, &c., burned out and fallen down; contents of shed adjoining, about 30 x 30 ft., containing machinery, slightly damaged by fire and water. Both sheds adjoining and communicating.	M.F.B., with five hydrants, assisted by several Vol. Fire Cos.
Thursday, 2 February.	8 0 a.m.	None rec'd.	566 and 568, George-street, City.	W. W. Campbell & Co.	Furniture importers.	Brick, and iron roof.	Doubtful	N.S.W., £210; City of London, £210.	Unknown	Two chairs slightly damaged by fire on ground floor in warehouse.	Burned itself out.
Saturday, February.	10 15 p.m.	10 17 p.m.	151, Regent-street, Redfern.	James Nutt	Private dwelling..	Brick, and slate roof.	Unknown	Aust. Mutual, £100.	Aust. Mutual, £233 6s. 8d.	Bed and bedding, and contents of back room on first floor severely damaged by fire and water; ceiling under damaged by water; front room on first floor damaged by heat and smoke.	M.F.B. and inmates, with buckets of water.
Monday, 6 February.	7 55 p.m.	8 0 p.m.	18, Dixford-street, Paddington.	W. Humphries	"	"	Gas bracket	Norwich Union, £350	United Ins. Co., £428.	Window curtains burned; rest of contents slightly damaged by smoke in front room on first floor.	Inmates, with buckets of water.
"	9 0 p.m.	9 4 p.m.	Circular Quay, the harbour.	S.S. "Ouraka," Captain Donaldson.	Iron steamship	"	Kerosene lamp, upsetting of.	Unknown	Several Ins. Cos., £18,500.	Sheep pens under topgallant fore-castle slightly damaged by fire.	The crew.
Tuesday, 14 February	8 30 p.m.	None rec'd.	143, Regent street, City	§ Joseph Walker	Shop and dwelling	Brick, and iron roof.	Candle	None	Unknown	Small quantity of bed and bedding in front room on first floor severely damaged by fire and water.	Inmates, with buckets of water.
Wednesday, 15 February	11 0 p.m.	11 40 p.m.	46, Ultimo-street, Ultimo	Mary Hinks	Private dwelling..	"	Matches, careless use of.	"	"	Bed and bedding, and a small quantity of wearing apparel severely damaged by fire and water in front room on first floor.	"

* All adjoining and communicating. † Previous fire, April 22, 1892. ‡ Outside M.F.B. area. § William Walker, aged about 3 months, severely burned on the right side and back, attended at the Hospital; since died.

List and Details of Fires attended by, or reported to, the Metropolitan Fire Brigade, or Volunteer Fire Companies—continued.

Date.	When discovered.	Time of Call.	Locality.	Name of Tenant.	How Premises occupied.	Construction of Premises.	Origin or supposed cause of Fire.	Insurances.		Extent of Damage, &c.	Extinguished by;
								Contents.	Building.		
1898. Friday, 17 February.	12-0 a.m.	12-11 a.m.	Wallace-street, Marrickville	S. Galvin	Stable and carpenter's shop	Stone and brick, and iron roof.	Unknown	None	None	A building of two floors, about 12 x 28 ft., burned out and fallen down, together with contents.	M.F.B., with hydrant.
"	7-05 p.m.	8-3 p.m.	5, Darlington Road, Darlington.	E. M'Gowan	Private dwelling	Brick, and shingle roof.	Matches, careless use of.	"	Manchester, £350; Standard, £400.	A small quantity of wearing apparel slightly damaged by fire and water in back room on ground floor.	Inmates, with buckets of water.
"	10-0 p.m.	None rec'd.	Albert-street, Marrickville.	B. M. White	"	Brick, and slate roof.	Gas Bracket	Aust. Mutual, £100.	Unknown	Window curtains burned; window broken, and frame scorched in front room on ground floor.	"
Thursday, 23 February.	1-10 p.m.	"	162, Clarence-street, City.	J. C. Ludowici & Sons.	Leather belting manufactory.	Brick, and iron roof.	Tar boiling over.	Austra'n Mutual, £12,000.	National of New Zealand, £2,500.	About 1 gallon of tar destroyed by fire on third floor	Employees, with water.
Friday, 24 February.	3-5 a.m.	3-14 a.m.	Telford-lane, Glebe	G. Graham	Fishmonger	"	Spark from fire	None	None	Packing-case, used as a smoke-house, and a quantity of bedding damaged by fire in yard at rear of premises.	Inmates, with buckets of water.
"	1-3 p.m.	1-3 p.m.	Point Piper Road	Woollahra Corporation	Open yard	Wood, and iron roof.	Tar boiling over.	"	Merc'ile Mutual, £35.	About 69 gallons of tar destroyed by fire in shed; sides and roof damaged by fire	Woollahra Vol. Fire Co., with hydrant.
Sunday, 26 February.	9-30 p.m.	9-34 p.m.	348, Jones-street, Ultimo	J. Anderson	Private dwelling.	Brick, and iron roof.	Matches, children playing with.	"	Unknown	Bed, bedding, and a quantity of wearing apparel damaged by fire and water in front room on ground floor; walls slightly damaged by smoke.	Inmates and M.F.B., with buckets of water.
Tuesday, 28 February.	12-30 a.m.	12-40 a.m.	Laughlin-street, Waterloo.	Joseph O'Brian	"	Weatherboard, and iron roof.	Unknown	"	"	A weatherboard cottage burnt out and partly fallen down; furniture damaged by removal.	M.F.B., with steam fire-engine, assisted by several Vol. Fire Cos.
"	"	"	"	C. Windberg	"	"	"	Austra'n Mutual, £50.	Austra'n Mutual, £125.	Kitchen in rear of premises severely damaged by fire; furniture of two back rooms slightly damaged by water and removal.	"
Thursday, 2 March.	8-0 p.m.	None rec'd.	Spring-street, Waverley	Mrs. Sawdy	"	"	Candle	None	None	Bed and bedding slightly damaged by fire in back room on ground floor.	Inmates, with buckets of water.
Friday, 3 March.	4-45 p.m.	4-47 p.m.	46, Park-street, City	John Hemsworth	Restaurant	Brick, and iron roof.	Light thrown down.	Sun Insurance Co., £100.	Unknown	A small quantity of wearing apparel damaged by fire in back room on ground floor.	"
Sunday, 5 March.	2-20 a.m.	2-20 a.m.	Elizabeth-street, Ashfield.	Mr. John Wootton	Private dwelling.	Weatherboard, and iron roof.	Unknown	None	None	Shed in rear of premises and contents consisting of tools, &c., severely damaged by fire; together with 10 ft. fencing.	Inmates and police, with buckets of water.
Saturday, 11 March.	7-44 p.m.	7-47 p.m.	603, Bourke-street, City	Mrs. Sargeant	Boarding-house.	Brick, and iron roof.	Light thrown down.	New Zealand Ins. Co., £270.	Merc'ile Mutual, a terrace of 7 houses, £2,000.	Cupboard under stairs on ground floor burned out; stairs to first floor severely damaged by fire; and contents of back room on ground floor and front room on first floor damaged by fire and smoke and water.	Neighbours, with buckets of water.
Sunday, 12 March.	7-3 p.m.	7-5 p.m.	32, Corben-street, City.	Mrs. Murray	Private dwelling.	"	Candle	None	Merc'ile Mutual, £160.	A small quantity of wearing apparel damaged by fire in back room on first floor; cupboard damaged by heat and smoke.	"
"	10-45 p.m.	None rec'd.	Pittwater Road, Manly.	Mr. James Tedd	"	Stone and brick with iron roof.	Unknown	Royal Ins. Co., £920.	Commercial Union, £600.	A cottage of ten rooms and kitchen, together with most part of contents burned out and roof off.	Burned itself out.
Monday, 13 March.	6-40 p.m.	6-49 p.m.	167, Elizabeth-street, Redfern.	E. P. Dunn	Produce merchant	Weatherboard, and iron roof.	"	None	Unknown	A small quantity of straw in back room on ground floor damaged by fire and water, and about 3 x 4 ft. of wooden partition damaged by breakage.	Inmates, with buckets of water.
Thursday, 16 March.	8-12 p.m.	8-15 p.m.	Spring-street, Waverley	Mr. Heggerty	Stable	"	Lamp, upsetting of.	None	None	About 6 x 6 ft. of side of stable damaged by fire	Neighbours, with buckets of water.
Saturday, 18 March.	12-0 noon	None rec'd.	Alice-street, Newtown.	George B. Edwards	Jam factory	Brick and iron, with iron roof.	Defective flue	National Ins. Co., £1,500.	National Ins. Co., £2,000.	About 2 x 2 ft. roof over boiler-shed damaged by fire	Employees, with buckets of water.
Sunday, 19 March.	7-50 a.m.	7-56 a.m.	Munni-street, Macdonaldtown.	William McKay	Private dwelling.	Weatherboard, and iron roof.	Tar boiling over.	None	Austra'n Mutual, £300.	Door and frame, together with wooden partition damaged by fire in kitchen at rear of premises.	Inmates and neighbours, with buckets of water.
"	4-17 p.m.	4-20 p.m.	152, Elizabeth-street, City.	W. H. E. Buxton	China and glass-ware riveter.	Brick, and iron roof.	Light thrown down.	Colonial Mutual, £100.	Colonial Mutual, £350.	Back part of counter and contents in front shop damaged by fire; rest of contents in shop and back room damaged by heat and smoke.	Neighbours and M.F.B., with buckets of water.
Thursday, 23 March.	4-56 a.m.	5-5 a.m.	Brighton-street, Petersham.	Charles Kitchen	Building in course of erection.	"	Lime slacked by rain.	None	None	About twelve bags of lime damaged by fire	M.F.B., with buckets of water.
"	11-40 p.m.	11-46 p.m.	66, Yurong-street, City.	F. Fassols	Private dwelling.	Brick, and iron roof	Candle	"	Unknown	Window curtains in front room on ground floor	Inmates, with buckets of water.
Monday, 27 March.	5-24 p.m.	5-27 p.m.	Little Bourke-street, City.	James Cowan	Stable	Brick, and iron over shingle roof	Defective flue	"	None	Roof of stable damaged by fire and cutting away	Paddington Vol. F. Co., with one hydrant.
Tuesday, 28 March.	5-44 p.m.	5-47 p.m.	47, Little Hay-street, City.	Thomas Lang	Private dwelling.	Brick, and slate roof.	Matches, careless use of.	"	Unknown	A small quantity of wearing apparel damaged by fire in front room on ground floor.	Inmates and M.F.B., with buckets of water.
"	8-0 p.m.	8-2 p.m.	43, Denison-street, Ultimo.	W. Simmons	Cooper	Wood, and iron roof.	Smoking tobacco.	Building and contents, Scottish Union and Nat. of New Zealand, £1,000.	"	A small quantity of coopers' tools and materials damaged by fire in workshop; uprights of shop slightly damaged by fire.	M.F.B., with buckets of water.
"	9-30 p.m.	9-33 p.m.	No. 6, Sir John Young's Crescent.	Mr. W. C. Brown	Private dwelling.	Brick, and iron roof.	Candle	None	City Mutual, £200	Furniture and a quantity of wearing apparel damaged by fire and water in back room on ground floor.	M.F.B. and neighbours, with buckets of water.
Wednesday, 29 March.	9-20 p.m.	None rec'd.	Church-street, Parramatta.	T. Mulahy	Draper	"	Light thrown down.	Mercantile, £1,500	Unknown	Contents of front shop very slightly damaged by heat and smoke.	Employees, with buckets of water.
Thursday, 30 March.	6-53 p.m.	6-57 p.m.	117, Devonshire-street, Strawberry Hills.	Mrs. Mary Eary	Boarding-house.	Brick and slate roof.	Candle	None	"	Window curtains and a small quantity of furniture in back room on second floor damaged by fire and water.	M.F.B. and inmates, with buckets of water.

LIST and Details of Fires attended by, or reported to, the Metropolitan Fire Brigade, or Volunteer Fire Companies—continued.

Date.	When discovered.	Time of Call.	Locality.	Name of Tenant.	How Premises occupied.	Construction of Premises.	Origin or supposed cause of Fire.	Insurances		Extent of Damage, &c.	Extinguished by
								Contents.	Building.		
1893. Friday, 31 March.	2 19 a.m.	2-21 a.m.	79, King street, City ..	James Sharpe	Tobacconist	Brick, and iron roof.	Light thrown down.	Liverpool and London and Globe, £50.	City Mutual, £1,000.	Counter and contents in back room on ground floor severely damaged by fire; skylight broken, and contents in room damaged by fire and heat.	M.F.B., with hydrant.
Saturday, 1 April.	1-35 p.m.	None rec'd.	Harrow Road, Auburn..	Building in course of erection.		.....	Spark from fire ..	.....	Mercantile, £200.	A weatherboard cottage of five rooms burned out and fallen down.	Burned itself out.
Tuesday, 4 April.	9-0 p.m.	None rec'd.	Glenmore Road, Pad- dington.	H. H. Stoddart, "Royal Hotel."	Licensed victual- ler.	Brick, and iron roof.	Fireworks ...	Northern Insurance Company, £1,000, building and contents.	.....	Contents of back room on first floor damaged by fire and water.	Inmates, with buckets of water.
Friday, 7 April.	10 23 p.m.	10 25 p.m.	861 & 863, George-street, City.	Wright Bros.	Boot and shoe importers.	"	Matches, careless use of.	Alliance Insur- ance, £800.	Unknown	A small quantity of paper dressing and shelves in front shop- window, and three pairs of boots, very slightly damaged by fire.	Inmates, with coat.
Wednesday, 12 April.	9 0 p.m.	None rec'd.	No. 4, Simpson's-place, -off Castlereagh-street.	Mrs. Nelson	Private dwelling..	"	Candle	None	None	A small quantity of wearing apparel damaged by fire and water; also walls and ceiling slightly damaged by heat and water in front room on first floor, ceiling under damaged by water.	Inmates and neighbours, with buckets of water.
Sunday, 16 April.	1-13 a.m.	1-15 a.m.	1, Point Piper Road, Woollahra	Unoccupied cottage ....	.....	Brick, and slate roof.	Light thrown down.	.....	Unknown	Some rubbish and paint burned in wash-house at rear of premises.	Woollahra Vol. Fire Co., with buckets of water.
Monday, 17 April.	8-35 a.m.	8-42 a.m.	Johnston-street and Parramatta Road, Leichhardt.	Wm. James Rofe, "Rofe's Family Hotel."	Licensed victual- ler.	Brick, and tile roof.	Matches, children playing with.	Colonial Mutual, £600.	Mercantile Mutual, £400.	Back bed-room and contents damaged by fire and water on first floor, ceiling under damaged by water.	Inmates, with buckets of water.
Wednesday, 19 April.	11-58 p.m.	11-56 p.m.	Leichhardt-street, Waverley.	Duncan Weir	Baker	Brick, and iron roof.	Spark from fur- nace.	None	None	A small quantity of firewood burned in bake-house at rear of premises.	Waverley Vol. Co., with buckets of water.
Saturday, 22 April.	4-30 a.m.	None rec'd.	Cleveland and Bourke Streets, Surry Hills.	R. M'Sweeney, "Cleve- land Inn Hotel."	Licensed victual- ler.	"	Matches	"	Austra'n Mutual, £1,200	Drawer of counter containing a small quantity of matches, cards, &c., with about 1 ft. of counter in front bar damaged by fire.	Inmates, with water.
Monday, 24 April.	10-22 p.m.	10 25 p.m.	294, Elizabeth-street, City.	Mathew Flynn	"	"	Candle	City Mutual, £300.	Mer Mutual, £500.	Window curtains burned and window frame scorched in back room on second floor.	Inmates, with buckets of water.
Friday, 28 April.	8 10 a.m.	None rec'd.	Thornleigh, Stanmore Road, Petersham.	Mrs. A. J. Murray ..	Private dwelling.	Brick, and slate roof.	Gas stove, care- lessness with.	Austra'n Mutual, £1,400.	Austra'n Mutual, £2,500.	Gas piping and shelving over stove burned in kitchen in rear of premises.	"
Monday, 1 May.	4-57 a.m.	5-0 a.m.	Bridge Road, N. Glebe..	Thomas & Christie ..	Coach builders ..	Wood and iron, with iron roof.	Unknown	Mer Mutual, £275.	Unknown	Workshop of one floor about 15 x 60 ft., containing several vehicles and a quantity of plant nearly burned out and partly fallen down.	Glebe Vol. Co. and M.F.B., with three hydrants.
"	"	"	Victoria Terrace, Bridge Road	R. Neve	Private dwelling.	Brick, and iron roof.	.....	None	London and Lan- cashire, £150.	A three-roomed cottage; two windows on ground floor, burned out, door scorched, and furniture damaged by removal.	"
Tuesday, 2 May.	10 25 a.m.	10 23 a.m.	37, Buckingham-street, City.	Mr. Eernett Lewis ..	Draper	Brick, and slate roof.	.....	Mer. Mutual, £140	Austra'n Mutual, £500.	A quantity of drapery and furniture in front room on ground floor severely damaged by fire; wooden partition of same room damaged by fire, and furniture in front room on first floor damaged by removal.	M.F.B., with hydrant.
"	1-0 a.m.	None rec'd.	Atchison-street, North Sydney.	Charles Anderson	Shed building	Brick, wood, and iron roof.	Defective insula- tion of electric light wires.	Mer. Mutual, £180.	Mer. Mutual, £30	Side of shed building, about 16 x 10 ft., contents consisting of engine, electrical storage batteries, and tools damaged by fire.	Inmates, neighbours, and police, with buckets of water.
Wednesday, 3rd May.	6-25 p.m.	6 26 p.m.	180, Pitt street, City ..	Mr. N Lazrus	Oculists and opticians.	Brick, and iron roof.	Light thrown down.	Commercial Union, £1,050.	Victoria Ins. Co., £2,500.	Back staircase, from ground to first floor, destroyed; back rooms on ground and first floor, and contents and pas- sage on first floor severely damaged by fire; rest of building and contents damaged by heat, smoke, and water.	M.F.B., with three hydrants, assisted by several Vol. Cos.
"	"	"	"	A. McKinley and Co. ..	Once a Week newspaper.	"	.....	Austra'n Mutual, £75.	.....	Middle room, on first floor, and contents slightly damaged by water.	"
Friday, 6th May.	3-12 p.m.	3 15 p.m.	Bridge-road, N. Glebe..	George Painter	Produce and fuel merchant.	Iron and wood, and iron roof.	Light thrown down.	Atlas Insurance, £100.	Not insured	A building of one floor, about 40 x 20 ft., together with contents, consisting of a quantity of straw, chaff, &c., nearly burned out, and roof partly off.	M.F.B., with two hydrants.
"	3 15 p.m.	3 19 p.m.	Botany-road, Waterloo.	Alfred Williams	Baker	Brick, and shingle roof.	Unknown	None	Mercantile Mutual, £450.	Bakehouse, about 18 x 12 ft., in rear of premises, together with contents, very severely damaged by fire and water; kitchen slightly damaged by fire, and furniture by removal.	Waterloo Vol. Co. and M.F.B., with two hydrants.
Saturday, 6th May.	5 50 p.m.	5-56 p.m.	Princes and Essex Streets, City.	Miss F. McGowan ..	Private school ..	Brick, and slate roof.	Candle	"	Commercial Union, £200, United Ins. Co., £300— £500.	A small portion of bedding, some wearing apparel, and window curtains damaged by fire and water, in front room, on first floor.	Inmates, and North City Vol. F. Co., with buckets of water.
Sunday, 7th May.	6-15 p.m.	7-24 p.m.	Metropolitan Boiling- down Works, South Waterloo.	Michael Beard n, Manager.	Boiling-down Works.	Weatherboard, and iron roof.	Unknown	"	None	Stable of seven stalls and chaff-house of one floor, about 50 x 15 ft., containing about 4 tons of chaff and 1 ton of corn, and a small quantity of harness, severely damaged by fire, and building partly fallen in; three horses very severely burned.	Neighbours and M.F.B., with buckets of water.
Wednesday, 10 May.	9-15 a.m.	None rec'd.	4, Burton-street, North Sydney.	P. A. Temple	Private dwelling..	Brick, and iron roof.	Matches, children playing with.	Norwich Union, £200.	Norwich Union, £350.	Front room on first floor and contents severely damaged by fire and water; back room on first floor and contents damaged by heat and smoke and water; ceilings under damaged by water, and furniture by removal.	Inmates and neighbours, with buckets of water.

LIST and Details of Fires attended by, or reported to, the Metropolitan Fire Brigade, or Volunteer Fire Companies-- continued.

Date.	When discovered.	Time of Call.	Locality.	Name of Tenant.	How Premises occupied.	Construction of Premises.	Origin or supposed cause of Fire.	Insurances.		Extent of Damage, &c.	Extinguished by
								Contents.	Building.		
1893. Friday, 12 May.	10 17 a.m.	10-20 a.m.	124, Dowling-street, City.	G. H. Wendolz	Grocer	Brick, and iron roof.	Light thrown down.	Atlas Insurance Co., £200.	Austra'n Mutual, £550.	Front shop and contents, consisting of grocery, &c., damaged by fire, heat, and smoke; back room on ground floor and three rooms on first floor very slightly damaged by smoke.	M.F.B., with hydrant
Saturday, 13 May.	4 0 a.m.	4 5 a.m.	Riley-lane, off Riley- street, City.	J. McCarthy	Dealer	Open yard	"	None	None	A number of empty cases damaged by fire in open yard. ..	" ..
"	4-40 a.m.	4-44 a.m.	Prospect Road, Ashfield	Mrs. Heterick	Butcher	Wood, and iron roof.	Smoking meat ..	"	"	Smoke-house in rear of premises, together with contents, burned out and fallen down.	M.F.B., assisted by several Vol. Fire Co's., with one hydrant.
Sunday, 14 May.	3 37 p.m.	3-39 p.m.	47, Market-street, City.	Mrs. Evans	Restaurant	Brick, and iron roof.	Burning rubbish..	"	Liverpool & London & Globe, £3,750.	A small quantity of rubbish burned in front room on third floor.	Inmates, with water.
"	6-39 p.m.	None rec'd.	133, King-street, New- town.	Mrs. Melshnicr	Confectioner	Brick, and shingle roof.	Light thrown down.	"	Unknown	Shop window on ground floor slightly damaged by fire and water.	Inmates, with buckets of water.
Tuesday, 16 May.	11 0 a.m.	11-4 a.m.	77, Campbell-street, Glebe.	Patrick Power	Private dwelling..	"	"	"	Mercantile Mutual, £200	Bed and bedding and a small quantity of wearing apparel damaged by fire and water in back room on first floor; walls of same damaged by heat and smoke; ceiling under by water, and furniture by removal.	Glebe Vol. Co. and M.F.B., with hydrant.
"	7-10 p.m.	7-19 p.m.	Beaconsfield-street, Alexandria.	Co-operative Acid and W. Gentles, Manager.	Chemical Works	Brick and wood, with lead roof.	Kerosene lamp, explosion of.	North Queensland, building and con- tents, £3,500.	"	A building of two floors, about 150 ft. x 40 ft., and contents, consisting of a quantity of acids and chemicals, nearly burned out, and part of roof off.	M.F.B., with one steam fire engine and two hydrants, assisted by several Vol. Fire Co's.
Wednesday, 17 May.	4-5 p.m.	None rec'd.	Linden-street, North Botany.	Dougal Cameron	Private dwelling..	Weatherboard, and iron roof.	Spark from fire.	South British Insurance Co., building and contents, £175.	"	A 3 roomed cottage, about 2 ft. x 1 ft. of lining boards in partition of kitchen damaged by fire and cutting away.	Neighbours, with buckets of water.
Friday, 19 May.	2 a.m.	2-11 a.m.	241, Elizabeth-street, Redfern.	F. Pantham	Grocer	"	Unknown	City Mutual, building and contents, £250.	"	A house of three rooms, together with contents, burned out, and part of roof off.	M.F.B., with one steam fire engine, assisted by several Volunteer Fire Co's.
"	"	"	Phillip and Elizabeth Streets, Waterloo.	"	"	"	"	Colonial Mutual, building and con- tents, £200.	"	Two shops, one part unoccupied, damaged by fire and smoke, the other part, used as a grocer's shop, together with contents, damaged by fire and water; front room over shop, and contents, damaged by heat and smoke.	" ..
"	5 p.m.	6-10 p.m.	8, Middle-street, City.	William Clementson ..	Stable	Brick, and iron roof.	Light thrown down	None	Unknown	A small quantity of straw in stable at rear of premises burned.	Neighbours with buckets of water.
Sunday, 21 May.	8-30 p.m.	8-34 p.m.	Simmons-street, off Nicholson st., Balmain	A. Tingwald	Private dwelling..	Weatherboard, and iron roof.	Unknown	City Mutual, £50.	Northern In- surance Co.	A weatherboard cottage of six rooms, together with part of contents, severely damaged by fire and water; rest of contents by removal.	Balmain Volunteer Co., with one hydrant.
Wednesday, 24 May.	6-30 p.m.	None rec'd.	"Derry House," Metro- politan Rd., Newtown	Robert Nash	Workshops	Brick, and slate roof.	"	None	None	About 3 ft. x 3 ft. of lining boards and flooring in workshop; at rear of premises slightly damaged by fire.	Inmates, with buckets of water.
"	10-53 p.m.	11 3 p.m.	*Central Wharf, Wind- mill-street, City.	Captain Hodge, ship Port Jackson.	Ship	Iron	"	Pacific Marine Ins. Co., National of New Zealand, Alliance Marine Ins. Co., Commercial Union, United Ins. Co. Standard of New Zealand, Chinese Traders Co., Mer- chant's Marine, Sydney, Loyds, Victoria Ins. Co., Union Ins. Co. of Canton, Derwent and Tamar, North Queensland, South British Ins. Co., Canton Office.	In several English offices.	A ship of 2,132 tons register, contents of lower hold con- sisting of tar, sulphur, cement, &c., very severely damaged by fire and water; contents of 'tween decks damaged by heat and water; decks slightly damaged by cutting away.	M.F.B., with six steam fire engines, assisted by several Vol. Fire Co's.
Thursday, 25 May.	3-0 a.m.	None rec'd.	23, Darling-street, Bal- main.	Miss Jessie Metrose	Private dwelling..	Brick and iron roof.	Cinder from fire- place.	Mercantile Mutual, £200.	British & Colonial, £500.	Back room on first floor, together with contents very severely damaged by fire and water; kitchen under and contents slightly damaged by fire and water.	Neighbours with buckets of water.
Friday, 26 May.	12-28 p.m.	12-30 p.m.	Miller's Point, City ..	Messrs Gibbs, Bright, & Co.	Wharf	Wood	Smoking tobacco	North British, £1,000.	Unknown	A small quantity of kerosene on wharf in cases damaged by fire. Consigned to Messrs. J. Connell & Co, 356, Kent- street, City.	Employees by throwing into the harbour.
Sunday, 28 May.	12 30 a.m.	12-41 a.m.	68, Hordern-street, New- town.	James Allison	Potter	Weatherboard and iron roof.	Furnace, defect in	None	None	About 4 x 2 ft. of side of shed damaged by fire in rear of premises.	M.F.B., and inmates with buckets of water.
"	"	4 14 a.m.	Off Botany Road, Alexandria.	Edwin Godfrey, Manager.	Sydney Soap and Candle Works.	Iron and wood and iron roof.	Unknown	Building and contents: Colonial Mutual, £500; New Zealand, £2,366; Pacific, £500; Australian Mutual; £966 Imperial, £1,750; Mercantile Mutual, £100.	"	A range of shed buildings about 160 x 160 ft., together with about 800 tons of bones and bone-dust, machinery, oils, and tallow burned out and fallen down.	Burned itself out.

* Outside M.E.B. area.

List and Details of Fires attended by, or reported to, the Metropolitan Fire Brigade, or Volunteer Fire Companies—continued.

Date.	When discovered.	Time of Call.	Locality.	Name of Tenant.	How Premises occupied.	Construction of Premises.	Origin or supposed cause of Fire.	Insurances.		Extent of Damage, &c.	Extinguished by.
								Contents.	Building.		
1898. Monday, 29 May.	5 50 p.m.	None rec'd.	Bull's Head Bay, The Harbour.*	Messrs. Rae & Burghes	Hulk.....	Wood	Unknown	None	None.. ..	Old hulk burned down.	Burned itself out.
Wednesday, 31 May.	11 10 p.m.	11 14 p.m.	Maquarrie-street South and Gippo street.	Thomas Fahey, "Royal Albert Hotel."	Licensed Victualler.	Brick and iron roof.	Candle	"	Unknown	Bed, bedding, and a small quantity of wearing apparel damaged by fire in back room on first floor.	Standard Brewery Vol. Fire Co., assisted by M. F. B.
"	11 0 p.m.	None rec'd.	16, O'Connell-street, Newtown.	Mrs. Yates	Private dwelling.	Brick and wood and iron roof.	"	"	"	Bed and bedding in front room on ground floor damaged by fire and water.	Inmates, with buckets of water.
Saturday, 3 June.	11 20 p.m.	11 29 p.m.	George-street North, City.	Open ground	"	"	Light thrown down.	"	None.....	Gas service in connection with old building recently pulled down on fire.	M. F. B., with hydrant.
Saturday, 10 June.	10 20 p.m.	10 31 p.m.	Liverpool Road, Ashfield.	Mrs. Griffin.....	Private dwelling.	Brick and iron roof.	Foul chimney ..	"	"	A small portion of flooring damaged by fire in kitchen in rear of premises.	Ashfield Vol. Fire Co.
Sunday, 11 June.	5 25 a.m.	None rec'd.	Redbank, Parramatta N.	Lanreeth Giscomo ..	Stables	Wood and iron roof.	Unknown	"	"	A stable, together with contents, consisting of harness, hay, &c., burned out and fallen down in rear of premises.	Parramatta Vol. Fire Co's. No. 1, with manual engine.
Sunday, 13 June.	8 50 p.m.	"	Teloopa-street, Rodfern	John Wilson	Private dwelling..	Brick and slate roof.	Candle	"	Unknown	Bed, bedding, and a small quantity of wearing apparel damaged by fire in back room on ground floor.	Neighbours, with buckets of water.
Monday, 19 June.	6 51 p.m.	6 54 p.m.	Mary-street, City†	Joseph Brown	"	"	"	"	None	Bed and bedding burned, rest of contents damaged by heat and smoke, in back room on first floor.	M. F. B., assisted by Standard Brewery Vol. Fire Co., with buckets of water.
Wednesday, 21 June.	7 51 p.m.	7 53 p.m.	187, King-street, Newtown.	C. J. Lane	Painter.....	Weatherboard and iron roof	Unknown	"	"	A storeroom of two floors, about 30ft. x 14ft., together with contents, consisting of a quantity painters' materials, very severely damaged by fire and water in rear of premises.	M. F. B., assisted by several Vol. Fire Companies, with hydrant.
"	"	"	185, King-street.....	Messrs. Johnson Bros..	Produce merchants.	"	"	"	"	About 6 feet x 10 feet of wooden partition damaged by fire in store house at rear of premises.	"
Friday, 23 June.	2 12 p.m.	2 20 p.m.	Ganden street, Newtown.	George Dalby.....	Enameller	Brick and iron roof.	Furnace, overheat of.	"	New Zealand Ins., £50.	A cottage of two floors, about 25 x 12 ft., together with contents, consisting of leather, &c., burned out and fallen down, and thirteen panels of fencing damaged by fire.	M. F. B. with hydrant, assisted by several Volunteer Fire Companies.
"	"	"	Rose Cottage, Camden-street, Newtown	William Rose	Private dwelling..	"	"	"	Mercantile Mutual £75.	A cottage of two rooms; roof burned and fallen in; walls severely damaged by fire and water and furniture by removal.	"
Sunday, 25 June.	1 25 a.m.	1 25 a.m.	Lakey-street, Darling Harbour, City.	Messrs. Biddell Brothers. James Henderson, manager.	Manufacturing Confectioners	"	Unknown	Imperial, £2,000; Sun, £2,000; Northern, £1,000; North British and Mer., £500; Guardian, £500; total, £8,000.	Nat. of New Zealand, £1,440; South British, £1,440; Victoria, £1,440; total, £4,320.	A building of three floors, about 90 x 30 ft.; front part, together with contents, consisting of confectionery, machinery, &c., very severely damaged by fire, and roof partly off; back part damaged by smoke and water.	M. F. B. with four hydrants, assisted by several Volunteer Fire Companies.
Wednesday, 23 June.	7 55 p.m.	7 59 p.m.	150, Grafton-street, Woollahra.	C. A. Sterling	Unoccupied stable	Brick and slate roof.	"	None	None.....	A small quantity of shelving damaged by fire in stable at rear of premises	Woollahra Vol. Fire Co with buckets of water.
"	11 0 p.m.	11 6 p.m.	590, George-street, City.	A. de Lacy	Exhibition	Brick and iron roof.	"	London & Lancashire, £200.	City Mutual, £1,000	Ground floor and contents, consisting of curiosities, &c., damaged by fire, water, and smoke, and skylight broken.	M. F. B. with hydrant.
Thursday, 29 June.	1 22 a.m.	1 25 a.m.	250, Kent-street and 99, Clarence-street, City.‡	Messrs. Pyman, Hawkness, and Co.	Wholesale furniture importers.	"	Incendiarism ..	New Zealand, £5,250; South British, £1,000; Scottish Union, £1,000; Caledonia, £1,000; Northern, £1,000; Queensland Mutual, £1,000; London and Lancashire, £1,000.	United Insurance Co., £2,500.	A building of three and four floors, about 30 x 120 ft.; ground floor, first and second floors, and contents on Kent-street side, damaged by fire, heat, smoke, and water; three floors on Clarence-street side and third floor on Kent-street side and contents damaged by smoke.	M. F. B. with two hydrants, assisted by several Volunteer Fire Companies.
Friday, 30 June.	9 35 p.m.	9 40 p.m.	94, Cleveland-street, City †	A. J. Lynch	Furniture dealer.	Weatherboard and iron roof.	Unknown	Aus. Mutual, £200	Mercantile Mutual £200.	Stock in front shop and walls in passage on ground floor slightly damaged by fire; a quantity of wearing apparel burned on first floor; landing and walls and ceiling of landing slightly damaged by fire.	Neighbours and M. F. B. with buckets of water.
"	3 30 p.m.	None rec'd.	Margaret and Summonds Streets, Newtown.	Arthur G. Reeves ..	Grocer	Brick, and iron roof.	Fire, careless use of.	Palatine Insurance, £200; Norwich Union, £200.	Unknown	A quantity of paper and paper bags damaged by fire in front shop on ground floor; back door of same scorched.	Inmates, with buckets of water.
Saturday, 1 July.	6 15 p.m.	"	Queen-street, Granville.	J. E. Ellis	Private dwelling..	Weatherboard, and iron roof.	Kerosene lamp, carelessness with.	None	Commercial Union £200.	Backroom and passage and contents slightly damaged by fire.	Inmates and neighbours, with buckets of water.
"	11 30 p.m.	"	Beamish street, Mildura Estate, Canterbury.	M. Pritchard	Produce merchant.	Iron & weatherboard, & iron roof	Unknown	Aust. Mutual, £100.	Aust. Mutual, £50; Commercial Union, £50.	A building of one floor about 18 x 40 feet, together with contents, consisting of hay, corn, straw, &c. and a small quantity of furniture, burned out and fallen down.	Burned itself out.
Monday, 3 July.	7 59 p.m.	7 55 p.m.	17, Datchett street, off Darling-street, Balmain.‡	Mrs. Alice Ward ..	Private dwelling..	Weatherboard, and iron roof.	"	None.....	Aust. Mutual, £100.	Bed room on 1st floor and part of contents burned out and roof off; two rooms under on ground floor damaged by water and fire; furniture damaged by removal.	M. F. B. and Balmain Vol. Fire Co., with hydrant

* Outside M.F.B. area. † Alice Brown, aged 21 years, burned about the hands and arms. Attended at home. ‡ Previous fire 11th April, 1892; an inquest was held and a verdict of "arson against some person or persons unknown" returned. § An inquest was recommended. ¶ Nine separate fires; an inquest was held and a verdict returned of "arson against some person or persons unknown." *] Mrs. Ward, aged about 40 years, burned about the face and hands. James Ward, aged about 8 years, burned about the legs and arms.

List and Details of Fires attended by, or reported to, the Metropolitan Fire Brigade, or Volunteer Fire Companies—continued.

Date.	When discovered.	Time of Call	Locality.	Name of Tenant.	How Premises occupied.	Construction of Premises.	Origin or supposed cause of Fire.	Insurances.		Extent of Damage, &c.	Extinguished by.
								Contents.	Building.		
1893 Wednesday, 5 July.	3 0 a.m.	3-1 a.m.	232, Clarence-street, city	Lever Bros.	Sunlight Soap manufacturers.	Brick, and iron roof.	Unknown	United Insurance Co., £1,500.	Liverpool, London & Globe, £2,100, Nat of N Z., £2,100, Netherlands Ind., £2,100, United Insurance Co., £2,100, Victoria Insurance, £2,100; lift and machinery, Straits Insurance, £500.	Back part of 1st floor and contents, consisting of boxes containing brown paper wrappers, severely damaged by fire; contents of ground floor and basement floors damaged by water.	M.F.B., with two hydrants, assisted by several Vol. Fire Cos.
"	"	"	3rd Floor, ditto	Farleigh, Netheim and Co.	Boot upper manufacturers.	"	"	Straits Insurance, £500	None	Contents on 3rd floor, consisting of leather sewing machines, &c., slightly damaged by smoke.	"
Sunday, 9 July.	8-30 p.m.	8-44 p.m.	Mitchell Road, Alexandria.	Frank Fitzjohn	Private dwelling.	Weatherboard, and iron roof.	"	Building and contents—Australian Mutual, £75.	None	A cottage of 3 rooms and kitchen, together with contents, severely damaged by fire, and partly fallen in.	M.F.B., assisted by Alexandria Vol. Fire Co., with hydrant.
Thursday, 13 July.	4-10 p.m.	4-15 p.m.	Blackfriars Estate, George-street West, City.	Isaac Roff	Bill poster	Wooden	Light thrown down.	None	None	About 18 x 12 ft. of advertising boards damaged by fire	M.F.B., with hand-pump.
"	10-30 p.m.	None rec'd	Ben Boyd Road, Neutral Bay, North Sydney.	John Campbell	Produce merchant.	Brick, and iron roof.	Unknown	"	"	Stable, together with contents in rear of premises, burned out and fallen down.	St. Leonards Vol. F. Co., with hydrant.
Friday, 14 July.	11-20 p.m.	11-22 p.m.	224, Castlereagh-street, City.	B. Pottic	Hyde Park livery stables.	Wood, and iron roof.	Light thrown down.	"	"	About 4 x 2 ft. shelving damaged by fire in harness room	M.F.B. and employees, with buckets of water.
Saturday, 15 July.	8-0 p.m.	8-6 p.m.	98, Union-street, Erskineville.	Henry Child	Private dwelling	Brick, and iron roof.	Matches, children playing with.	"	"	Door and door-frame of front room on first floor slightly damaged by fire; window broken.	Inmates and neighbours, with buckets of water.
Sunday, 16 July.	11-30 p.m.	Infir. rec'd at 1-10 a.m., 17th inst.	Boundary-street and Ivey-lane, Redfern.	Robert Duncan	Cab proprietor	Weatherboard, and iron roof.	Incendiarism	London and Lancashire, £1,000	Commercial Union, £400.	Three cabs in coach house in rear of stables damaged by fire	Neighbours, with buckets of water.
Tuesday, 18 July.	12-0 a.m.	None rec'd.	Ben Buckler Estate, North Waverley.	Louis Liciaki	Private dwelling.	Stone, and iron roof.	Kerosene lamp, explosion of.	None	None	A cottage of three rooms, together with contents, burned out and partly fallen down.	Burned itself out.
Friday, 21 July.	2-30 a.m.	9-52 a.m.	294, Abercrombie street, Redfern.	W. Palmer	"	Brick, and iron roof.	Light thrown down.	"	Unknown	Window-curtains burned and frame scorched; a chair and carpet slightly damaged by fire in back room on ground floor.	Inmates and neighbours, with buckets of water.
"	8-0 p.m.	8-7 p.m.	Carlyle-street, Leichhardt.	James Barker	"	Brick, and slate roof.	Candle	"	None	Window-curtains burned, frame slightly scorched, in front room on first floor.	"
Saturday, 22 July.	9-55 a.m.	10-1 a.m.	Neutral Bay, the Harbour.	Ship "Argo"	Ship	Iron	Explosion of gas	Unknown	Unknown	Vessel severely damaged by the explosion	Employees.
Monday, 24 July.	7-45 p.m.	7-50 p.m.	355A, Pitt-street, City	Messrs. W. H Wicks & Co.	Boot importers	Brick, and iron roof.	Hot ashes	Union of N. Zealand, £1,200.	Pacific Insurance Company, £700.	Two boxes containing rubbish burned, and contents in basement slightly damaged by smoke.	M.F.B., with hydrant.
"	11-28 p.m.	11-31 p.m.	84, Darlinghurst Road, City.	Miss Read	Trained nurses' home.	"	Matches, careless use of.	None	Unknown	Window-curtains burned and frame scorched in front room on second floor.	Inmates, with water.
Tuesday, 25 July.	7-18 p.m.	7-24 p.m.	22, Rund-street, Ultimo	Miss Ellen Hind	Private dwelling	Brick, and iron roof.	Candle	None	Unknown	Dressing-table and a small quantity of wearing apparel damaged by fire, ceiling and walls damaged by heat and smoke.	Inmates with buckets of water
"	7-32 p.m.	7-34 p.m.	47, Mary-street, City	Alfred Bardwell	"	Brick, and shingle roof.	Foul chimney	"	"	About 2 x 1 ft of shingle roof damaged by fire	M.F.B., with hand-pump.
"	9-25 p.m.	9-30 p.m.	37 and 39, Botany Road, Waterloo.	John Alfred Nun	Draper	Brick, and iron roof	Light thrown down.	Guardian Ins., £200, North Brit.-L., £300, Nat. of New Zealand, £350, Q'land Mutual, £200	"	A small quantity of drapery damaged by fire under counter in front shop on ground floor.	Inmates with buckets of water.
"	10-41 p.m.	10-44 p.m.	12, Argyle Place, City.	D. M'Bride	Private dwelling	"	Candle	None	Colonial Mutual, £100.	Bed, bedding, and curtains damaged by fire; rest of contents slightly damaged by heat and smoke in front room on first floor.	M.F.B., with buckets of water.
Friday, 28 July.	7-45 p.m.	7-50 p.m.	12, Logrood-street, Erskineville.	Mrs. Mary Bell	"	"	"	"	Aust. Mutual, £200.	Bed and bedding burned; partition and door scorched, and rest of contents damaged by heat and smoke in back room on ground floor.	"
Monday, 31 July.	4-0 a.m.	5-20 a.m.	Walker and Cleveland Streets, Redfern.	Adam Boers, "Norfolk Hotel."	Licensed victualer.	"	Matches, rats at	"	Unknown	Drawer under counter in front bar, containing about ten dozen wax matches, severely damaged by fire; walls slightly damaged by smoke.	Inmates with buckets of water.
Sunday, 6 August.	3-2 a.m.	3-7 a.m.	122, Oxford-street, City	Joseph Roberts	Grocer	Brick, and iron over slate roof.	Unknown	United Ins. Co., £750; Scottish Union & Nat., £500.	Colonial Mutual, £600; Aust. Mutual, £300; Scottish Union and Nat. £250.	Front shop and contents on ground floor very severely damaged by fire, heat, and smoke and water; contents of second floor over damaged by fire, heat, and smoke. Back store on third floor, together with contents, very severely damaged by fire, and first floor partly fallen in; front and back doors broken in—all adjoining and communicating.	M.F.B., with three hydrants, assisted by several Vol. Fire Cos.

* Three separate and distinct fires. Inquest held, and a verdict returned of "Arson against some person or persons unknown." † Previous fire, 13th October, 1895. ‡ Outside M.F.B. area.

LIST and Details of Fires attended by, or reported to, the Metropolitan Fire Brigade, or Volunteer Fire Companies—continued.

Date.	When discovered.	Time of Call.	Locality.	Name of Tenant.	How Premises occupied.	Construction of Premises.	Origin or supposed cause of Fire.	Insurances.		Extent of Damage, &c.	Extinguished by
								Contents.	Building.		
1893. Sunday, 6 August.	3-2 a.m.	3-7 a.m.	124, Oxford-street	M. Cumino	Fish and oyster saloon.	Brick, with shingle and iron roof.	Unknown	None	Unknown	Roof and ceiling on second floor severely damaged by fire and water, and cutting away ceiling under, and furniture slightly damaged by water.	M.F.B., with hydrant.
"	11-10 a.m.	11-30 a.m.	11, Francis-street, City.	B. Muller	Private dwelling.	Brick, and shingle roof.	Foul chimney adjoining.	None	Unknown	About 12 ft. x 6 ft. of shingle roof slightly damaged by fire and cutting away.	M.F.B., with Tozer pump.
Monday, 7 August.	6-30 p.m.	6-38 p.m.	14, Enmore Road, Newtown.	Preston and Ford	Printers	Brick, and iron roof.	Light thrown down.	United Insurance Co., building and contents, £800.	None	A small quantity of rubbish burned in the back part of premises.	M.F.B., with Tozer pump.
"	9-20 p.m.	9-28 p.m.	44, Experiment-lane, Ultimo.	Sarah Gleeson	Private dwelling.	"	Candle	None	None	A small quantity of wearing apparel and bedding damaged by fire in front room on first floor.	Inmates and neighbours, with buckets of water.
Wednesday, 9 August.	5-49 a.m.	None rec'd.	82, Church-street, Balmain.	Mrs. Elizabeth Jones	"	Weatherboard, and iron roof.	Matches, rats at..	United Australian Mutual, £150.	United Australian Mutual, £800.	Kitchen in rear of premises, together with contents, damaged by fire, heat, and smoke.	Inmates and police, with buckets of water.
Friday, 11 August.	6-50 p.m.	6-58 p.m.	13, Wharf-street, City	Messrs. Macrae, Berendes, & Co.	Produce merchants.	Wood and iron, and iron roof.	Smoking tobacco	South British, £800.	None	About 30 bales of straw severely damaged by fire; rest of contents and roof of store slightly damaged by fire, smoke, and water.	M.F.B., with hydrant, assisted by several V.F. Co.'s.
Monday, 14 August.	5-15 p.m.	5-22 p.m.	Oxford-street, Woollahra	T. A. Shafto	Grocer	Brick, and iron roof.	Candle	Mercantile Mutual, £400.	Australian Mutual, £150.	Contents under counter, in front shop on ground floor, slightly damaged by fire.	Inmates, with buckets of water.
Wednesday, 16 August.	9-40 a.m.	9-46 a.m.	Liverpool Road, Ashfield	J. W. Buckley	Produce merchant.	Brick and wood, and iron roof.	Unknown	Imperial, £300.	Scottish and National, £400.	A building of one floor, about 40 ft. x 18 ft., containing about 70 tons of fodder, &c., burned out and fallen down.	M.F.B., with hydrant, assisted by several Vol. F. Co.'s.
"	"	"	"	Unoccupied shop and dwelling.	"	"	"	None	"	Shop and five rooms burned and partly fallen in	"
"	"	"	"	E. A. Lunne	Photographer	Brick, and iron roof.	"	Scottish Union, £100.	"	Shop and three rooms, together with part of contents, severely damaged by fire and water; rest of contents damaged by removal.	"
"	11-2 a.m.	11-5 a.m.	11, King-street, City	Anthony Vider	Auctioneer	Stone, and iron roof.	Burning rubbish	None	Unknown	A quantity of paper and rubbish burned in basement	M.F.B., with buckets of water.
Thursday, 17 August.	4-58 a.m.	5-1 a.m.	349-351, George street, City.	Messrs. David Jones & Co.	Drapers and mercers.	Brick, and iron roof.	Unknown	In several colonial offices, £47,500; London offices, £47,500.	In several offices, £31,000.	A building of four floors, about 120 ft. x 100 ft. Back part of basement and contents severely damaged by fire, smoke, and water; rest of contents in basement by water, and contents of upper floors damaged by smoke.	M.F.B., with two hydrants, assisted by several Vol. Fire Co.'s.
Wednesday, 23 August.	4-15 p.m.	4-19 p.m.	Marlborough-street, Leichhardt.	H. Evans	Private dwelling.	Brick, and slate roof.	Gaspipe, defect in	None	None	Kitchen in rear of premises damaged by fire and heat, ceiling damaged by cutting away.	Police and Leichhardt V.F. Co., with buckets of water.
Friday, 25 August.	2-30 a.m.	2-58 a.m.	Wentworth-road, Burwood.	Edmund Hocksher	"	"	Smoking tobacco.	Victoria Insurance Company, £200.	Aust'ian Mutual, £300.	A quantity of furniture damaged by fire in front room on ground floor; two rooms in rear, together with contents, damaged by heat.	Burwood V.F. Co., assisted by Ashfield V.F. Co. and M.F.B., with hydrant.
Sunday, 27 August.	1-10 a.m.	None rec'd.	Miller-street, Drummoyno.	John Kennedy	Dailyman	Wood, and iron roof.	Unknown	None	Merc'ile Mutual, £100.	Cow shed in rear of premises very slightly damaged by fire.	Drummoyno V.F. Co., with hydrant.
Wednesday, 30 August.	12-55 a.m.	"	Farramatta Park, Parramatta.	Thomas B. Bishop	Boarding-house	Brick, and iron roof over shingle.	Smoking meat	Merc'ile Mutual, £175.	None	A building of ten rooms, together with contents, partly burned out and fallen down in rear of premises.	Farramatta V.F. Co., with hydrant.
"	2-58 p.m.	3-32 p.m.	51, Brisbane-street, City.	J. C. Sutton	Grocer	Brick, and slate roof.	Defect in hearth.	Merc'ile Mutual, £250.	Aust'ian Mutual, £300.	A small portion of flooring of front shop damaged by cutting away.	M.F.B., with hand-pump.
"	9-38 p.m.	9-40 p.m.	*210, 212, Kent-street, City.	Imperial Manufacturing Company.	Merchants	Brick, and iron roof.	Light thrown down.	Derwent and Tamar, £3,000; Northern, £2,000; Mercantile Mutual, £1,000; Hong Kong, £1,600.	Royal, £3,000; Guardian, £2,000.	A quantity of arrowroot, seeds, &c., damaged by fire and water on top floor, contents on floors under slightly damaged by water.	M.F.B., with hydrant, assisted by several Volunteer Cos.
Friday, 1 Sept.	9-20 a.m.	9-25 a.m.	10, Nithsdale-street, City.	John M'Knight	Private dwelling	"	Matches, carelessness with.	None	"	Bed and bedding in back room on first floor damaged by fire.	M.F.B. and inmates, with buckets of water.
"	11-30 a.m.	None rec'd.	12, Bristol-street, Petersham.	C Weeks	"	"	Light thrown down.	"	Unknown	A quantity of rubbish burned in shed in rear of premises	Inmates and police, with buckets of water.
Sunday, 3 Sept.	12-25 a.m.	12-32 a.m.	Ferndale and Margaret streets, Newtown.	J. R. Dunbar	Grocer	"	Unknown	Commercial Union, £215.	"	Shop on ground floor and contents, consisting of groceries, &c., damaged by fire and water; room in rear and staircase slightly damaged by fire.	M.F.B., with hydrant.
Monday, 4 Sept.	8-10 a.m.	8-13 a.m.	111, Queen-street, Woollahra.	Peter Feeney	Private dwelling.	Weatherboard, and iron roof.	Matches, children playing with.	None	Mer. Mutual, £270	Bed and bedding damaged by fire in back room on ground floor; lining boards of same slightly damaged by fire and heat.	Woollahra Vol. Fire Co., assisted by inmates, with buckets of water.
"	5-40 a.m.	5-46 a.m.	15, Talford-street, Glebe	William Watson	"	Brick, and iron roof.	"	"	Unknown	Bed in front room on first floor slightly damaged by fire and water.	Inmates, with buckets of water.
Tuesday, 5 Sept.	1-16 a.m.	1-18 a.m.	38 & 40, Erskine-street, City.	Bridget Egan, "Oxford Hotel."	Licensed victualer.	Stone & brick, and iron roof.	Candle	"	City Mutual, £700	Window blind and bed curtain burned and window frame scorched in front room on second floor.	"
Friday, 8 Sept.	10-5 a.m.	10-19 a.m.	Howe street, Woollahra	Mr. Williams	Private dwelling.	Weatherboard, and iron roof.	Foul chimney	"	Unknown	Small portion of flooring boards damaged by fire in back room on first floor.	Woollahra Vol. F. Co., with buckets of water.
Saturday, 9 Sept.	12-54 a.m.	1-3 a.m.	Hercules street, Ashfield	M. Stephens	Fishmonger	"	Unknown	City Mutual, £200	Aust. Mutual, £200.	Shop and five rooms and contents burned out	Ashfield Vol. F. Co., and M.F.B., with hydrant.
"	"	"	"	R. Eadie	Hairdresser and tobacconist.	"	"	None	Sun Insurance Co., £150.	Shop window broken and contents slightly damaged by water.	"
"	"	"	"	J. Parker	Bootmaker	"	"	"	Aust. Mutual, £100.	Side of building slightly damaged by fire	"

*Previous fires—22 April, 1892, 31 January, 1893.

List and Details of Fires attended by, or reported to, the Metropolitan Fire Brigade, or Volunteer Fire Companies—continued.

Date.	When discovered	Time of Call.	Locality.	Name of Tenant.	How Premises occupied.	Construction of Premises.	Origin or supposed cause of Fire.	Insurances.		Extent of Damage, &c.	Extinguished by
								Contents.	Building.		
1893. Tuesday, 12 Sept.	10 10 p.m.	10 13 p.m.	2, Glebe-street, Glebe	Patrick Toohey	Produce store	Brick and weatherboard, with iron roof.	Unknown	Union of New Zealand, £100.	Unknown	A building of one floor about 24 x 70 feet, containing about 40 tons of hay, straw, chaff, &c., nearly burned out, and part of roof off; carts and buggy severely damaged by fire; upper part of dwelling adjoining severely damaged by fire, and part of roof off.	M.F.B. and Glebe Vol. F. Co., with one steam fire engine and one hydrant, assisted by Standard Brew. Vol. F. Co.
Thursday, 14 Sept.	8 14 p.m.	8 20 p.m.	358, Park street, Paddington	D. Curtan	Private dwelling	Brick, and slate roof.	Lighting gas	City Mutual, £350	City Mutual, £350	Bed and bedding damaged by fire in back room on first floor.	Inmates, with buckets of water.
Friday, 15 Sept.	9 23 a.m.	9 27 a.m.	62, Yurong-street, City	Mrs. Thompson	"	"	Matches, rats at	None	Unknown	A small quantity of clothing and a portmanteau damaged by fire in back room on second floor.	"
Saturday, 16 Sept.	8 20 a.m.	8 29 a.m.	Broad-street, Canterbury.	R. Regan	"	"	Kerosene lamp, explosion of.	"	Austra'n Mutual, £200.	Bed and bedding and furniture damaged by fire in front room on ground floor. Window frame and door frame scorched.	Inmates and police, with buckets of water.
"	8 31 a.m.	8 34 a.m.	"Claremont," Carrington Road, Waverley.	Mr. William Hughes	"	Weatherboard, and canvas roof.	Unknown	"	None	Stable about 14 x 12 ft. and contents burned out and roof off; two ponies slightly burned.	Waverley Vol. F. Co., with one hydrant.
"	1 5 p.m.	1 8 p.m.	125, Foster-street, City	Mrs. Mary Dawes	Dealer	Brick and weatherboard, and shingle roof	"	"	Austra'n Mutual, £200.	Shop and contents burned out and roof off; two rooms together with contents damaged by fire and heat.	M.F.B., with one hydrant.
"	3 5 p.m.	3 9 p.m.	157 1/2 George-street West, City	Henry Keyson	Jeweller	Brick, and iron roof.	Cns bracket	"	None	Some benzine destroyed, and a small quantity of tools damaged by fire in front shop.	Inmates.
Sunday, 17 Sept.	1 12 p.m.	1 15 p.m.	280, Crown-street, City	T. McMahon	Private dwelling	Brick, and shingle roof.	Spark from chimney.	"	Unknown	A small portion of shingle roof damaged by fire	Neighbours, with buckets of water.
"	"	"	282, Crown-street, City	Mrs. Champion	"	"	"	"	"	"	"
Tuesday, 19 Sept.	11 42 a.m.	11 47 a.m.	22, Bank-street, City	Thomas Kirwin	"	Brick, and iron roof.	Spark from fire	"	"	Bedding and a quantity of wearing apparel severely damaged by fire in front room on first floor.	M.F.B., with buckets of water.
"	8 23 p.m.	8 26 p.m.	Hay-street, City	T. K. Dugan	Brass founder	Weatherboard and iron, and iron roof.	Hot ashes	"	None	A moulding bin damaged by fire in foundry	"
Friday, 22 Sept.	6 34 p.m.	6 40 p.m.	Queen-street, Ashfield	James Duncan	Private dwelling	Weatherboard, and shingle roof	Foul chimney	"	Unknown	A small portion of shingle roof damaged by fire	Ashfield V.F. Co.
Saturday, 23 Sept.	12 5 p.m.	None rec'd.	Retreat-street, Alexandria.	Michael Hogan	"	"	Spark from chimney	"	None	About 12 x 13 ft. of shingle roof damaged by fire and cutting away.	Inmates, with buckets of water.
"	12 48 p.m.	12 52 p.m.	8, Junction-lane, City	Alfred Dahl	"	Brick, and shingle roof.	Foul chimney	"	Merc'ile Mutual, £100.	A small portion of shingle roof damaged by fire and cutting away.	M.F.B., with handpump.
"	10 9 p.m.	10 10 p.m.	Carrington Road, Waverley.	Mr. Rutherford	"	"	"	"	Unknown	"	Waverley Vol. Fire Co., with hand-pump.
Sunday, 24 Sept.	11 30 a.m.	11 36 a.m.	9, Wellington-street, Waterloo.	R. J. Craggs	"	"	Spark from chimney.	"	Australian Mutual, £200.	About 10 ft x 6 ft. of shingle roof damaged by fire and cutting away, ceiling under damaged by water, and furniture slightly by water and removal.	Waterloo Vol. Fire Co. and M.F.B., with hydrant.
Monday, 25 Sept.	12 36 p.m.	12 40 p.m.	Birchgrove Road, Balmain.	Thomas Quill	Grocer	Wood, and iron roof.	Unknown	"	None	A shed, about 12 ft. x 5 ft., severely damaged by fire, together with about 25 feet of fencing in rear of premises.	Balmain Vol. Fire Co., with buckets of water.
"	3 35 p.m.	3 42 p.m.	445, Harris-street, City.	G. Livermore	Dealer	Brick, and iron roof.	Matches coming in contact with vapour.	"	Unknown	A small quantity of drapery and clothing damaged by fire and water in passage on ground floor.	Inmates, with buckets of water.
Thursday, 28 Sept.	5 5 p.m.	4 11 p.m.	6, Loftus-street, Leichhardt.	Mrs. Hardy	Private dwelling	Weatherboard, and iron roof.	Spark from fire	"	Royal Insurance Co, £75.	A small portion of flooring and wooden partition damaged by fire in back room on ground floor.	Inmates and neighbours, with buckets of water.
Wednesday, 4 Oct.	1 36 p.m.	1 39 p.m.	21, Wilson-lane, Redfern	Samuel Reardon	"	Brick, and slate roof.	Flue, defect in	"	Unknown	A small portion of roof damaged by fire and cutting away.	M.F.B., with buckets of water.
"	"	"	19, Wilson-lane, Redfern	David Levey	"	"	"	"	"	Ceiling slightly damaged by water in back room on first floor.	"
Thursday, 5 Oct.	10 28 p.m.	10 31 p.m.	Palace-street, Petersham	Goodin, Hitchcock & Co.	Timber merchants	Open shed, with iron roof.	Hot ashes	Building and contents, Commercial Union, £800.	"	A small quantity of rubbish burned in boiler shed.	Neighbours and M.F.B., with buckets of water.
Saturday, 7 Oct.	11 a.m.	None rec'd.	Cowper Wharf, City	Standard Paint Co.	Paint manufacturers.	Iron and wood, and iron roof.	Over-heat of boiler	Building and contents—North Queensland, £250; New South Wales Corporation, £250; Northern, £250; City Mutual, £150; British and Colonial, £250; London and Lancashire, £250; Caledonian, £250; Scottish Union, £250; New Zealand, £500; Pacific, £500; Cornwall, £375; Sun, £225; North British Mercantile, £1,375; total, £5,175	"	A small portion of lining boards slightly damaged by fire in back shop on ground floor.	Employees, with buckets of water.
"	11 0 p.m.	11 5 p.m.	36, Thorne-street, Paddington.	J. Cather	Private dwelling	Weatherboard, and iron roof.	Candle	None	Mercantile Mutual, £250.	A small quantity of wearing apparel burned; and wooden partition slightly damaged by fire in kitchen in rear of premises.	Inmates, with buckets of water.

* Frederick Costello, aged about 40 years, burned to death; an inquest was held on the 12th September, and a verdict brought in of "Accidental death." † Outside M.F.B. area. ‡ Mrs. Mary Dawes, aged about 40 years, severely burned about the face, side, and back; taken to Prince Alfred Hospital. § Edward Wolstrucroft, aged about 24 years, severely burned about the face, side, and back.

List and Details of Fires attended by, or reported to, the Metropolitan Fire Brigade, or Volunteer Fire Companies—continued.

Date.	When Discovered.	Time of Call.	Locality.	Name of Tenant.	How Premises occupied.	Construction of Premises.	Origin or supposed cause of fire.	Insurances.		Extent of Damage, &c.	Extinguished by
								Contents.	Building.		
1893. Sunday, 8 October.	1-0 p.m.	1-7 p.m.	134, Annandale-street, Leichhardt.	James Winning	Private dwelling..	Weatherboard, and iron roof.	Defective flue	None	Unknown	A small portion of shingle roof damaged slightly by fire ..	Inmates, with buckets of water.
Tuesday, 10 October.	8 20 a.m.	8 25 a.m.	120, Windsor-street, Paddington.	A. Pointing	Butcher	Wood and iron, and iron roof.	Tar boiling over	Austral'n Mutual, £100.	„	About 4 gallons of tar destroyed, and side of coach-house slightly damaged by fire.	Inmates and neighbours, with sand.
Wednesday, 11 October.	1-26 a.m.	1-29 a.m.	443, Cleveland-street, Redfern.	William Taylor	Fish-monger	Weatherboard, and iron roof.	Light thrown down.	None	„	Shed in rear of premises damaged by fire and cutting away	Neighbours and police, with buckets of water.
„	10 30 p.m.	None rec'd.	Western Road, Par- ramatta.	Cornelius Joiner	Private dwelling ..	„	Kerosene lamp, upsetting of.	Commer'l Union, £200.	Commer'l Union, £300.	Furniture damaged by fire, and small portion of wall slightly damaged by fire in front room on ground floor.	Inmates and Parramatta Vol. Fire Co., with buckets of water.
Thursday, 12 October.	7-10 a.m.	7-12 a.m.	7, St. John's Terrace, St. John's Road, Glebe.	Unoccupied	„	Brick, with iron roof.	Unknown	„	Mercantile Mutual, £700.	Cupboard under stairs burned out; stair to 1st floor destroyed, and flooring on ground floor damaged by fire.	M.F.B., with hand-pump.
Friday, 13 October.	4 30 a.m.	None rec'd.	John-street, Marrick- ville.	Mr. Myers	„	Brick and slate roof.	Candle	Imperial Ins. Co, £850.	Unknown	Bed and bedding severely damaged by fire and water in back room on ground floor.	Inmates, with buckets of water.
„	12-5 p.m.	12-15 p.m.	Bunnarong, Botany	J. Walsh	Wool wash estab- lishment.	Wood and iron, and iron roof.	Overheat of furnace.	Liverpool and London and Globe, £400.	Liverpool and London and Globe, £600.	Drying room of 2 floors, about 40 ft. x 50 ft., and contents consisting of about 20 bales of wool burned and fallen down, and 150 feet of creper severely damaged by fire and cutting away.	M.F.B., with manual engine, assisted by North Botany Vol. Fire Co., and employees, with buckets o water.
Sunday, 15 October.	4 0 a.m.	None rec'd.	Miller-street, Drum- moyne.	John Kennedy	Dairyman	Wood, and iron roof.	Unknown	None	Mercantile Mutual £120.	Side of cow-shed severely damaged by fire	Inmates, with buckets of water.
Monday, 16 October.	5-40 p.m.	5-43 p.m.	278, Castlereagh-street, City.	Mrs. K. Bruhn	Private dwelling..	Brick, and slate roof.	Light thrown down.	„	Unknown	Bed and bedding damaged by fire in attic on second floor .	Inmates and M.F.B., with buckets of water.
Tuesday, 17 October.	8-0 p.m.	8-5 p.m.	Paul-street, Waverley ..	Mrs. Goddard	„	„	Candle	„	None	Window curtains burned and furniture damaged by fire in front room on ground floor.	Police, with buckets of water.
Wednesday, 18 October.	10 44 a.m.	10 46 a.m.	234, Parramatta Road, Petersham.	Carmichael, O'Connor, and O'Neill.	Printing office ..	Brick, and iron roof.	Unknown	United Insurance Co., £400.	Unknown	Paper-stand, together with a small quantity of paper and type, damaged by fire and heat; a small portion of machinery slightly damaged by fire.	Police, with buckets of water, assisted by M.F.B.
„	1-40 p.m.	1-42 p.m.	„ Derry House," Metropolitan Road, Newtown.	Richard Nash	Private dwelling..	Weatherboard and iron, and iron roof.	„	None	City Mutual, £100	Partition of staircase in outhouse at the rear of premises slightly damaged by fire.	M.F.B., with buckets of water
Thursday, 19 October.	2-20 a.m.	2-55 a.m.	Lord-street, Newtown..	John A. Goodsell	Carpenter	Weatherboard, and shingle roof.	„	„	None	Workshop of one floor, about 33 ft. x 14 ft., together with a quantity of tools, &c., burned out and fallen down.	M.F.B., with hydrant.
„	„	„	„	Henry Burling	Bus proprietor ..	Wood, and iron roof.	„	„	„	A stable, about 36 ft. x 14 ft., containing about 3 tons of chaff, &c., and a quantity of harness, burned out and fallen down; eight horses burned to death.	„
„	„	„	Maria-street, Newtown..	Alfred Krausheer	Confectioner	Weatherboard and brick, and iron roof.	„	„	„	A store-room, about 12 ft. x 14 ft., containing a quantity of confectionery, &c.; stable and coach-house, about 36 ft. x 14 ft., containing spring cart, harness, &c., burned out and fallen down; a horse burned to death.	„
„	8-47 a.m.	8-48 a.m.	642, Jones-street, City..	James Coulburn	Private dwelling..	Brick, and shingle roof.	Spark from chimney.	„	Unknown	About 2 ft. x 3 ft. of shingle roof damaged by fire and cutting away.	M.F.B., with buckets of water.
„	12-5 p.m.	12-15 p.m.	80, George-st., Redfern	Frederick White	„	Brick, and iron roof.	Light coming in contact with curtains.	„	City Mutual, £100.	Bed-room on ground floor and contents damaged by fire and water.	Inmates, with buckets of water.
„	8-4 p.m.	8-7 p.m.	202, Palmer-street, City	Charles Fisher	Builder and con- tractor.	Weatherboard, shingle roof.	Fire-works	„	None	About 2 ft. x 2 ft. of shingle roof of workshop damaged by fire and cutting away.	„
Friday, 20 October.	3-5 a.m.	3-16 a.m.	„ Undene," Charlotte- street, Ashfield.	Carl Coderberg	Private dwelling..	Brick, and slate roof.	Kerosene lamp, upsetting of.	City Mutual, £100	Unknown	A quantity of furniture in front room on ground floor damaged by fire, window broken, and floor severely damaged by fire.	Ashfield V. F. Co., with one hydrant, assisted by M. F.B.
„	7-47 p.m.	7-48 p.m.	„ Leigh House," 233, Castlereagh-st., city.	A. P. West	Professor of dancing.	Brick, and iron roof.	Light thrown down.	Building and contents, Mercantile Mutual, £1,500.	„	Glass chandelier and table cover damaged by fire in ball- room on ground floor.	Inmates, with water.
„	10-25 p.m.	10-40 p.m.	60, Myrtle-street, Dar- lington.	James Robinson	Private dwelling..	„	Candle	None	None	Bed and bedding damaged by fire in front room on first floor.	Inmates and M.F.B., with buckets of water.

* Previous fires, August 27, 1893, and October 2, 1893.

List and Details of Fires attended by, or reported to, the Metropolitan Fire Brigade, or Volunteer Fire Companies—continued.

Date.	When discovered	Time of Call.	Locality.	Name of Tenant.	How Premises occupied.	Construction of Premises.	Origin or Supposed cause of Fire.	Insurances.		Extent of Damage, &c.	Extinguished by
								Contents.	Building.		
1893. Saturday, 21 October.	5 20 a.m.	5 20 a.m.	108, Hubert-street, Leichhardt.	Thomas Harris	Cabinet-maker .	Weatherboard, and iron roof.	Unknown	Building and contents, Mercantile Mutual, £200.	A shed building, about 15 ft. x 12 ft., used as a carpenter's shop, containing a quantity of tools, timber, &c., burned out and fallen down; 70 feet of fencing burned.	Leichhardt V. F. Co., with one hydrant, assisted by M.F.B.	
"	"	"	Charles-st., Leichhardt	James Stutchbury ..	Private dwelling	" ..	" ..	None	None	Back part of building damaged by heat.	" ..
"	7 40 a.m.	7 44 a.m.	53, Wells-street, Redfern	William Jennings	" ..	Brick and shingle roof.	Spark from chimney.	" ..	Unknown	About 3 ft. x 7 ft. of shingle roof damaged by fire and cutting away.	M.F.B., with Tozer pump.
Sunday, 22 Oct.	1 3 a.m.	1 3 a.m.	In rear of 316, Parramatta Road, Peter- sham.	John Uren	Billiard saloon ..	Weatherboard, and iron roof.	Unknown	Imperial Ins. Co., £200.	Unknown	A building of one floor about 20 x 40 ft. containing two billiard tables, &c., burned out and fallen down.	M.F.B., with one steam fire engine, assisted by several V.F. Co.'s, with three hy- drants.
"	"	"	316, Parramatta Road..	George Dawson	Hairdresser	" ..	" ..	None	" ..	Shop of one floor, 12 x 14 ft., together with contents burned out and fallen down.	" ..
"	"	"	In rear of 316, Parramatta Road.	S. J. Payne	Stovemaker	" ..	" ..	Building and contents of three shops in Commercial Union, £300.	" ..	Shop and stables, together with contents, burned out and nearly fallen down	" ..
"	"	"	814, Parramatta Road..	H. O. Williams	"Poplar Tree" Arcade.	" ..	" ..	None	Colonial Mutual, £175.	A building of one floor, about 30 x 108 ft., together with seven vehicles, burned out and fallen down.	" ..
"	"	"	312, Parramatta Road..	" ..	Coachbuilder	" ..	" ..	Building and contents, New Zealand, £150.	Commercial Union.	Front office and contents severely damaged by fire; shop in rear and contents severely damaged by fire and water	" ..
"	"	"	318, Parramatta Road..	S. J. Payne	Stove manufact- urer.	" ..	" ..	" ..	" ..	Shop, about 15 x 40 ft., containing a quantity of stoves, &c., burned out and fallen down.	" ..
"	"	"	320, Parramatta Road..	" ..	Fruiterer	" ..	" ..	" ..	" ..	Shop and dwelling, about 16 x 55 ft., and contents nearly burned out and fallen down.	" ..
"	"	"	322, Parramatta Road..	W. T. Dodd	Bootmaker	" ..	" ..	None	Commercial Union.	Shop of one floor, about 14 x 14 ft., together with contents, nearly burned out and partly fallen down.	" ..
"	"	"	324, Parramatta Road.	A. A. Barrell	Private dwelling	" ..	" ..	" ..	Mercantile Mutual, £100.	A building of two floors, the roof of back part of premises slightly damaged by fire, and furniture by removal.	" ..
"	10 45 p.m.	10 51 p.m.	24, Stephen street, Bai- man.	Unoccupied premises ..	" ..	" ..	" ..	" ..	Aus. Mutual, £200, Phoenix, £200.	About 4 x 6 ft. of flooring damaged by fire in loft over stable in rear of premises.	Pohor, with buckets of water.
Tuesday, 24 October.	4 54 a.m.	4 57 a.m.	58, Castlereagh-street, City.	Mrs. Champion, Licensed victualler, "Queenland Club" Hotel.	" ..	Brick, and iron roof.	Candle	United Insurance Co., £700.	Unknown	Window-blind and looking-glass burned; dressing-table and window-frame damaged by fire in back room on first floor.	Citizen, with water, assisted by M.F.B.
Thursday, 26 October.	12 25 a.m.	12 26 a.m.	Miller-street, Drum- moyne.	*John Kennedy	Dairyman	Weatherboard, and iron roof.	Unknown	None	Mercantile Mutual, £40.	Stable, together with a quantity of hay, &c., and one vehicle burned out and fallen down.	Burned itself out.
"	11 10 a.m.	11 13 a.m.	87, Surrey-street, Dar- linghurst.	E. A. Hope	Painter	Weatherboard and iron, with iron roof.	" ..	Mercantile Mutual £500.	Unknown	Shed about 12 ft. x 20 ft., containing a quantity of paint, oil and wall-paper, nearly burned out, and partly fallen down.	M.F.B., and Paddington Brewery V.F. Co., with two hydrants
"	6 30 p.m.	6 41 p.m.	120, Eveleigh-street, Redfern.	Messrs. Thompson & Sons.	Iron foundry ..	Weatherboard, and iron roof.	Overheat of fur- nace.	Unknown	" ..	About 3 ft. of coke staging and a quantity of bags damaged by fire.	Neighbours, with buckets of water.
"	8 23 p.m.	8 27 p.m.	33½ Glebe Road, Glebe.	John Baker	News agent	Brick, and iron roof.	Gas bracket	None	None	A small quantity of newspapers and stationery in shop window damaged by fire and water.	Inmates and neighbours, with buckets of water.
"	9 0 p.m.	9 2 p.m.	Macquarie-place, City	Sydney Tram and Omni- bus Company	Offices	" ..	Light coming in con- tact with vapour.	Australian Mutual, £300.	Unknown	A small quantity of benzine destroyed, and a small portion of flooring slightly damaged by fire.	Employees, with buckets of water.
Friday, 27 October.	10 10 a.m.	10 32 a.m.	Young-street, Burwood.	Mrs. J. W. Bowman	Private dwelling..	Wood, and iron roof.	Unknown	None	None	Out-house, about 12 ft. x 30 ft., containing a quantity of furniture, crockery, tools, &c., nearly destroyed, and a fernery, containing a quantity of pot plants, nearly burned out.	Burwood V.F. Co., with one hydrant.
Sunday, 29 October.	11 10 a.m.	11 12 a.m.	Dalhousie-street, Ash- field.	Edward Betis	Gardener	" ..	Spark from fire- place.	" ..	Unknown	About 2 ft. x 4 ft. of lining boards, and a small portion of roof damaged by fire; contents slightly damaged by heat in front room on ground floor.	Inmates and neighbours, with buckets of water.
Monday, 30 October.	1 48 a.m.	1 48 a.m.	44, Alfred-street, North Sydney.	John A. Marshall	Grocer	Brick, and iron roof	Unknown	London and Lan- cashire, £600.	Unknown	Shop and three rooms over, together with contents, burned out; contents of basement under severely damaged by water.	St. Leonard's V.F. Co., with two hydrants.
"	"	"	46, Alfred-street	H. F. Pitman	Butcher	" ..	" ..	None	Australian Mutual, £250.	Front shop and contents slightly damaged by fire	" ..

* Previous fires—August 22, 1893; October 2, 1893; October 15, 1893

List and Details of Fires attended by, or reported to, the Metropolitan Fire Brigade, or Volunteer Fire Companies—*continued.*

Date.	When discovered.	Time of Call.	Locality.	Name of Tenant.	How Premises occupied.	Construction of Premises.	Origin or supposed cause of Fire.	Insurances.		Extent of Damage, &c.	Extinguished by
								Contents.	Building.		
1-03, Monday, 30 Oct.	1-48 a.m.	1-48 a.m.	42, Alfred-street	John Tauro	Fruiterer	Weatherboard, and iron roof.	Unknown	None	Unknown	Front part of shop very slightly damaged by fire; contents, consisting of fruit, damaged by water.	St. Leonards V.F. Co., with two hydrants.
"	1-45 p.m.	1-51 p.m.	3, Blackburn-street, City.	John Hardiman	Private dwelling	Brick, and shingle roof.	Foul chimney	"	Mercantile Mutual, £150.	About 2 ft. x 2 ft. of shingle roof slightly damaged by fire.	Standard Brewery V.F. Co., with hand-pump, assisted by M.F.B.
Tuesday, 31 October	1-0 a.m.	1-25 a.m.	*Cardigan-street, Auburn	W. G. Entwistle	Dwelling and workshop.	Brick and weatherboard, & iron roof	Unknown	Mercantile Mutual, £25.	"	A weatherboard cottage of eight rooms, used as a dwelling and opticians' workshop, together with contents, burned out and fallen down.	Burned itself out.
Wednesday, 1 Nov.	2-13 a.m.	2-16 a.m.	98, Albion-street, City	W. C. Coombes	Grocer	Brick, and iron roof.	"	Australian Mutual, £350.	Australian Mutual, £250.	Counter and contents under, consisting of groceries, &c., burned in front shop on ground floor.	Standard Brewery V.F. Co., with one hydrant, assisted by M.F.B.
Friday, 3 Nov.	11-5 a.m.	11-26 a.m.	21, Ferry street, Glebe	James Swan	Private dwelling	Weatherboard, and iron roof	Tar boiling over	None	None	About 10 gallons of tar destroyed in stable in course of erection at rear of premises	Inmates, with sand.
Saturday, 4 Nov.	1-9 p.m.	1-10 p.m.	Fotheringham-street, Marrickville.	G. Cook	"	Weatherboard, and shingle roof.	Spark from chimney.	"	Unknown	A small portion of shingle roof damaged by fire	Inmates and neighbours, with buckets of water.
"	11-40 p.m.	11-50 p.m.	9, Regent-street, Paddington.	Mr. Blakely	"	Brick, and iron roof.	Gas bracket	"	None	Window curtains burned in front room on ground floor	Inmates, with blankets.
Sunday, 5 Nov.	9-40 p.m.	9-44 p.m.	330, Oxford-street, Paddington.	H. Crabb	Druaper	"	Candle	Mercantile Mutual, £400.	Mercantile Mutual, £300.	Contents in shop window on ground floor slightly damaged by fire.	Inmates, with water.
Wednesday, 8 Nov.	8-22 a.m.	8-24 a.m.	Woodland-street, Marrickville.	Samuel Magler	Private dwelling	"	Tar boiling over	None	Mercantile Mutual, £300.	A small portion of fencing damaged by fire in rear of premises	Inmates, with sand.
Thursday, 9 Nov.	2-55 a.m.	2-58 a.m.	26, King-street, City	T. W. Helmore	Baker	Brick, and iron roof.	Spark from chimney.	Mercantile Mutual, £150.	"	About 5 x 5 ft. of roof over bake-house damaged by fire in rear of premises.	Inmates and M.F.B., with buckets of water.
Friday, 10 Nov.	10-44 p.m.	10-46 p.m.	George-street, City	N.S.W. Government	Boat sheds	Weatherboard, and iron roof.	Unknown	None	None	A building of two floors, about 120 x 40 ft. First floor and contents severely damaged by fire and water; contents under, consisting of sails, &c., slightly damaged by fire and water.	M.F.B., with two hydrants, assisted by several V.F. Co.'s.
Friday, 17 Nov.	1-50 p.m.	1-53 p.m.	Cook's River Road, St. Peters.	G. A. Howard	Produce merchant.	Brick, and iron roof.	"	Alliance Assurance Co., £200.	Unknown	About fifty-five bales of hay, straw, chaff, &c., damaged by fire and water in store on ground floor.	Inmates and neighbours, with buckets of water.
Saturday, 18 Nov.	6-15 p.m.	6-17 p.m.	Douglas-street, Redfern	Messrs. Shortland & Sons	Carriers	Weatherboard, and iron roof.	Matches, children playing with.	None	Australian Mutual, £200.	Manger and small quantity of straw bedding slightly damaged by fire and water in stables.	Inmates, with buckets of water.
Sunday, 19 Nov.	3-3 a.m.	3-4 a.m.	9, Hart-street, City	Edward Knowles	Builder	Iron and wood, and iron roof.	Unknown	Mercantile Mutual, £450.	"	Workshops, about 80 x 30 ft.; first floor, together with contents, severely damaged by fire, and part of roof off.	M.F.B., Standard Brewery, Paddington Brewery, assisted by N. City V.F. Co.
"	8-48 p.m.	8-50 p.m.	4, Knox-street, City	Miss R. Patrick	Boarding-house	Brick, and iron roof.	Candle	None	Unknown	Small quantity of wearing apparel damaged by fire; and window-frame slightly damaged by fire in back room on ground floor.	Inmates and neighbours, with buckets of water.
Wednesday, 22 Nov.	8-44 p.m.	8-46 p.m.	253, Sussex-street, City	Messrs. Wise Bros.	Flour and grain merchants.	"	Spontaneous ignition.	Commercial Union, £350.	"	A small quantity of pollard in bags slightly damaged by fire and water in front store on ground floor.	M.F.B., with one hydrant.
Monday, 27 Nov.	11-8 p.m.	11-15 p.m.	Thomas-street, Petersham.	Unoccupied shop	"	Weatherboard, and iron roof.	Unknown	None	Mercantile Mutual, £25.	A weatherboard building, about 12 x 12 ft., severely damaged by fire.	M.F.B., with hydrant.
Tuesday, 28 Nov.	7-52 a.m.	7-55 a.m.	22 and 24, Campbell-street, City.	City Produce Co.; E. H. Symonds, manager	Produce merchants.	Brick, and iron roof.	"	British and Colonial, £1,000.	Imperial, £1,000; Bish. & Clinial, £1,000—£2,000.	A building of three floors, about 35 ft. x 60 ft.; ground floor and contents, consisting of a large quantity of hay, corn, bran, &c., severely damaged by fire and water.	M.F.B., with three steam fire engines, assisted by several Vol. Fire Co.'s, with four hydrants.
"	"	"	"	Boys' Brigade	Dwelling rooms	"	"	N. Queensland, £100.	"	First floor and contents slightly damaged by fire and water; back premises burned out; second floor, no damage; back wall of building severely damaged by fire and heat.	
Wednesday, 29 Nov.	11-52 p.m.	11-55 p.m.	97, Castlereagh-street (first floor), City.	Robt. Rollason	Jewellery manufacturer.	Brick, and iron roof.	Hot ashes	None	None	A small quantity of rubbish burned; flooring and partition slightly damaged by fire in front shop on first floor.	M.F.B., with hydrant.
Thursday, 30 Nov.	9-0 a.m.	None rec'd	82, Ferry-street, Balmain.	Jas. F. Milton	Cork manufacturer.	Weatherboard, and iron roof.	Light thrown down.	Mercantile Mutual, £500.	"	Window frames burned and ceiling damaged by fire; gas engine, together with contents, slightly damaged by fire and heat in workshop at rear of premises.	Employee, with small hose.
Friday, 1 Dec.	9-0 p.m.	9-6 p.m.	889, Cleveland street, City.	Saml. Alexander	Coach-builder	Wood, and iron roof.	Hot ashes	None	None	A small portion of fencing damaged by fire at rear of premises.	Employee, with buckets of water.
Sunday, 3 Dec.	2-12 p.m.	2-45 p.m.	110, Buckingham-street, City.	A. E. Brown	Private dwelling	Brick, and slate roof.	Unknown	Coml. Union, £100	Aust. Mutual, £230	Bed and bedding, together with rest of contents, severely damaged by fire in front room on first floor; furniture in front room and back room on ground floor slightly damaged by removal.	M.F.B., with hydrant.

* Outside M.F.B. area.

List and Details of Fires attended by, or reported to, the Metropolitan Fire Brigade, or Volunteer Fire Companies—continued

Date.	When discovered.	Time of Call.	Locality.	Name of Tenant.	How Premises occupied.	Construction of Premises.	Origin or supposed cause of fire.	Insurances.		Extent of Damage, &c.	Extinguished by
								Contents.	Building.		
1893, Tuesday, 5 Dec.	9-40 p.m.	9-47 p.m.	*Blackwattle Bay, the Harbour.	Ship, "Marshall S.," Captain Kuhn.	.....	Wood	Unknown	None	South British, £200.	Deck-house and after part of upper deck very severely damaged by fire, and a number of sails burned.	M.F.B., with one steam fire-engine.
"	10-16 p.m.	10-19 p.m.	123, Harbour-st., City..	Thomas Donovan	Private dwelling..	Brick and iron over shingle roof.	Kerosene lamp, upsetting of.	None	None	Window-curtains burned and contents slightly damaged by fire and water in front room on ground floor.	Inmates, with buckets of water.
Wednesday, 6 Dec.	2-55 a.m.	2-58 a.m.	†King and Sussex Sts., City, "Tarragon Hotel."	Adam Mutch	Licensed victualer.	Brick and iron roof.	Incendiarism ..	City Mutual, £400	United Ins. Co., £2,000.	A quantity of straw and rubbish burned in basement; beds and bedding damaged by fire on first, second, and third floors.	M.F.B., with one hydrant.
Thursday, 7 Dec.	11-0 p.m.	11-4 p.m.	*Gillespie's Anchor Wh'f, foot of Bathurst-street, the Harbour.	S.S. "Adelaide," Captain Dingle.	Trader	Iron	Unknown	Unknown	Com. Union, S. British.	A quantity of bedding burned, and a large quantity of chaff, produce, &c., severely damaged by fire and water in 'tween decks of after hold.	Employees, with donkey-engine, and M.F.B., with steam fire-engine, assisted by several V.F. Co.'s.
Friday, 8 Dec.	11-7 a.m.	11-9 a.m.	Riley and Ann Streets, City.	Lassetter & Co.	Bedding factory..	Brick and iron, and iron roof.	Unknown	None	None	A building of one floor, about 50 ft. x 25 ft.; back part of store and contents, consisting of kapok, mattress cases, and cushions, slightly damaged by fire and water.	M.F.B., with buckets of water.
Sunday, 10 Dec.	11-20 a.m.	11-32 a.m.	Carrington-street and Parramatta Road, Petersham.	M. J. M'Cormack	Grocer and produce merchant.	Weatherboard, and iron roof.	Spark from fire-place.	Mercantile Mutual, £800.		Two rooms on ground floor, together with two rooms on first floor, with contents, severely damaged by fire and water and part of roof off; about 3 tons of produce in store at rear damaged by fire and water, and part of roof off; contents of shop damaged by removal and windows of shop by breakage; adjoining and communicating.	Leichhardt V.F. Co. and M.F.B., with two hydrants.
Monday, 11 December	2-30 a.m.	None rec'd.	Thomas-street, Redfern	Messrs. Small & Sons .	Coopers	Brick and iron, and iron roof.	Overheat of boiler	Building and contents, United Insurance Co., £600.		A small quantity of shavings burned in boiler shed	Inmates, with buckets of water.
Tuesday, 12 December	11-51 a.m.	11-54 a.m.	1, Union-st., off Kent-street, City.	David Reed	Private dwelling	Brick, and shingle roof.	Foul chimney .	None	None	A small quantity of shingle roof damaged by fire and cutting away.	M.F.B., with hand-pump.
Saturday, 14 December	11-26 a.m.	11-28 a.m.	Gloucester-street, City..	Unoccupied	Premises	Stone, brick, and slate roof.	Vagrantssmoking	"	Unknown	About 4 x 6 ft. of flooring damaged by fire and cutting away in back room on first floor.	M.F.B.; with hydrant.
Monday, 15 December	7-40 p.m.	7-45 p.m.	9, Wentworth-lane, City.	H. Dose	Cooperage	Wood and iron, and iron roof.	Unknown	Building and contents, Northern Insurance Co., £600.		A building of two floors, about 30 x 140 ft., used as a cooperage, together with contents, very severely damaged by fire.	M.F.B., with two hydrants, assisted by several V.F. Cos.
"	7-46 p.m.	7-47 p.m.	5, Camden-street, Newtown.	Otto Pain	Private dwelling	Brick, and iron roof.	Gas bracket ..	None	Unknown	Window curtains burned and a small quantity of wearing apparel, and contents slightly damaged by fire.	Inmates, with buckets of water.
Thursday, 21 December	7-35 p.m.	7-39 p.m.	325, King-street South, Newtown.	George F. Jacobsen...	Confectioner	Brick, and slate roof.	"	"	"	A small quantity of confectionery slightly damaged by fire and water in front shop window on ground floor.	"
"	9-50 p.m.	None rec'd.	Willoughby-st., North-Sydney.	Mrs. Barton	Private dwelling	Brick and wood, with iron roof.	Candle	"	"	Window curtains burned, and window frame slightly damaged by fire in front room on first floor.	"
Saturday, 23 December	7-15 a.m.	"	64, Kippax-street, City	Hogan Brothers	Produce merchants.	Wood, and iron roof.	Tar boiling over..	"	"	About 10 gallons of tar destroyed in shed at rear of premises.	Standard Brewery V.F. Co., with sand.
Sunday, 24 Dec.	9-50 p.m.	10-0 p.m.	Womerah Avenue, City.	H. Oigbie	Private dwelling..	Brick, and slate roof.	Gas bracket ..	None	Unknown	Window-curtains burned, and bed and bedding damaged by fire in back room on first floor.	Inmates, with buckets of water.
Monday, 25 Dec.	7-15 p.m.	7-30 p.m.	74, Wilson-street, Newtown.	T. Phillips	"	Brick, and iron roof.	Light thrown down.	Victoria Ins. Co., £400.	Australian Mutual, £700.	A small quantity of bedding damaged by fire in cupboard under stairs on ground floor; staircase to first floor slightly damaged by fire.	M.F.B., with buckets of water.
Wednesday, 27 Dec.	10-2 p.m.	10-5 p.m.	43, Railway-place, City.	James Dalrymple	"	"	Candle	None	Unknown	Window-curtains burned and bedding damaged by fire and water in back room on ground floor.	M.F.B. and inmates, with buckets of water.
Sunday, 31 Dec.	8-30 a.m.	Inform'n	46-50, King-street, City.	G. W. Ellis	Post Office Coffee Palace.	"	Matches, carelessness with.	Building and contents, City Mutual, £9,000		A small quantity of wearing apparel burned; chest of drawers and bedding slightly damaged by fire and water in back room on first floor.	Inmates, with private hydrant.
"	2-40 p.m.	2-47 p.m.	Pitt-street, City	General Post Office ..	Government Building.	Stone, and slate roof.	Light thrown down.	None	None	A small quantity of paper and rubbish burned in basement.	Employees, with hydrant.
"	10-0 p.m.	10-32 p.m.	*Canterbury Racecourse, Canterbury.	Charles Bryce	Stables	Wood, and iron roof.	"	"	Unknown	Stables of one floor, about 12 ft. x 54 ft.; feed-house, containing about 5 tons of hay, corn, &c., burned out and fallen down; roof and side of stable damaged by fire; adjoining and communicating.	Ashfield Vol. Fire Co., with manual engine, assisted M.F.B.

* Outside M.F.B. area. † Twenty-five separate and distinct fires. An inquest was held, and the Coroner's jury found a verdict of arson against J. O'Neill, and against Adam Mutch of being an accessory before the fact. Both were committed for trial.

APPENDIX IX.
SUMMARY of Localities for 1893.

City and Suburbs	Casualties.	Class of Fire.									Total No. of Fires.	False Alarms.	Chimney Fires.		Grand Total.
		Slight.			Serious.			Total Destruction.					Attended with engines, and reported as house fires.	Attended with hand-pump only.	
		In-sured.	Not in-sured.	Insurance Un-known.	In-sured.	Not in-sured.	Insurance Un-known.	In-sured.	Not in-sured.	Insurance Un-known.					
CITY—															
Bourke Ward	4	1	...	...	1	...	...	...	...	6	6	3	4	19
Brisbane „	13	1	2	2	...	...	...	...	...	18	9	2	2	31
Cook „	7	5	4	2	...	...	...	...	...	18	2	2	3	25
Denison „	3	3	5	1	...	...	1	1	...	14	3	...	3	20
Fitzroy „	2	3	3	1	...	...	...	1	...	10	3	3	3	19
Gipps „	4	2	1	...	...	...	...	...	...	7	5	2	6	20
Macquarie „	10	4	4	1	...	...	...	...	...	19	8	4	11	42
Phillip „	5	3	4	...	...	...	...	...	...	12	3	2	7	24
Total	48	22	23	7	1	...	1	2	...	104	39	18	39	200
SUBURBS—															
Alexandria	1	...	2	...	...	1	...	...	4	...	...	...	4
Ashfield.....	...	1	3	2	1	...	...	1	1	...	9	4	1	...	14
*Auburn	1	1	...	2	...	...	...	2
Balmain.....	...	5	1	...	2	...	...	...	...	...	8	...	...	...	8
Botany	1	...	...	...	...	...	1	...	...	2	3	...	...	5
Barwood	1	...	...	...	...	...	...	...	1	2	2	...	...	4
Camperdown	2	...	...	2
*Canterbury	1	...	...	...	...	1	1	...	...	3	1	...	...	4
Darlington	2	1	...	...	...	...	...	...	...	3	...	...	1	4
Drummoyne.....	...	2	...	...	...	...	...	1	...	...	3	...	...	...	3
Five Dock.....	1	...	...	1
Granville	1	...	...	...	...	...	...	...	...	1	2	2	...	5
Glebe	5	3	2	...	...	...	1	...	...	11	...	...	...	11
Kogarah	2	...	...	2
Leichhardt	3	2	1	...	...	...	...	...	...	6	2	...	1	9
Macdonaldtown	2	...	1	...	...	...	...	...	...	3	...	...	1	4
Manly	1	...	...	1	...	...	...	1
Marrickville.....	...	4	1	1	...	...	...	...	...	...	6	1	1	...	8
Newtown	5	4	5	...	...	...	2	...	...	16	5	1	3	25
North Sydney	2	...	1	...	...	...	2	...	...	5	...	...	...	5
Parramatta	5	...	...	1	...	...	...	1	...	7	1	...	...	8
Paddington	5	1	...	...	...	...	...	...	...	6	...	...	...	6
Petersham.....	...	4	1	1	1	...	...	1	...	...	8	...	...	...	8
Randwick.....	...	1	...	...	...	...	...	...	...	...	1	1	...	...	2
Redfern.....	...	8	2	4	1	...	...	1	...	...	16	...	2	1	19
*Rockdale	1	...	...	...	...	...	1	...	...	2	...	...	...	2
St. Peters	1	...	...	...	...	...	...	...	...	1	1	...	...	2
Waterloo	4	...	...	1	1	...	1	...	...	7	...	2	...	9
Waverley	1	4	2	...	...	...	...	1	...	8	...	1	...	9
Woollahra.....	...	3	2	1	...	...	...	...	...	...	6	1	1	...	8
*Strathfield.....	...	1	...	...	...	...	...	...	...	...	1	...	...	...	1
*The Harbour	1	...	...	3	...	1	...	1	...	6	...	...	...	6
Totals	118	48	44	19	2	2	17	7	1	258	68	29	46	401

* Outside the Metropolitan Fire Brigade area.

APPENDIX X.
SUMMARY of Trades for 1893.

Trades	Class of Fire.									Totals.
	Slight.			Serious.			Total.			
	Insured.	Not insured.	Insurance Unknown.	Insured.	Not insured.	Insurance Unknown.	Insured.	Not insured.	Insurance Unknown.	
Auctioneers			2							2
Amusement, places of	2									2
Bakers and Confectioners	2	2	2	1						7
Bedding Manufacturers		1					1			2
Boarding-houses	2		2							4
Boiling-down Works					1					1
Bootmakers	2									2
Brassfounders		1	1							2
Builders and Contractors		2		1						3
Buildings in course of Erection	1	1						1		3
'Bus Proprietors	1						1			2
Butchers	2	1								3
Billiard Saloons							1			1
Cabinet-makers & Upholsterers	1							1		2
Candle Works	1						1			2
Chemical Works				1						1
China and Glassware Dealers	1									1
Coachbuilders		1		1						2
Coffee Palaces	1									1
Commission Agents & Produce Merchants	4		2	1			5			12
Coopers	3			1						4
Cork Manufacturers	1									1
Dairies	2						1			3
Drapers and Milliners	5									5
Fancy Goods, &c.	2									2
Fishmongers	1		1	1						3
Fruiterers and Greengrocers	1						1			2
Furniture Dealers	2			1						3
Government Buildings		1			1					2
General Dealers		1	1	1						3
Grocers	8	1		3			1			13
Jam Factories	2									2
Leather Importers	1									1
Licensed Victuallers	9		2							11
Nurserymen			1							1
Offices	2									2
Open Yards	2	1								3
Opticians	1						1			2
Painters and Decorators	1	2					2			5
Potters		1								1
Printers and Stationers	2	1								3
Private Dwellings	33	23	27	2			1	1	1	93
Restaurants	3									3
Schools	2									2
Sheds	2							1		3
Ships				4		1		1		6
Soap Works			1							1
Stables	1	5	1			1		2		10
Timber Merchants	1									1
Tinsmiths				1						1
Unoccupied Premises	2		1							3
Warehouses	2									2
Jewellers and Watchmakers		2								2
Wharf	1									1
Wool-wash Establishments							1			1
Workshops	1	1								2
	118	48	44	19	2	2	17	7	1	258

APPENDIX XI.

HOURLY and Daily Summary of Calls for 1893.

Hour.	Sunday.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.	Total.
A.M., 1st	5	1	3	3	2	1	2	17
„ 2nd	3	1	1	2	2	7	1	17
„ 3rd	2	1	...	3	1	2	2	11
„ 4th	2	3	2	1	2	1	3	14
„ 5th	2	2	1	1	1	1	1	9
„ 6th	1	1	1	1	1	1	1	7
„ 7th	1	1	1	...	1	1	2	7
„ 8th .....	...	2	1	1	2	1	1	8
„ 9th	1	3	3	2	1	2	2	14
„ 10th .....	...	2	1	1	...	3	2	9
„ 11th	4	1	4	1	2	2	2	16
„ 12th	1	1	1	...	2	1	2	8
P.M., 1st	2	4	2	3	2	2	3	18
„ 2nd	2	2	1	2	2	3	1	13
„ 3rd	2	2	1	2	2	5	3	17
„ 4th	4	2	2	3	2	1	3	17
„ 5th	1	4	3	1	3	3	2	17
„ 6th	2	5	1	6	4	4	5	27
„ 7th	3	7	8	5	3	10	1	37
„ 8th	4	4	6	3	13	2	3	35
„ 9th	5	2	6	2	3	2	4	24
„ 10th	4	2	3	4	3	9	4	29
„ 11th	1	3	1	7	2	3	7	24
„ 12th	1	1	1	...	1	1	1	6
	53	57	54	54	57	68	58	401

APPENDIX XII.

WEEKLY Summary of Calls for 1893.

Week.	Casualties.	False Alarms.	Chimney Alarms.	Fires.	Totals.	Week.	Casualties.	False Alarms.	Chimney Alarms.	Fires.	Totals.
1st ending Jan. 7	...	4	1	6	11	28th ending July 15	...	1	3	6	10
2nd „ „ 14	...	1	...	5	6	29th „ „ 22	...	3	1	5	9
3rd „ „ 21	4	4	30th „ „ 29	...	3	...	7	10
4th „ „ 28	...	1	...	7	8	31st „ „ Aug. 5	...	...	...	1	1
5th „ Feb. 4	...	2	1	8	11	32nd „ „ 12	...	2	2	6	10
6th „ „ 11	...	3	...	2	5	33rd „ „ 19	...	4	2	4	10
7th „ „ 18	5	5	34th „ „ 26	...	2	3	3	8
8th „ „ 25	1	3	4	35th „ „ Sept. 2	...	...	...	6	6
9th „ Mar. 4	...	1	...	5	6	36th „ „ 9	...	2	5	6	13
10th „ „ 11	...	1	1	2	4	37th „ „ 16	...	2	5	7	14
11th „ „ 18	1	5	6	38th „ „ 23	...	1	4	7	12
12th „ „ 25	1	4	5	39th „ „ 30	...	3	...	4	7
13th „ April 1	7	7	40th „ „ Oct. 7	...	2	...	4	6
14th „ „ 8	...	1	1	3	5	41st „ „ 14	...	...	2	7	9
15th „ „ 15	...	3	...	1	4	42nd „ „ 21	...	1	3	13	17
16th „ „ 22	...	2	...	4	6	43rd „ „ 28	...	1	...	9	10
17th „ „ 29	1	2	3	44th „ „ Nov. 4	...	...	3	8	11
18th „ May 6	...	1	1	7	9	45th „ „ 11	...	1	2	4	7
19th „ „ 13	1	5	6	46th „ „ 18	...	...	2	3	5
20th „ „ 20	...	2	2	7	11	47th „ „ 25	...	1	1	3	5
21st „ „ 27	5	5	48th „ „ Dec. 2	...	...	1	5	6
22nd „ June 3	...	3	...	6	9	49th „ „ 9	...	1	1	6	8
23rd „ „ 10	2	1	3	50th „ „ 16	...	2	1	4	7
24th „ „ 17	...	1	4	1	6	51st „ „ 23	...	7	3	5	15
25th „ „ 24	2	4	6	52nd to end of year	...	2	3	6	11
26th „ July 1	...	1	3	9	13						
27th „ „ 8	5	1	6						
						Total .....	...	68	75	258	401

APPENDIX XIII.

MONTHLY Summary of Calls for 1893.

Months.	Casualties.	False Alarms	Chimney Alarms.		Class of Fire.									Grand Total.
			Attended with engines, and reported as house fires.	Attended with hand pump only	Slight.			Serious.			Total destruction.			
					Insured	Not insured.	Insurance unknown.	Insured	Not insured.	Insurance unknown.	Insured	Not insured.	Insurance unknown.	
January	6	.....	1	18	...	3	1	...	.....	3	2	.....	34
February	5	1	1	8	5	1	..	...	.....	1	...	.....	22
March	2	1	2	9	4	5	...	...	.....	1	...	.....	24
April	6	1	1	6	4	.....	...	...	.....	1	...	.....	19
May	5	2	2	13	5	3	5	1	.....	1	1	.....	38
June	3	1	8	4	6	.....	2	...	.....	1	1	.....	26
July	7	6	5	10	4	4	1	...	1	1	2	.....	41
August	8	2	4	8	2	3	3	...	.....	1	...	.....	31
September	8	4	10	9	5	9	2	...	.....	1	...	.....	48
October	4	.....	6	18	5	7	...	.....	6	1	1	.....	48
November	2	4	3	9	3	2	2	1	.....	...	...	.....	26
December	12	7	3	6	5	7	3	...	1	...	.....	.....	44
1893	68	29	46	118	48	44	19	2	2	17	7	1	401	
1892	1	47	29	46	194	54	22	20	1	20	3	.....	437

APPENDIX XIV.

COMPARISON of Calls for the period 1884 to 1893.

	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	Total.
Casualties .....	...	...	...	...	...	...	2	1	1	...	4
False alarms	50	42	32	14	35	33	44	52	47	68	417
Chimney alarms	46	64	40	60	61	45	52	33	75	75	551
Fires, slight	91	160	150	174	222	179	205	216	270	210	1,877
„ serious	15	13	21	18	19	17	12	27	21	23	186
„ total destruction	23	23	34	15	25	29	18	19	23	25	234
Totals	225	302	277	281	362	303	333	348	437	401	3,269

APPENDIX XV.

SUMMARY of Causes of Fire for 1893.

Boiler, overheat of	2	Incendiarism	2
Boiling over fat, oil, tar, &c.	7	Lamp, kerosene, carelessness with	1
Burning rubbish	2	„ „ explosion of	4
Candle	30	„ „ upsetting of	3
Children playing with matches	7	„ spirit	1
Doubtful and Unknown	88	Light thrown down	25
Defective insulation	1	Lime slaked by rain	1
Fire, careless use of	1	Matches, careless use of	10
Fireworks	2	„ rats at	5
Flac, defect in	5	Smoking meat	2
Furnace, overheat of	3	„ tobacco	6
Foul chimney	9	Spark from fireplace	4
Gas bracket or burner	9	„ furnace	2
„ explosion	1	„ another fire	5
„ heating apparatus	1	„ chimney, house	9
„ pipe, defect in	1	Vapour of spirit coming in contact with flame	2
Hearth, defect in	1		
Hot ashes	6	Total	258

APPENDIX XVI.

SUMMARY of how Fires were reported to the Brigade for 1893.

Calls given by.	Casualties.	Fires.	False alarms.	Chimney Alarms.		Total.
				Reported as House Fires.	Attended by hand-pump only.	
Alexandria Volunteer Fire Company		5	.....	.....	.....	5
Ashfield Volunteer Fire Company		11	9	1	.....	21
Balmain Volunteer Fire Company		4	.....	.....	.....	4
Burwood Volunteer Fire Company
Cabmen
Citizen		30	7	5	15	57
Drummoyne Volunteer Fire Company		2	1	.....	.....	3
Fire Alarm Telephones		65	27	13	13	118
G.P.O., per telephone		34	6	2	6	48
Glebe Volunteer Fire Company		4	1	2	.....	7
Granville Volunteer Fire Company ..		1	1	.....	.....	2
Insurance Companies		3	.....	.....	.....	3
Leichhardt Volunteer Fire Company ..		6	3	.....	1	10
Manly Volunteer Fire Company		1	.....	.....	.....	1
Newspaper Reports		2	.....	.....	.....	2
Night Watchmen
North Botany Volunteer Fire Company	3	.....	.....	3
North City Volunteer Fire Company ..		1	2	.....	1	4
Paddington Volunteer Fire Company ..		4	1	.....	.....	5
Paddington Brewery Volunteer Fire Company ..		2	.....	.....	.....	2
No. 1 Parramatta Volunteer Fire Company ..		4	1	.....	.....	5
No. 2 Parramatta Volunteer Fire Company ..		3	.....	.....	.....	3
Pilot Steamer		1	.....	.....	.....	1
Police at fires		8	.....	.....	2	10
Police—No. 1 Station		2	1	.....	1	4
Police—No. 2 Station		2	.....	.....	.....	2
Police—No. 3 Station		1	.....	1	1	3
Police—No. 4 Station
Police—Balmain Station		3	.....	.....	.....	3
Police—Central Station		2	.....	.....	.....	2
Police—Botany Station		2	.....	.....	.....	2
Police—Glebe Station		1	.....	.....	.....	1
Police—Newtown Station
Police—North Sydney Station		1	.....	.....	.....	1
Police—Petersham Station
Police—Pyrmont Station		2	.....	.....	.....	2
Police—Redfern Station		7	.....	.....	1	8
Police—Water Station		2	.....	.....	.....	2
Police—Woolloomooloo Station		3	.....	.....	.....	3
Railway		1	1	.....	.....	2
Randwick Volunteer Fire Company	2	.....	.....	2
Rookwood Volunteer Fire Company		1	.....	.....	.....	1
Seen from Station		5	.....	1	4	10
Standard Brewery Volunteer Fire Company ..		8	.....	1	.....	9
St. Leonards Volunteer Fire Company ..		2	.....	.....	.....	2
Tower, Head-quarters		9	2	.....	1	12
Waterloo Volunteer Fire Company		3	.....	1	.....	4
Waverley Volunteer Fire Company ..		5	.....	1	.....	6
Woollahra Volunteer Fire Company		5	.....	1	.....	6
.....		258	68	29	46	401

1894.

NEW SOUTH WALES.

FRIENDLY SOCIETIES.

(REGISTRAR'S REPORT ON OPERATION OF, FOR YEAR 1893.)

Presented to Parliament, pursuant to Act 37 Vic. No. 4, sec. 45.

Registrar's Report on the Operations of Friendly Societies in the year 1893.

SECTION 45 of the Friendly Societies Act directs that a report shall be prepared annually by the Registrar and laid before Parliament, such report to contain an account of his proceedings within the meaning of Part III of the Act, and of the principal matters transacted by Friendly Societies which have come under his cognisance.

The Act under which the Friendly Societies work was passed in the year 1873, and is a reproduction of the English Act of 1855, with its various amendments. The original was already condemned when the local Act was passed, but, unfortunately, its many and important defects, chiefly due to bad drafting, were faithfully reproduced in the Act of the local Legislature. The principal addition to the original Act is contained in section 6, which forbids an unregistered Friendly Society carrying on business, and imposes a penalty of £20 upon each member of the Committee of Management who shall receive money in consideration of the allotment of shares or any interest in such Society.

In the Colony of New South Wales Friendly Societies are, in the first instance, co-operative associations to secure medical attendance and medicine for members, their wives, and such of their children as may be under the age of 16 years. Next in importance to the medical benefits comes the relief afforded in case of sickness. The funeral benefits given are, as a rule, only enough to defray the expenses of burial, £10 to £15 being usually allowed on the death of a wife, and from £20 to £35 on that of the member. Added to the specific benefits are sometimes benevolent objects, but these are rarely provided for by rule, the giving of money in cases of distress being for the most part purely voluntary.

The function of Friendly Societies in the economy of social life is very important. Their great moral value is undoubted. They induce habits of self-reliance and co-operation which can hardly be over-valued in a country where the State does so much that in other lands is left to private effort. On the State itself the Societies confer an indirect benefit, which is not to be lost sight of; they cope with a large amount of poverty and distress that would otherwise fall upon the general community, and even from this point of view, if no other be taken, the Societies are worthy of every encouragement the State can offer them. The work which the Societies are doing is undeniably valuable, and this notwithstanding the frequent instances of failure. That the interests involved in Friendly Societies are considerable would appear from a statement of the number of members and the amount of funds at their disposal. The returns for 1893 are not far enough advanced to enable a statement to be made of the position of the Societies at the end of that year, but towards the close of the previous year they had on their books 71,218 members, while their accumulated funds were but a few pounds short of half a million.

It would be a happy duty if I were able to report that Societies as a whole are in a sound condition. In the absence of a valuation, nothing can be said about individual Societies, but it would be a vain expectation to look for soundness in view of the fact that the Societies, with few exceptions, are founded on a basis which is theoretically unsound. A combination of happy circumstances could alone make them solvent, and something of the kind has helped them in the past. Some lodges are fortunate enough to have members so well-to-do that they do not take the ordinary sick-pay when invalided, nor even the funeral donation payable on the death of a wife. This condition of affairs was more common in times past than to-day, for things have vastly changed of late in connection with all Societies, and the direct gain derivable from members abstaining from accepting benefits cannot be greatly reckoned on to help them in the future.

The Act provides two important safeguards which, if maintained, would certainly ensure the stability of all registered Societies. Section 7 requires an actuarial certificate, or, rather, provides that it shall not be lawful for the Registrar to grant any certificate of registration to a Society assuring any benefit susceptible of calculation by way of average, unless the tables of contribution payable shall have been certified under the hand of an actuary; and section 40 requires that the rules of every Society shall provide that all moneys received or paid on account of each and every particular fund or benefit assured, for which a separate table of contributions payable shall have been adopted, shall be entered in a separate account distinct from the moneys received and paid on account of any other benefit or fund. Neither of these safeguards has been preserved, and rules have been registered invariably without a certificate as to the adequacy of the contributions, and very frequently without a provision for the separation of funds; and I regret to have to say the unfortunate condition of affairs that now prevails is due mainly to the

neglect by the Societies of these, the most vital parts of the Act. The evil of registering scales of contributions and benefits actuarially unsound has been greatly intensified by the practice indulged in by most Societies of increasing their benefits without correspondingly increasing their contributions, and it has so happened that many Societies, which were originally started on a proper basis, have become unsound through the registration of rules increasing their benefits without touching their contributions.

On my acceptance of office I found the principle of uniform contribution—that is to say, of persons of all ages paying the same weekly or monthly subscription—obtained in nearly all Societies. In one or two cases a graduated scale was adopted, but even in these instances the graduation was imperfect and the contributions were inadequate. Some Societies were established having a uniform subscription, but with the entrance fee so graduated as to make the contributions payable proportionate to the ages of members; but only in one instance, so far as I have been able to discover, was the entrance fee charged sufficient to make up for the uniformity of the subscription. The principle of uniform contribution is essentially unsound, and finds feeble justification in the convenience of secretaries or other lodge officers. The only true system is that which makes the contribution or subscription of the Society proportionate to the risk incurred, and, as the risk rises with the age at which a member joins, it will be apparent that a scale of contribution increasing with the age at initiation is the only one under which a Society can be expected to flourish. At the present moment only two Societies—the National Independent Order of Odd Fellows and the Irish National Foresters—have a scale of contributions applying to all lodges which is adequate. Certain other Societies, viz., the Loyal Protestant Benefit Society (late Orange Benefit Society) and the Sons and Daughters of Temperance have an adequate scale applying to new lodges and new members. The Free Gardeners have adopted a scale that is almost adequate, and the Grand United Order of Odd Fellows have improved their position by adopting a scale averaging within 15 per cent. of theoretical safety.

It has been a difficult matter to get the Societies to look upon the promulgation of inadequate tables as a fraud upon the public. The members, as a rule, do not deny that actuarially it will be impossible to maintain the benefits which the rules profess to give intending members; still they hope in a vague way that something may turn up to their benefit which will enable them to carry out their engagements.

Many Societies have an erroneous idea of their solvency, arising from a consideration of the *per capita* value of their funds, leaving out of sight the indebtedness of members for benefits to be incurred in the future. The question as to the comparative solvency of different Societies depends not only on the accumulated funds under their control, but also on the ages of the members. It is a very common thing for a secretary to state that his lodge, which is worth (say) £4 per head, is in a more solvent condition than another, which is worth but £3. Such a contention would be regarded as of no weight by anyone possessed of even a slight acquaintance with the principles underlying Friendly Societies insurance, unless, in addition, some information was given as to the ages of the members of each lodge. Generally, the average age of the members is furnished, but, even then, no exact conclusion can be arrived at, as the liability to death or sickness does not increase uniformly with advancing age; and if the average age in each lodge were the same, the *per capita* value of their funds must be regarded as giving but an approximation to their true position. Let there be two lodges, A and B, each represented by a pair of members and each offering the same benefits, for which at age 18 a whole-life contribution of 7½d. per week would be required. If at the time of valuation the members of lodge A were aged 36 and 38 years, while those of lodge B were aged 20 and 54 years, the average age in each lodge would be the same, viz., 37 years. But while in lodge A the value of the future contributions would be £53 14s. and that of the future liabilities £95 11s., they would be in lodge B £51 8s. and £95 1s. respectively. Hence, to be in a solvent condition the latter should have in reserve an amount equal to £21 16s. 6d. per member, as against £20 18s. 6d. in the former—a difference of 18s. per member.

The recuperative powers of the Friendly Societies are enormous, and although their condition at the present time may be unsound, there is every reason to hope that a just appreciation of their position, and a speedy bringing about of a correspondence between contributions and benefits, joined to a vigilant watch over expenditure and investments, will enable Societies apparently insolvent to right themselves. The experience both of England and Victoria warrants this supposition, and I have no doubt that if the matter be taken in hand heartily by the Societies, and the scale of contributions be made equal to the benefits, or the benefits lowered to meet the present contributions, within a few years a very different condition of affairs will be disclosed than now meets the eye.

Very great difficulty, however, has been experienced in getting the Societies to realise the necessity for reform, and it is a matter of notoriety that the same difficulties arose in England more than thirty years ago. Societies, for the most part, are willing to increase their subscription, but this willingness does not extend so far as to cause them to make the contribution equal to the benefits. Scales of contributions adapted to any set of benefits have been prepared, and are furnished to any Society desirous of improving its condition, and indeed to every Society, whether it desires to improve its condition or is indifferent in the matter. The keen competition which has existed among Societies is responsible for the inordinate raising of the benefits and the cutting down of rates. Lodges have been opened in many parts of the Colony, where there are insufficient members to enable them to carry on business successfully. No check has been placed upon the opening of these new lodges, nor is it possible to say how such can be done. Many of the Societies are essentially religious or sectarian; and even if the law permitted, it would be unwise to refuse registration to a Society proposing to open in a district in which a religious or sectarian Society was already established, on the ground that such Society was adequate to meet the demands of the district in which it was operating, because it is notorious that many persons are entirely opposed to, and would on no account join, a Society established on a sectarian basis.

Viewed from the Registrar's standpoint, the disheartening feature connected with the Friendly Societies is that there is little or no movement towards reform from within. The improvements now in course of being effected are due to the stand I have taken up, which has been successful only because I have fortunately been able to refuse registration to new lodges with an inadequate scale of contributions, and to amendments to the rules affecting the stability of benefits; and if this power had not been conferred by law upon the Registrar, there is ample evidence that the Societies would not voluntarily make any strong effort in the way of reform. I attribute the want of interest to the fact that some of the more important benefits are remote and contingent upon events which few members realise as likely to happen to themselves, and that the present payments of members in most instances seem to them to be sufficient.

sufficient. Were it not that members generally join a Society at the earlier ages, when the sickness experienced is slight, the inadequacy of rates would ensure insolvency in a few years; as it is, a Society may exist for many years, and accumulate a fairly large sum of money before the period of continually increasing outgo and diminishing returns sets in. To the general apathy there are, it is true, exceptions. Some of the leading officers have for years been conscious of the condition into which their Societies were drifting, and have raised their voices for reform, with but little success, and even now, after the efforts which I have made, and the strong criticism to which the Societies have been subjected, I think it is not too much to say that members as a whole do not yet realise that any reform is needed, and if the pressure were removed, the Societies would speedily fall back to their former condition. To illustrate this view I may mention that several large Societies, in reforming their scale of contributions, propose while adopting an adequate payment by new members, to fix the contribution of old members below the rate for the youngest new entrant, viz., 16 years, and this notwithstanding that few existing members joined at such a low age, while the majority became members when they had reached an age much nearer 30 than 20 years. This anomaly has been pointed out to the Societies, but present members profess to believe they have an accumulation of funds sufficient to make good the deficiency of their contribution. It is probable the end will show that, relying on their invested funds to make good the deficiency, the members have had no better support than a bruised reed.

In view of the many misapprehensions that are current amongst members of Societies as to the value of their contributions compared with the cost to the Societies of the allowance payable in sickness, I have prepared a table showing the average contributions, the value of the sick benefits at each year of age, and the surplus or deficiency of the contribution compared with the benefit. The benefits usually granted in cases of sickness are 21s. per week for the first period of six months during which the sickness lasts, 15s. per week for the second six months, 10s. per week for the third six months, and 5s. per week during the remainder of the sickness. The values set down in the third column of the following table are for the sick benefits just stated, and are the amounts which, according to Ratcliffe's experience, would be paid on an average for the year of life against which each value stands. The contribution set aside to meet these benefits does not usually exceed 5½d. per week or 24s. a year, which is the amount assumed in the table.

Age.	Contribution.	Average value of sick benefits at each age.	Surplus or deficiency of contribution compared with value of sick benefits.	Age.	Contribution.	Average value of sick benefits at each age.	Surplus or deficiency of contribution compared with value of sick benefits.	
			Surplus.				Deficiency.	
20	A weekly contribution of 5½d. per week, equal to 24/- per annum.	14/5	9/7	44	A weekly contribution of 5½d. per week, equal to 24/- per annum.	25/-	1/-	
21		14/9	9/3	45		25/3	2/3	
22		15/1	8/11	46		27/6	3/6	
23		15/4	8/8	47		28/9	4/9	
24		15/6	8/6	48		30/3	6/3	
25		15/8	8/4	49		31/9	7/9	
26		15/10	8/2					
27		16/-	8/-	50		33/4	9/4	
28		16/3	7/9	51		35/2	11/2	
29		16/7	7/5	52		37/-	13/-	
				53		39/3	15/3	
30		17/-	7/-	54		41/6	17/6	
31		17/5	6/7	55		44/-	20/-	
32		17/10	6/2	56		46/8	22/8	
33		18/3	5/9	57		49/9	25/9	
34		18/8	5/4	58		53/2	29/2	
35		19/1	4/11	59		57/-	33/-	
36		19/5	4/7					
37		19/11	4/1	60		61/2	37/2	
38		20/5	3/7	61		65/9	41/9	
39		20/11	3/1	62		70/10	46/10	
				63		76/6	52/6	
40		21/7	2/5	64		82/7	58/7	
41		22/4	1/8	65		89/3	65/3	
42		23/2	-/10					
43		24/-					

The theory of sickness assurance requires that a member shall pay a sum which, with interest added, is equal to the value of the benefits he is expected to draw from the Society. At age 43 years, according to the table, the value of the contribution usually paid and the amount of sick benefits are each 24s. a year, so that it is obvious every member must pay to the Society before he reaches his forty-third year such sums as, with interest thereon, will be equal to the benefits payable after the age mentioned. The lowest age in the series given is 20 years, and from 20 to 44 years the contribution of 24s. a year would show an accumulated surplus of £8 0s. 7d., or allowing interest at 4 per cent., of £13 6s. 8d. This sum is equal to the value of benefits that would on an average be paid to a member who joined at 20 years, but this age is the only one for which the payment of 24s. a year would be sufficient. For a person joining at 25 years of age there would be an accumulation of £8 at age 44, a sum quite insufficient to meet the benefits after the last-mentioned age. A person joining at 35 years would have only a surplus of £1 12s. 6d. at age 44, which in little more than six years would be exhausted. A study of this table is earnestly urged upon the members of benefit Societies, who will be able to discover from it the reason why an accumulation of funds does not of necessity mean solvency, and why no Society can hope for ultimate stability that does not graduate its contributions according to the age at which a member joins.

I think that the powers conferred on the Registrar by section 7 of the Act in regard to the registration of new Societies are perfectly ample. The chief trouble arises in connection with the Societies already registered desirous of forming new branches, and I am face to face with the difficulty that in several of the Orders there are being formed two classes of Societies, one levying contributions more or less adequate, while the other is charging contributions in some instances 50 per cent. below what they should charge; yet both classes give, or profess to give, the same scale of benefits. There is nothing in the Act empowering

empowering the Registrar to require a Society which has been accorded registration to alter its rates of contributions, no matter how unsafe they may be.

Although a close reading of the Act does not warrant the assumption, yet it is unquestionably true that the Registrar's certificate entered upon the rules of any Friendly Society is looked upon as a guarantee of the sufficiency of the tables contained in the rules, and the competency of the Society to meet its engagements. It was, therefore, with great regret that I found myself compelled to register Societies which gave larger benefits than could be paid from the contribution laid down in the rules; but I had to choose between refusing registration to and thus destroying Societies, some of them established for a long period of years, and signing the tables which I knew to be inadequate. I adopted the latter alternative after serious consideration, having obtained from the Societies interested an ample promise that they would take an early opportunity of bettering their condition, and making the contributions correspond with the benefits professed to be given; but it has been distinctly understood that after a given date all new branches and new Societies would be registered only with adequate contribution, and under this decision the formation of new branches of some Societies has ceased until after the occurrence of their annual meetings, when proposals for amending their condition will be considered.

A great defect in the Act is the powerlessness of the Registrar to see that the rules to which he attaches his certificate are properly carried out. Violations of the law are extremely common, and I have had under my attention the case of a Society which, professing to charge an adequate contribution, has returned to the members part of their subscription by way of a bonus, and thus, while nominally complying with the requirements of the Act and its own rules, has virtually stultified the Registrar's certificate. There are also many instances of lodges abolishing their entrance fees, though such fees are really part of the subscription; and cases have been brought under attention, in which the funds have been divided amongst members notwithstanding the rules of the Society, and in defiance of the provisions of the Act. It would seem that some alteration in the Act is required, empowering the Registrar to suspend the registration certificate of a Society wilfully breaking the law.

As already mentioned, unregistered Societies are forbidden to carry on operations, and a penalty is imposed on each member of the committee breaking the law. On taking office I discovered that there were not a few of such Societies in existence. All those that were discovered were written to, and a reasonable time given them to comply with the law, or cease operations. It was found that most of the Societies in existence and unregistered were ignorant of the law, and no difficulty has been experienced so far in inducing these Societies to register or close their books. Apart from the question of illegality, the drawbacks of a non-registered Friendly Society will be gathered from an enumeration of the privileges which a registered Friendly Society enjoys, and which a non-registered Society has no claim to:—

1. It can legally hold land and other kinds of property in the names of trustees, such property passing from one trustee to another by the mere fact of appointment, and can carry on all legal proceedings in the trustees' names.
2. Whilst the only criminal remedy against fraud by its members open to an unregistered Society is confined to cases of larceny or embezzlement, a registered Society has a remedy on summary conviction whenever any person:—
 - (1.) Obtains possession of its property by false representation or imposition;
 - (2.) Having possession of any of its property, withholds or misapplies it;
 - (3.) Wilfully applies any part of such property to purposes other than those expressed or directed by the rules and authorised by the Act.
3. If an officer of the Society dies or becomes bankrupt or insolvent, or if an execution is issued against him whilst he has money or property of the Society in his possession by virtue of his office, the trustees of the Society are entitled to claim such money or property in preference to any other creditors.
4. The documents of the Society are, for the most part, free from stamp duty.
5. The Society can admit members under twenty-one and take binding receipts from them, which would otherwise be of no effect.
6. If it invests money on mortgage, such mortgages can be discharged by a mere endorsed receipt without reconveyance.
7. Its officers are legally bound to render account and give up all money or property in their possession on demand or notice, and may be compelled to do so.
8. Disputes can be legally settled according to the Society's own rules.
9. Members of registered Friendly Societies have the privilege of legally insuring money, on the deaths of their wives and children, for their funeral expenses, without having an insurable interest in their lives.
10. Members of registered Societies may dispose at death of sums payable by the Society by written nomination without a will; and this nomination may be made by youths of sixteen who cannot make a will till they are twenty-one.
11. Where there is no will and no nomination, the trustees may distribute sums without letters of administration being taken out (a person who should do so in any other case would make himself liable for the debts of the deceased).

The practice of registering Societies under names already adopted is very common. This is, undoubtedly, a cause of much confusion, and, though not forbidden by the Act, has been discouraged by me. There is a singular want of imagination amongst the promoters of Friendly Societies, which restricts their choice of names to a comparatively small list, and a reference to the register of names of Friendly Societies shows that a large number of Societies have chosen the same or very similar names, and this sometimes happens with branches of the same Order.

Several proposals have been received for the registration of Societies dividing their funds, but I have considered that the registration of such Societies is expressly forbidden by section 21 of the Act, which declares that it shall not be lawful in any Society to direct a division or appropriation of any part of the funds or property thereof, unless the claim of every member is first duly satisfied, or an adequate provision be made for satisfying such claim. As it is impossible that a dividing Society can do this, it was held by the Registrar of Friendly Societies in England that the formation of dividing Societies is forbidden by the Act; and as I concur in this interpretation of the section just referred to, I have not seen my way to extend registration to any dividing Society.

Another

Another evil which last year's operations disclose is that trades unions entrench on the grounds of Friendly Societies properly so called, and give sick and funeral benefits. The contributions required by the trades unions are seldom or never adequate to the benefits professed to be given, nor is there usually any separation of accounts, by which a portion of the contribution is set apart for benefit as distinguished from union purposes. The whole funds are available for the ordinary trade objects, with the result that when a union breaks up or its funds become exhausted, the members too often find themselves precluded by age from admittance into an ordinary benefit Society.

The practice of forming Societies in connection with workshops, mines, or other employments, has become somewhat common, and in some cases it appears that these Societies are not the voluntary associations contemplated by the Act, but that employment has been made conditional on the members joining such Societies. As the Act makes the voluntary principle the essence of a Friendly Society, the formation of Societies of the kind alluded to is clearly illegal, and registration has not been accorded to any Society in which it is believed there is compulsion on the part of employers to make their workmen join. These Societies have been declared illegal in England, but the illegality, so far as I can judge, has been due to the fact that the stoppage of the contribution from wages has been a breach of the Truck Act.

Another difficulty has arisen in connection with the registration in former years of certain Societies, which are merely branches of other associations, whose head-quarters are not in New South Wales, and whose funds to meet death benefits, and certain other contingencies, are outside the jurisdiction of the local courts. The Societies of this character have been advised that they must take such steps as will be necessary to maintain their funds within the Colony of New South Wales, and to disassociate themselves from orders outside jurisdiction.

There is a growing disposition to establish female branches of Friendly Societies, and for these there is an extremely wide field. There is not, however, sufficient experience of female sickness to warrant the preparation of special tables, and in the absence of such experience, I have adopted the same table for female lives and female sickness as for males.

There is also a tendency to establish lodges for youths and children, the necessity for which is not very apparent. There is one purpose, however, which these juvenile lodges serve; that is, they are recruiting grounds for the regular lodges, and members of juvenile Societies, when they attain their maximum age, drift naturally into the main branches of the orders.

The management expenses of all Societies form a very large percentage of the contributions, especially if comparison be made with the English Societies, but owing to the general smallness of the local Societies, it is very doubtful whether the management expenses can be very much reduced. An average of a rather large number of Societies has been taken, and it has been found that the management expenses alone, excluding medical attendance, and medicines, usually associated with management, amount to 8s. to 10s. per head yearly, which is more than the sum paid for medicine or funeral donation, and rather more than half the amount usually paid for medical attendance.

Most of the Societies look upon the loss of members as a great source of gain. Secessions from the ranks of Friendly Societies are very numerous, and the majority of seceders leave money behind them. Against this, however, it must be said that the selection is, for the most part, against the Societies. The persons who leave are young and active men, while those who are handicapped by bad health, or who know from their family history that they are liable at any moment to require assistance, rarely allow their membership to lapse. It has not yet been proved that any Society derives an advantage from the secessions over and above the loss which it suffers by the selection against it. This can only be demonstrated on an investigation of the assets and liabilities of the Society, and no such investigation has been made. I find on reference to a report of the Registrar of Friendly Societies in New Zealand that out of all the societies examined, about one-fourth proved to be in a solvent condition, and of these latter the solvency was in only four cases due mainly to secessions.

A source of weakness to Societies is their failure to properly invest their funds. It is well known that the rates of contributions to Friendly Societies are fixed from the consideration of the risks of sickness and the expectation of death, and the assumption that the funds of the Society are continuously invested at a certain rate of interest. This interest I have fixed at 4 per cent. I find, however, that a large proportion of the funds of Societies is not invested, and therefore receives no interest; and it is open to question whether, taking all things into consideration, and notwithstanding the general high rate of interest obtaining in the Colony, the rate allowed is not altogether too high. The funds of the Societies are sometimes grossly misapplied, and the intention of section 40 of the Act, by which the different funds are required to be kept separate, is entirely defeated by the practice of trustees lending the money belonging to one fund to another fund which may be insolvent. Although interest is nominally charged against the money so lent, in reality this is a mere book entry, and the money belonging to the original fund is never repaid. The whole business of lending money belonging to one fund to another fund is simply a means of defeating the Act, and a proceeding which should certainly be forbidden by the Legislature.

Another fruitful source of loss to Societies is the misapplication of funds for building purposes. This is not only entirely against the law, but is against all business principles, as the buildings erected in very few cases return the interest which could be earned by ordinary investments allowed by the Act; and many cases have come under my attention in which the buildings not only return no interest at all, but are a heavy charge on the funds of the Society. Someone has said that the worst evil which can befall a Society is to receive a gift of a piece of land on which to erect a hall, and there are not wanting many instances in the operations of Friendly Societies in this Colony which illustrate the truth of the saying.

Nothing has surprised me more in connection with Friendly Societies than the astonishing number of malversations that have come under my attention, and I am of opinion that these have occurred chiefly through the laxity of the officers and of the auditors charged with the supervision of the accounts. Some of the persons stealing money belonging to Friendly Societies have been prosecuted, but in the majority of cases no action has been taken, the defaulters or their friends generally undertaking to make good the amounts stolen, and I regret to say that restoration in very few instances is really made.

Owing to the looseness with which some of the Societies carry on business, I am unable to say how many that have been registered are now in existence; and I find that it has been a common practice for Societies to close their operations and divide their funds without sending any notice to the Registrar. Several Societies have ceased operations during the year, but the number of such cannot be stated, as I have only been advised in a few instances. The collapsing of Societies has been a fruitful cause of distress,

distress, and on investigation it has proved that many persons who have made great sacrifices to keep up their payments have in the end found themselves in an unsound Society, which is unable to pay them the benefits they have subscribed for, while they themselves are too old to be received into another Society.

Under section 45 of the Act the trustees or other officers are required to furnish the Registrar with annual returns of the operations of the Societies, and returns of sickness and mortality are required every fifth year, dating from 1873. The annual returns have usually been made by the Societies, though so far they have not been used, but no quinquennial returns have been received since the Act was passed. Taking advantage of the fact that the year 1893 was the close of the quinquennial period, forms of returns were prepared by me and forwarded to all Societies. These are now being filled in, and many of them have been returned to me and examined, but the operation of examination and tabulation is so heavy that the result of the quinquennial investigation can hardly be looked for before the close of the current year. From these quinquennial returns I hope to obtain experience of sickness and of mortality, as well as sufficient information to determine the solvency or otherwise of the various Lodges and Orders. The forms have been made as simple as possible, and although many that have been received are incorrectly filled up by the officers or trustees, there seems to be everywhere the greatest willingness to afford help and make the returns as complete as possible. Should the information prove as satisfactory as I expect, I shall be able to establish a table of contributions based upon local conditions that cannot fail to be useful. At present the tables on which the rates of benefits are founded are those used by the Manchester Unity of Oddfellows of England, compiled by Mr Henry Ratchiffe from the experience of his Society for five years ending 1870. The only local data yet available in anything like a complete form is that prepared by Mr. Edwin Schofield, Grand Secretary of the local Manchester Unity. These tables, which give the amount of sickness at the various ages, have proved extremely useful. So far as my investigation goes, there is no warrant for supposing that there is less sickness in this Colony than in England; indeed, as the expectation of life has been proved to be longer in New South Wales than in England, it is but a natural expectation that the sickness will also be greater.

Various actions-at-law have been entertained by District Court Judges and Magistrates for the recovery of contributions in arrear, and decisions have been given in favour of Societies prosecuting their members, and this in spite of the fact that section 18 of the Act declares that the subscriptions shall be voluntary on the part of members of the Society. The payment of sick and funeral benefits has also been recovered in the Courts by members from their Lodges, even after the decision of the Arbitration Court of the Lodges has been adverse to the claimant; yet section 14 of the Act expressly declares that the decision of the arbitrators, made in accordance with the Act, shall be binding and conclusive on all parties without appeal.

The principal legal decision affecting Friendly Societies, given during the past year, was that of Judge Murray in the matter of the Sacred Heart Branch of the Hibernian A. C. B. Society *versus* the Sydney District. His Honor decided as follows:—

1. That the limitation, in section 15 of the Friendly Societies Act of 1873, of the jurisdiction of District Courts, by the words "the rules of which do not prescribe," &c., is general, and not confined to the cases provided for by section 14: in other words, that the direction contained in the first sentence of the latter section does not restrict a Society in the making of rules dealing with the settlement of disputes, to cases only of disputes between members and the management; but, while that section virtually *compels* a Society, for the avoiding of litigation, to provide rules for the settlement of these common disputes, the powers impliedly given by section 7 extend to the settling of differences of, generally, all descriptions arising within the Society, leaving to District Courts the determination only of such matters as may appear not to have been dealt with by the rules.

2. That, for the purposes of jurisdiction in determining disputes, a Society may be constituted by a centre and several branches, general rules providing for the settlement of differences arising between branches and the centre being valid, and so effectually limiting the jurisdiction of District Courts.

Under section 42 of the Act, Societies are expressly forbidden to take shares in any joint stock or other company, with or without charter of incorporation; but under the reconstruction schemes of some of the Banks, approved by the Courts, Societies with money on fixed deposit were compelled to take shares in the Banks. Negotiations are now pending between the Societies and the Banking institutions concerned, as the Societies whose money is locked up contend, with some show of reason, that an order of the Court cannot prejudice them against the Friendly Societies Act, which expressly forbids them to do what an order of the Court seems to compel them to do.

As illustrating the peculiar condition of affairs that may arise in connection with the practical working of Societies, it may be mentioned that a lodge in the Braidwood district has drifted into a peculiar position. It had, on 1st January, 1893, but two members, and had for years been unable to hold a meeting for want of five members to form a quorum, and no new members can be admitted, as, according to their by-laws, all candidates for initiation must be approved of by a selection committee of three members.

During September, 1892, an attempt was made by an agent to obtain registration in this Colony for the Independent Order of Foresters of Canada. Their rules could not be approved of, as not only did they propose insurances on the lives of members at rates which experience shows were altogether too low, but it was also provided that the central body in Canada should have sole control and possession of all the funds excepting those required for local management expenses. That the action taken by this office was judicious has been proved by the arrival of the Report of the English Registrar of Friendly Societies for the year 1892, containing information showing that the Chief Registrar of the United Kingdom had felt it his duty to publish in *The Times*, and afterwards to repeat it in January, 1893, "a caution to all who may have dealings with the Independent Order of Foresters on the footing of the prospectus" which had been issued.

Mention has been made of the fact that with the year 1893 a quinquennial period closed, and that returns are being obtained from every Society operating in the Colony. Sufficient has been learnt from returns already furnished to show that the business of local Societies presents many peculiarities which should be considered when an amending Bill is being prepared. Legislation is undoubtedly urgently needed; nevertheless it would seem wise before taking steps to repeal the present Act to await the full results of the investigation now in progress, which it is hoped will disclose the exact condition of affairs in connection with Friendly Societies, and so enable a broad and just judgment to be formed of the matters which should be dealt with in an amendment of the law.

Sydney, 27th March, 1894.

T. A. COGILLAN,
Registrar of Friendly Societies.

APPENDIX I.

The following were the transactions of the year as far as they related to the registration of rules and amendments to rules. The rules of 71 new Societies were registered, 46 complete amendments, 25 partial amendments, and 4 amalgamations. No dissolutions were recorded, and registrations of rules were refused in some 40 instances.

NEW SOCIETIES REGISTERED IN 1893.

Manchester Unity Independent Order of Oddfellows.

Pride of Riverstone.	Star of the Glen.
Macquarie.	Crookwell.
Miners' Hope.	Muswellbrook.
Queen of the North.	Monaro.
United Foster.	Star of Islington.
Pride of Cardiff.	Excelsior.
Union.	Macquarie.
Peak Hill.	Star of the Ferry.
Hand-in-hand.	Jersey.
Star of Drummoyne.	

Grand United Order of Oddfellows.

Trafalgar, 3,300.
Aberdeen, 3,301.
Hunter River District.

Independent Order of Oddfellows of New South Wales.

Imperial, 70.	Pride of Minmi, 71.
Hand of Friendship, 73.	Star of Hurstville, 72.
Talbragar.	Burke, 69.

National Independent Order of Oddfellows.

Sydney District.
Friendship.
Progress.

Royal Foresters.

Robin Hood, 538.
Pride of Kogarah, 537.

Ancient Order of Foresters.

New England District.
Pymont, 7,942.

Irish National Foresters.

The Order.

Hibernian-Australasian Catholic Benefit Society.

St. Mary's, 241.

Sons of Temperance.

Golden Hope.	Jubilee, 50.
Countess of Carlisle.	Bright and Morning Star, 13.
Namoi, 81.	St. George, 46.

Independent Order of Rechabites.

Star of Hillgrove, 49.	Helping Hand, 46.
Pride of Merewether, 32.	Perseverance, 44.
Pride of Blackheath, 38.	Beacon Light, 48.
Star of Alma, 51.	Westward Ho, 47.
Star of the Barrier, 50.	Amethyst, 43.
Advance, 41.	

United Ancient Order of Druids.

Duckenfield.	Rose of Rockdale.
Progress, 301.	Anglesea.
Mount Kembla, 275.	Pride of Richmond.
Pride of Wardell, 304.	Excelsior, 293.
Staff of Woonona, 300.	Mistletoe, 79.
Mount Hope, 302.	Star of the South, 294.
Hope of St. Mary's, 303.	

Daughters of Temperance.

Laurel.

Miscellaneous

Miscellaneous Societies.

Employees Colonial Sugar Refinery Company (Limited).
 Leichhardt and Petersham United Friendly Societies Dispensary.
 Grand United Order of Oddfellows' Dispensary.

COMPLETE AMENDED RULES.

Manchester Unity Independent Order of Oddfellows.
 Bathurst District.
 Star of the North.

Grand United Order of Oddfellows.

Federal, 2,550.
 Carrington, 2,533.
 The Order.

National Independent Order of Oddfellows.

Pioneer, 1,137.

Order of Royal Foresters.

Maitland.
 Royal Albert, 580.

Ancient Order of Foresters.

Sydney District.	Perseverance, 7,041.
Star of the North, 3,120.	Ancient City of Lincoln.
Little John, 6,096.	Royal Oak, 2,222.

Sons of Temperance.

National Division.

Hibernian-Australasian Catholic Benefit Society.

St. Mary's, Concord, 157.	St. Patrick's, Moss Vale, 173.
St. Joseph's, Sydney, 68.	St. Joseph's, Junee, 227.
Mount Carmel, Sydney, 170.	St. Patrick's, Casino, 229.
St. Joseph's, Orange, 123.	Sacred Heart, Goulburn, 164.
St. Patrick's, Rockdale, 98.	St. Patrick's, Glen Innes, 207.
St. Patrick's, Haymarket, 38.	St. Michael's, Deniliquin, 209.
St. Benedict's, Sydney, 80.	St. Joseph's, Newtown, 139.
Sacred Heart, Sydney, 97.	St. Patrick's, Young, 193.
St. Joseph's, Forbes, 173.	St. Joseph's, Grenfell, 192.
St. Michael's, Wagga Wagga, 121.	St. Michael and St. John, Bathurst, 137.
St. Patrick's, Newcastle, 34.	St. Mary's, Tenterfield, 197.
St. Thomas', Lewisham, 132.	

Independent Order of Rechabites.

The Order.
 Hope of Chippendale.

Loyal Orange Benefit Society.

King William III.
 The Order—change to Loyal Protestant Benefit Society.

Australasian Holy Catholic Guild.

St. Joseph and St. Mary.
 St. Mary's, Grafton.

United Ancient Order of Druids.

Grand Lodge.

Grand United Order of Free Gardeners.

The Order.

PARTIAL AMENDMENTS.

Manchester Unity Independent Order of Oddfellows.

Fountain of Friendship.	Welcome Brothers.
Tamworth District.	Barwon.
Silver City.	Balranald.
Riverina District.	Fountain of Friendship.
Wandering Minstrel.	Balmain.

Grand United Order of Oddfellows.

Widows and Orphans (Hunter River District).
 Star of the South, 1,605.

Ancient Order of Foresters.

Court Old England, 1,634.
Pride of Australia, 2,488.

Sons of Temperance.
Loyal Albert, 62.

United Ancient Order of Druids.
Hand and Heart.

Protestant Alliance Friendly Society of Australasia.
Grand Lodge.

MISCELLANEOUS.

Hebrew Mutual Medical and Benefit Society.
Protestant Union Benefit Society.
General Post Office Mutual Benefit Society.
Hebrew Mutual Medical and Benefit Society.
Sydney Tramway and Omnibus Company's Employee's Mutual Benefit Society.
N.S.W. Seamen's Shipwreck, Accident and Burial Association.
Australian Secular Benefit Society.
Palace Emporium Provident Society.

AMALGAMATIONS.

Star of the South	...	{ Sons of Temperance	} 26th April.
Evening Star	...	{ Daughters of Temperance	...	
Welcome Brothers	...	{ Manchester Unity Independent	} 8th May.	
Fountain of Friendship	...	{ Order of Oddfellows.		
Star of Collector	...	{ Grand United Order of	} 5th June.	
Star of Breadalbane	...	{ Oddfellows.		
Star of the Glen	...	{ Manchester Unity Independent	} 23rd September.	
Empress of India	...	{ Order of Oddfellows.		

APPENDIX II.

Only one complete valuation was made during the year, viz., that of the No. 1, Old Protestant Alliance Friendly Society, which showed a deficiency of £4,435 15s. 4d., or £31 10s. per member, as set forth in the following statement:—

NO. 1.—OLD PROTESTANT ALLIANCE FRIENDLY SOCIETY.

Valuation of the Society according to the Annual Report for July, 1893.

TABLE A.—Sick and Funeral Funds.

ASSETS.			LIABILITIES.	
Value of funds in July, 1893, as audited	£1,383 18 2		Value of future benefits.....	£7,554 7 6
Value of future contributions to the Sick and Funeral Fund	1,734 14 0			
Deficiency	4,435 15 4			
Total	£7,554 7 6		Total	£7,554 7 6

TABLE B.—Value of future contributions.

Age—Years.	No. of members.	Value of future annual contribution of £1 per annum per member.	Total value of contribution of £1 per member at each age.	Age—Years.	No. of members.	Value of future annual contribution of £1 per annum per member.	Total value of contribution of £1 per member at each age.
18	4	£ 19·772	£ 79·088	56	2	£ 11·549	£ 23·098
22	14	19·202	268·828	57	2	11·241	22·482
27	16	18·425	294·800	58	2	10·930	21·860
32	12	17·541	210·492	59	1	10·618	10·618
37	22	16·527	363·594	60	1	10·307	10·307
42	16	15·405	246·480	61	2	9·999	19·998
47	22	14·142	311·124	63	1	9·391	9·391
50	3	13·313	39·939	64	1	9·088	9·088
51	2	13·028	26·056	68	2	7·865	15·730
52	3	12·739	38·217	69	1	7·560	7·560
53	5	12·447	62·235	76	1	5·094	5·094
54	2	12·152	24·304				
55	4	11·852	47·408				
						Total	2,168·391

Assuming that 16s. per annum is available for the Sick and Funeral benefits—the present value of the future contributions is about £1,734 14s.

TABLE C.—Liabilities: Sick-pay, 2ls. 3d. per week for first six months; 1ls. for second six months; and 6s. afterwards.

Age—Years.	Present value of sick-pay.	Funeral donations.	Total per member.	No. of members.	Total at each age.
	£	£	£		£
18	23·362	10·923	34·285	4	137·140
22	24·856	11·825	36·681	14	513·534
27	26·998	13·032	40·030	16	640·480
32	29·548	14·400	43·948	12	527·376
37	32·516	16·399	48·915	22	1,076·130
42	35·783	18·196	53·979	16	863·664
47	39·448	20·617	60·065	22	1,321·430
50	41·664	21·999	63·663	3	190·989
51	42·400	22·470	64·870	2	129·740
52	43·138	22·948	66·086	3	198·258
53	43·871	23·433	67·304	5	336·520
54	44·774	23·923	68·697	2	137·394
55	45·300	24·415	69·715	4	278·860
56	45·988	24·917	70·905	2	141·810
57	46·620	25·425	72·045	2	144·090
58	47·277	25·937	73·214	2	146·428
59	47·866	26·450	74·316	1	74·316
60	48·408	26·959	75·367	1	75·367
61	48·903	27·465	76·368	2	152·736
63	49·689	28·458	78·147	1	78·147
64	49·926	28·947	78·873	1	78·873
68	49·051	30·933	79·984	2	159·968
69	48·257	31·428	79·685	1	79·685
76	37·011	34·421	71·432	1	71·432
					7,654·367

1894.

NEW SOUTH WALES.

IMMIGRATION.

(REPORT ON, FOR 1893.)

Presented to Parliament by Command.

The Officer in Charge of Immigration to The Principal Under Secretary.

Sir,

Immigration Office, Sydney, 15 January, 1894.

I have the honor to submit, for the information of the Chief Secretary, my report on Immigration for the year ending 31st December, 1893.

Operations under the Regulations have been confined to the nominations of wives and families by husbands and fathers, of good moral and industrial qualifications, being residents in the Colony.

Of the total of 120 immigrants who so arrived all were nominated in the Colony, none were selected by the Agent-General.

They consisted of 66 individuals above 12 years of age, and of 54 under 12 years of age.

Two deaths occurred during the voyage.

The appendices herewith annexed give full detailed information relative to Immigrants during the voyage:—

- A.—General Statistical Information.
- B.—Nationality of Immigrants.
- C.—Educational Attainments.
- D.—Religious Persuasions.
- E.—Distribution into Country Districts.

I have, &c.,

FRANK J. JOSEPHSON,

Officer in Charge of Immigration.

APPENDIX A.
RETURN of Assisted Immigration to New South Wales, 1893.

Name of Vessel.	Date of Departure.	Date of Arrival.	Number of days on voyage.	Number landed				Nominated in the Colony.	Selected by the Agent-General.	Total number of individuals landed.	Equal to statute adults.	Contract price per statute adult.	Amount paid for and by Immigrants on account of cost of their passage.	
				Above 12 years of age.		Under 12 years of age.							Amount paid in the Colony by Depositors.	Amount paid in London to the Agent-General.
				M.	F.	M.	F.							
	1892.	1893.										£	£	
S.S. "Austral".....	3 December...	16 January ...	44	1	7	6	7	21	.....	21	14	24	.....
	1893.													
" "Orient"	12 February...	27 March	44	1	9	2	3	15	.....	15	12½	38	.....
" "Ormuz"	25 February...	10 April	44	3	4	3	1	11	.....	11	9	12	.....
" "Cuzco"	22 April	5 June.....	44	1	12	7	13	33	.....	33	21½	35	.....
" "Orient"	7 June.....	1 August.....	45	6	8	2	2	18	.....	18	15½	45	3
" "Oroya"	6 October ...	18 November..	43	7	7	3	5	22	.....	22	18	43	3
			*	19	47	23	31	120	.....	120	90½	200	6

* Average length of passage, 44 days.

Single men	19
Wives and single women	47
Children under 12 years	54
Total.....	120

Immigration Office,
Sydney, 15th January, 1894.

FRANK J. JOSEPHSON,
Officer in Charge of Immigration.

3

APPENDIX B.

RETURN showing the Native Countries of the Assisted Immigrants who arrived in 1893:—

From England and Wales	72
„ Scotland	25
„ Ireland	18
„ Other Countries	5

120

Immigration Office,
Sydney, 15th January, 1894.FRANK J. JOSEPHSON,
Officer in Charge of Immigration.

APPENDIX C.

RELIGIOUS PERSUASIONS.

Nationality.	Classification of Religion.						Total.
	Church of England.	Church of Scotland.	Wesleyan Methodists.	Other Protestants.	Roman Catholics.	Jews.	
English	35	1	28	2	2	4	72
Scotch .....	.....	21	.....	.....	4	.....	25
Irish .....	.....	5	.....	.....	13	.....	18
Other Countries .....	.....	.....	.....	.....	.....	5	5
	35	27	28	2	19	9	120

Immigration Office,
Sydney, 15th January, 1894.FRANK J. JOSEPHSON,
Officer in Charge of Immigration.

APPENDIX D.

EDUCATIONAL ATTAINMENTS.

Nationality.	Educational Attainments.						Total.
	Under 12 years.			12 years and over.			
	Cannot read.	Read and write.	Read only.	Cannot read.	Read and write.	Read only.	
England	20	19	.....	1	32	.....	72
Scotland	6	3	.....	.....	16	.....	25
Ireland	1	2	.....	.....	15	.....	18
From other Countries	1	1	.....	.....	3	.....	5
	28	25	.....	1	66	.....	120

Immigration Office,
Sydney, 15th January, 1894.FRANK J. JOSEPHSON,
Officer in Charge of Immigration.

APPENDIX E.

RETURN showing the Number of Assisted Immigrants who, at their own request, were forwarded to the Country Districts by Rail and by Steamer.

Destination.	Wives.	Families.	Destination.	Wives.	Families.
Armidale	1	5	Newcastle	7	19
Clarence River	1	3	Wollongong	2	4
Cockle Creek .....	.....	4			
Guyra	1	.....		16	44
Lithgow	3	6		60	
Narrabri	1	3			

Immigration Office,
Sydney, 15th January, 1894.FRANK J. JOSEPHSON,
Officer in Charge of Immigration.

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

REPORT FROM THE SELECT COMMITTEE

ON

OPERATION OF THE SHIPPING LAWS;

TOGETHER WITH THE

PROCEEDINGS OF THE COMMITTEE,

MINUTES OF EVIDENCE,

AND

APPENDIX.

ORDERED BY THE LEGISLATIVE ASSEMBLY TO BE PRINTED,5 *June*, 1894.

SYDNEY: CHARLES POTTER, GOVERNMENT PRINTER.

1894.

1894.

**EXTRACTS FROM THE VOTES AND PROCEEDINGS OF THE
LEGISLATIVE ASSEMBLY.**

VOTES No. 3. TUESDAY, 23 JANUARY, 1894.

28. OPERATION OF THE SHIPPING LAWS :—Mr. Kelly moved, pursuant to Notice,—
- (1.) That a Select Committee be appointed, with power to send for persons and papers, to inquire into and report upon the operation of the “ shipping laws, and abuses connected with the same.”
- (2.) That such Committee consist of Mr. See, Mr. O’Sullivan, Mr. Wise, Mr. Davis, Mr. Molesworth, Mr. J. D. FitzGerald, Mr. Garrard, Mr. G. D. Clark, Mr. Edden, and the Mover.
- Debate ensued.
- Mr. Molesworth moved, That the Question be amended by the omission of the words, “ shipping laws and abuses connected with the same,” with a view to the insertion in their place of the words, “ laws relating to the employment of scamon.”
- Question proposed,—That the words proposed to be omitted stand part of the Question.
- Debate ensued.
- Question,—That the words proposed to be omitted stand part of the Question,—put and passed.
- Original Question put and passed.
-

VOTES No. 57. TUESDAY, 5 JUNE, 1894.

11. OPERATION OF THE SHIPPING LAWS :—Mr. Kelly, as Chairman, brought up the Report from, and laid upon the Table the Minutes of Proceedings of, and Evidence taken before the Select Committee, for whose consideration and report this subject was referred on 23rd January, 1894, together with Appendix,—and moved, That the Document be printed.
- Debate ensued.
- Question put and passed.
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1894.

OPERATION OF THE SHIPPING LAWS.

REPORT.

THE SELECT COMMITTEE of the Legislative Assembly, appointed on 23rd January, 1894, "*with power to send for persons and papers, to inquire into and report upon the operation of the Shipping Laws and abuses connected with the same,*" beg to report to your Honorable House.

Your Committee having examined the witnesses named in the List* ^{*See List, p. 10.} and carefully considered the evidence taken before the Committee, find as follows:—

1. That, taking into consideration the possible early prorogation of Parliament, your Committee desire to present their report on the inquiry so far as it has been completed, such inquiry being chiefly confined to the mode of shipping seamen, the undermanning of coastal and intercolonial steamships, the incompetence of crews shipped during labour disputes, and the indiscriminate issue of permits by the Shipping Master during labour troubles; also, the evasion of the load-line regulation by colliers.

- (1.) That the evidence discloses that the mode of shipping and discharging seamen on board of coastal and intercolonial vessels is very unsatisfactory, and admits of many abuses and wrongs being done to seamen, also the engaging of incompetent crews, thereby endangering the lives of not only those on board their ship, but the lives of others, through risk of collision.
- (2.) That Mr. Samuel Smith, Secretary of the Federated Seamen's Union, suggests that all crews should be shipped and discharged at the Government Shipping Office. This would, in his opinion, be an effectual means of preventing many misunderstandings that often happen under the present system, by the ship's articles being read and properly interpreted to seamen before being called on to affix their signatures.
- (3.) That the evidence also discloses that at present there does not exist any law providing a schedule for the efficient manning of vessels registered in New South Wales.
- (4.) That three witnesses, viz., Captain Hixson, President of the Marine Board, Captain Edie, Government Shipping Master, and Mr. Samuel Smith, Secretary of the Federated Seamen's Union, recommended, that to meet with the above requirement, the schedule lately adopted by the Board of Trade in Great Britain should be embodied in our Act.
- (5.) That there is also evidence to prove that, during maritime disputes, incompetent crews were shipped on board our coastal and intercolonial passenger steamships.
- (6.) That one of the witnesses examined, Captain Hixson, President of the Marine Board, expressed the opinion that all men, before claiming to be able seamen, should pass some examination, so as to show they were proficient and competent to perform their duties, as is the case in the Royal Navy; and he could not conceive of men who had never been to sea before in their lives going on board ships and pretending to undertake the duties of able seamen.

(7.)

- (7.) That evidence has also been produced before your Committee to show that permits or licenses to ship had been given by the Shipping Master during the recent maritime trouble to persons who were not seamen, and who had not any knowledge of an able seaman's duties, to ship under the title of deck hand, and that such men formed part of the crews of vessels engaged on our passenger, coasting, and intercolonial steamships.
- (8.) That Captain Edie, Government Shipping Master, in his evidence stated that he had no power to refuse a license on the ground that a man is not a competent seaman, and also that the section authorising the Shipping Master to grant licenses to any persons other than a seaman is a provision peculiar to our Act; and, further, is of opinion that a Seaman's Rating Bill, similar to that now in force in Great Britain, should be passed, which would have the effect of preventing men being rated as A.B.'s when they are not competent A.B.'s, as a sailor ought to know his business.
- (9.) That another witness, Mr. W. Cruickshank, Engineer-Surveyor to the Marine Board, stated that in his opinion those men shipped to perform firemen's duties in the stokehole should have some experience.
- (10.) That evidence was also disclosed showing that evasion of the load-line regulations was practised principally by steam colliers trading to the port of Sydney, and arriving during the night, when detection was avoided by reason of no Marine Surveyor being on duty at the time of arrival.
- (11.) That two witnesses, Captain Hixson and Mr. Smith, gave evidence, clearly showing that such practices were of frequent occurrence, Captain Hixson stating that the Marine Board had several times fined Masters for overloading, and that the recklessness with which the Masters of these vessels will sometimes, if they get the chance, load up, is remarkable, and in some cases have gone the length of shifting the load-line mark up after having been surveyed by the Marine Board Surveyor.
- (12.) That, according to the evidence, the present Act, intituled the Consolidated Merchant Seamen Act, for all vessels registered in this Colony, is defective, not being sufficiently stringent in its provisions to prevent glaring abuses being done to the detriment of the seafaring community, and the endangering of life and property.

2. Your Committee recommend that an amended Shipping Act should be, at the earliest period possible, brought forward by the Government, containing the following provisions, viz. :—

- (1.) Compelling all steamships to carry certificates of seaworthiness and efficiency, and to be surveyed half-yearly.
- (2.) All load-lines to be cut into the ship's side.
- (3.) Tampering with load-lines after survey to be a penal offence.
- (4.) The abolishing of shipping and discharging seamen on board intercolonial trading vessels.
- (5.) Shipping and discharging of seamen on board coastal vessels to be permitted only between the issue of articles and prior to expiry.
- (6.) A schedule to provide for the efficient manning of all vessels within the jurisdiction of the Colony, similar to that adopted by the Board of Trade of Great Britain.
- (7.) The rating of seamen, to insure their being proficient before being allowed to ship as A.B.'s or firemen.

A. J. KELLY,
Chairman.

No. 2 Committee Room,
Sydney, 5th June, 1894.

PROCEEDINGS OF THE COMMITTEE.

TUESDAY, 30 JANUARY, 1894.

MEMBERS PRESENT:—

Mr. Edden, | Mr. J. D. FitzGerald,
Mr. Kelly.

Mr. Kelly called to the Chair.

Entry from Votes and Proceedings appointing the Committee, read by the Clerk.
Committee deliberated.

Ordered,—That the Shipping Master be summoned to give evidence next meeting.

[Adjourned till Thursday next, at *Half-past Two* o'clock.]

THURSDAY, 1 FEBRUARY, 1894.

MEMBERS PRESENT:—

Mr. Kelly in the Chair.
Mr. G. D. Clark, | Mr. Edden,
Mr. J. D. FitzGerald, | Mr. Garrard,
Mr. Molesworth.

James Edie (*Shipping Master*) called in, sworn, and examined.

Witness withdrew.

Committee deliberated.

[Adjourned till Tuesday next, at *Half-past Two* o'clock.]

TUESDAY, 6 FEBRUARY, 1894.

MEMBERS PRESENT:—

Mr. Kelly in the Chair.
Mr. G. D. Clark, | Mr. Davis,
Mr. Edden, | Mr. J. D. FitzGerald,
Mr. Wise.

James Edie called in, and further examined.

Witness produced,—Copy of Articles of Agreement under Schedule 4 of the Seamen's Laws Consolidation Act; form of Articles of Agreement under "Merchant Shipping Act"; also fore-castle copy of foregoing agreements; also copy of account of change of crew of intercolonial or foreign trade ships; and handed in copy of letter written by Captain Edie, Shipping Master to the Board of Trade, with reference to the withholding of a vessels clearance on account of her not having full complement of crew. [Appendix A1.] Opinion of Board of Trade with reference to the above. [Appendix A2.] Letter from Secretary of Seamen's Union to the Shipping Master, respecting men who had sailed in the "Phoebe" without signing articles. [Appendix A3.] Opinion of Crown Law officers as to proper person to initiate prosecutions. [Appendix A4.] Form of license to ship. [Appendix A5.] Form of mutual release. [Appendix A6.] Form of advance note. [Appendix A7.] Form of certificate previous to clearing outwards in accordance with "Navigation Law Amendment Act, 1881." [Appendix A8.] Certificate previous to clearing outwards in accordance with Customs Regulations, Sydney. [Appendix A9.] Forms of permits of the Colonies of Queensland. [Appendix A10.] South Australia. [Appendix A11.] Victoria. [Appendix A12.] Form of permit used by United States Consul in Sydney. [Appendix A13.] Application by Burns, Philp, & Co., to ship certain men on board s.s. "Hesketh." [Appendix A14, 15, 16, 17.]

Witness withdrew.

[Adjourned till To-morrow, at *Two* o'clock.]

WEDNESDAY, 7 FEBRUARY, 1894.

MEMBER PRESENT:—

Mr. Kelly.

In the absence of a quorum the meeting called for this day lapsed.

THURSDAY, 8 FEBRUARY, 1894.

MEMBERS PRESENT:—

Mr. Kelly in the Chair.
Mr. G. D. Clark, | Mr. Davis,
Mr. Wise.

James Edie called in and further examined.

Witness withdrew.

[Adjourned till Tuesday next, at *Half-past Two* o'clock.]

TUESDAY,

TUESDAY, 13 FEBRUARY, 1894.

MEMBERS PRESENT:—

Mr. Kelly in the Chair.
Mr. G. D. Clark, | Mr. Davis,
Mr. Edden.

William Currie (*Manager of Steamship-owners' Association Free Maritime Labour Bureau*) called in, sworn, and examined.

Witness withdrew.

[Adjourned till Thursday next, at *Half-past Two* o'clock.]

THURSDAY, 15 FEBRUARY, 1894.

MEMBERS PRESENT:—

Mr. Kelly in the Chair.
M. G. D. Clark, | Mr. Davis,
Mr. Edden, | Mr. J. D. FitzGerald,
Mr. Wise.

William Currie called in and further examined.

Witness withdrew.

Ordered,—That Captain Hixson, President of the Marine Board, be summoned to give evidence next meeting.

[Adjourned till Tuesday next, at *Half-past Two* o'clock.]

TUESDAY, 20 FEBRUARY, 1894.

MEMBERS PRESENT:—

Mr. Edden, | Mr. Kelly.
In the absence of a quorum, the meeting called for this day lapsed.

THURSDAY, 22 FEBRUARY, 1894.

MEMBERS PRESENT:—

Mr. Kelly in the Chair.
Mr. Davis, | Mr. Edden,
Mr. J. D. FitzGerald.

Francis Hixson (*President of the Marine Board*) called in, sworn, and examined.

Witness withdrew.

[Adjourned till Tuesday next, at *Half-past Two* o'clock.]

TUESDAY, 27 FEBRUARY, 1894.

MEMBERS PRESENT:—

Mr. Kelly in the Chair.
Mr. G. D. Clark, | Mr. Davis,
Mr. Edden.

Francis Hixson, called in and further examined.

Witness handed in Return of Vessels detained provisionally or finally from going to sea, by reason of unseaworthiness during the last three years. [*Appendix B1.*] Letter from Mr. Cruickshank, Government Engineer-Surveyor, to Captain Lindeman, respecting refusal of passenger certificates to steamers "Kembla" and "Lawrence." [*Appendix B2.*] Schedule of life-saving apparatus. [*Appendix B3.*]

Witness withdrew.

[Adjourned till Tuesday next at *Two* o'clock.]

TUESDAY, 6 MARCH, 1894.

MEMBERS PRESENT:—

Mr. Davis, | Mr. Kelly.
In the absence of a quorum, the meeting called for this day lapsed.

TUESDAY, 13 MARCH, 1894.

MEMBERS PRESENT:—

Mr. Kelly in the Chair.
Mr. G. D. Clark, | Mr. Davis,
Mr. Edden.

William Cruickshank (*Engineer-Surveyor, Marine Board*) called in, sworn, and examined.

Witness withdrew.

Ordered,—That Mr. Sam. Smith (*Secretary of the Seamen's Union*) be summoned to give evidence next meeting.

[Adjourned till Tuesday next, at *Half-past Two* o'clock.]

TUESDAY,

TUESDAY, 20 MARCH, 1894.

MEMBERS PRESENT:—

Mr. G. D. Clark, | Mr. Davis,
Mr. Molesworth.

In the absence of the Chairman, Mr. Molesworth called to the Chair *pro tem*.
And the witness summoned for to-day not being in attendance,—
Committee deliberated.

[Reassembling of the Committee to be arranged by the Chairman.]

[Adjourned.]

THURSDAY, 22 MARCH, 1894.

[The meeting called for to-day postponed by order of the Chairman.]

THURSDAY, 29 MARCH, 1894.

MEMBERS PRESENT:—

Mr. Kelly in the Chair.
Mr. Davis, | Mr. Edden,
Mr. J. D. FitzGerald.

Samuel Smith (*Secretary of the Seamen's Union*) called in, sworn, and examined.
Witness handed in copy of letter written to the *Evening News* with reference to the protection of
seamen from the malpractices of boarding-house keepers [*Appendix C*].
Witness withdrew.

[Adjourned till Tuesday next at half-past *Two* o'clock.]

TUESDAY, 3 APRIL, 1894.

MEMBERS PRESENT:—

Mr. Kelly in the Chair.
Mr. G. D. Clark, | Mr. Edden,
Mr. J. D. FitzGerald.

Samuel Smith called in and further examined.
Witness handed in copy of letter written by himself to various Steamship Companies with reference
to boycotting, and replies thereto [*Appendix D*].
Witness withdrew.

[Adjourned till Thursday next at half-past *Two* o'clock.]

THURSDAY, 5 APRIL, 1894.

MEMBERS PRESENT:—

Mr. Kelly in the Chair.
Mr. G. D. Clark, | Mr. Davis,
Mr. J. D. FitzGerald, | Mr. Molesworth.

Samuel Smith called in and further examined.
Witness handed in report of the decision in the prosecution of Captain Dyson, of the Maritime
Labour Bureau, Melbourne, for illegally supplying seamen [*Appendix E1*]; copy of the opinion of the
Crown Law Officers in England as to the legality of the action of the Shipping Federation [*Appendix E2*];
copy of letter written by Mr. Sam. Smith to the Colonial Treasurer, directing his attention to the breaking
of the Shipping Laws [*Appendix E3*]; copy of letter written by Mr. Sam. Smith to the Colonial Treasurer,
enclosing report of the prosecution of Captain Seymour of the s.s. "Victorian" [*Appendix E4*]; copy
of a letter from the secretary of the British Seamen's Union to the President of the Board of Trade
respecting "Crimping" [*Appendix E5*]; copy of "License to Ship," issued by the Shipping Master of
New South Wales to Otto Herman [*Appendix E6*]; report of the Shipping Master of New South Wales
with reference to the issue of "Licenses to Ship" [*Appendix E7*]; copy of a report of the prosecution of a
registry office keeper in Melbourne for alleged infringement of the Merchant Shipping Act [*Appendix*
E8]; report of a deputation which waited on the Colonial Treasurer with reference to the issue of
"Permits" [*Appendix E9*]; Schedule of Amendments suggested in the "Seamen's Laws Consolidation
Act" [*Appendix E10*].

Witness withdrew.

[Adjourned till Thursday next at half-past *Two* o'clock.]

THURSDAY, 12 APRIL, 1894.

MEMBERS PRESENT:—

Mr. G. D. Clark, | Mr. Davis,
Mr. J. D. FitzGerald, | Mr. Molesworth.

In the absence of the Chairman, Mr. Molesworth called to the Chair *pro tem*.
Samuel Smith called in and further examined.
Witness handed in extract with reference to the overcarrying of passengers by s.s. "Corrinna,"
in consequence of the incompetence of crews [*Appendix F1*]; letter from a passenger who travelled by
s.s. "Elingamite," with reference to the incompetence of the crew [*Appendix F2*].
Witness withdrew.

Reassembling of the Committee to be arranged by the Chairman.

[Adjourned.]

THURSDAY,

THURSDAY, 19 APRIL, 1894.

The meeting called for this day postponed by order of the Chairman.

THURSDAY, 26 APRIL, 1894.

MEMBERS PRESENT:—

Mr. Kelly in the Chair.

Mr. Davis, | Mr. J. D. FitzGerald,
Mr. Molesworth.

Samuel Smith called in and further examined.

Witness handed in report of Mr. Justice William's summing up in the case of the prosecution of Captain Dyson, Manager of the Steamship Owners' Association Free Maritime Labour Bureau, in Melbourne. [*Appendix G.*]

Witness withdrew.

Thomas Robert Allt (*President of the Steamship Owners' Association*), called in, sworn, and examined.

Witness withdrew.

Arthur Benjamin Cockburn (*Secretary of the Steamship Owners' Association*), called in, sworn, and examined.

Witness withdrew.

[Adjourned till Thursday next, at half-past *Two* o'clock.]

THURSDAY, 3 MAY, 1894.

MEMBERS PRESENT:—

Mr. Kelly, | Mr. Molesworth.

[In the absence of a quorum, the meeting called for this day lapsed.]

TUESDAY, 8 MAY, 1894.

MEMBERS PRESENT:—

Mr. Davis, | Mr. Molesworth.

[In the absence of a Quorum, the meeting called for this day lapsed.]

WEDNESDAY, 9 MAY, 1894.

MEMBERS PRESENT:—

Mr. Kelly in the Chair.

Mr. G. D. Clark, | Mr. Davis.

Committee deliberated as to their Report.

Reassembling of the Committee to be arranged by the Chairman.

[Adjourned.]

TUESDAY, 29 MAY, 1894.

MEMBERS PRESENT:—

None.

[In the absence of a Quorum, the meeting called for this day lapsed.]

THURSDAY, 31 MAY, 1894.

MEMBER PRESENT:—

Mr. Kelly.

[In the absence of a Quorum, the meeting called for this day lapsed.]

TUESDAY, 5 JUNE, 1894.

MEMBERS PRESENT:—

Mr. Kelly in the Chair.

Mr. G. D. Clark, | Mr. Davis,
Mr. Edden, | Mr. J. D. FitzGerald,
Mr. Molesworth.

The Chairman submitted Draft Report, which was read 1^o as follows:—

DRAFT REPORT.

THE SELECT COMMITTEE of the Legislative Assembly, appointed on 23rd January, 1894, "*with power to send for persons and papers, to inquire into and report upon the operation of the Shipping Laws and abuses connected with the same,*" beg to report to your Honorable House.

Your Committee having examined the witnesses named in the List and carefully considered the evidence taken before the Committee, find as follows:—

1. That, taking into consideration the possible early prorogation of Parliament, your Committee desire to present their report on the inquiry so far as it has been completed, such inquiry being chiefly confined to the mode of shipping seamen, "the undermanning of coastal and intercolonial steamships,"
the

the incompetence of crews shipped during labour disputes, and the indiscriminate issue of permits by the Shipping Master during labour troubles; also, the evasion of the load-line regulation by colliers.

- (1.) That the evidence discloses that the mode of shipping and discharging seamen on board of coastal and intercolonial vessels is very unsatisfactory, and admits of many abuses and wrongs being done to seamen, also the engaging of incompetent crews, thereby endangering the lives of not only those on board their ship, but the lives of others, through risk of collision.
 - (2.) That two witnesses, viz., Captain Edie and Mr. Samuel Smith, suggest that all crews should be shipped and discharged at the Government Shipping Office. This would, in their opinion, be an effectual means of preventing many misunderstandings that often happen under the present system by the ship's articles being read and properly interpreted to seamen before being called on to affix their signatures.
 - (3.) That the evidence also discloses that at present there does not exist any law providing a schedule for the efficient manning of vessels registered in New South Wales.
 - (4.) That three witnesses, viz., Captain Hixson, President of the Marine Board, Captain Edie, Government Shipping Master, and Mr. Samuel Smith, Secretary of the Federated Seamen's Union, recommended that, to meet with the above requirement, the schedule lately adopted by the Board of Trade in Great Britain should be embodied in our Act.
 - (5.) That there is also abundance of evidence to prove that, during maritime disputes, incompetent crews were shipped on board our coastal and intercolonial passenger steamships.
 - (6.) That one of the witnesses examined, Captain Hixson, President of the Marine Board, expressed the opinion that all men, before claiming to be able seamen, should pass some examination, so as to show they were proficient and competent to perform their duties, as is the case in the Royal Navy; and he could not conceive of men who had never been to sea before in their lives going on board ships and pretending to undertake the duties of able seamen.
 - (7.) That evidence has also been produced before your Committee to show that permits or licenses to ship had been given by the Shipping Master during the recent maritime trouble to persons that were not seamen, and who had not any knowledge of an able seaman's duties, to ship under the title of deck hand, and that such men formed part of the crews of vessels engaged on our passenger, coasting, and intercolonial steamships.
 - (8.) That the witness examined, being Captain Edie, Government Shipping Master, who stated that he had no power to refuse a license on the ground that a man is not a competent seaman, and states also that the section authorising the Shipping Master to grant licenses to any persons other than a seaman is a provision peculiar to our Act; and, further, is of opinion that a Seaman's Rating Bill, similar to that now in force in Great Britain, should be passed, which would have the effect of preventing men being rated as A.B.'s when they are not competent A.B.'s, as a sailor ought to know his business.
 - (9.) That another witness, Mr. W. Cruickshank, Engineer-Surveyor to the Marine Board, stated that in his opinion those men shipped to perform firemen's duties in the stokehole should have some experience.
 - (10.) That evidence was also disclosed showing that a systematic evasion of the load-line regulations was practised principally by steam colliers trading to the port of Sydney, and arriving during the night, when detection was avoided by reason of no Marine Surveyor being on duty at the time of arrival.
 - (11.) That two witnesses, Captain Hixson and Mr. Smith, gave evidence, clearly showing that such practices were of frequent occurrence, Captain Hixson stating that the Marine Board had several times fined Masters for overloading, and that the recklessness with which the Masters' of these vessels will sometimes, if they get the chance, load up, is remarkable, and in some cases have gone the length of shifting the load-line mark up after having been surveyed by the Marine Board Surveyor.
 - (12.) That, according to the evidence, the present Act, intituled the Consolidated Merchant Seamen Act, for all vessels registered in this Colony, is defective, not being sufficiently stringent in its provisions to prevent glaring abuses being done to the detriment of the seafaring community, and the endangering of life and property.
2. Your Committee recommend that an amended Shipping Act should be, at the earliest period possible, brought forward by the Government, containing the following provisions, viz. :—
- (1.) Compelling all steamships to carry certificates of seaworthiness and efficiency, and to be surveyed half-yearly.
 - (2.) All load-lines to be cut into the ship's side.
 - (3.) Tampering with load-lines after survey to be a penal offence.
 - (4.) The abolishing of shipping and discharging seamen on board intercolonial trading vessels.
 - (5.) Shipping and discharging of seamen on board coastal vessels to be permitted only between the issue of articles and prior to expiry.
 - (6.) A schedule to provide for the efficient manning of all vessels within the jurisdiction of the Colony, similar to that adopted by the Board of Trade of Great Britain.
 - (7.) The rating of seamen, to insure their being proficient before being allowed to ship as A.B.'s or firemen.

Paragraph 1 read and considered.

Amendment moved (*Mr. Molesworth*) to omit word "indiscriminate" in line 4.

Question put, That the word proposed to be omitted stand part of the paragraph.

Committee divided.

Ayes.

Mr. G. D. Clark,
Mr. Edden,
Mr. J. D. FitzGerald.

No.

Mr. Molesworth.

And so it was resolved in the affirmative.

Paragraph, as read, agreed to.

Sub-paragraph 1 read and considered.

Question put,—That paragraph 1 as read stand part of the Report.

Committee divided.

Ayes.	No.
Mr. G. D. Clark, Mr. Edden, Mr. J. D. FitzGerald.	Mr. Molesworth.

And so it was resolved in the affirmative.
Sub-paragraph 2 read and considered.

Amendment moved (*Mr. Molesworth*) to omit the words, "two witnesses, viz., Captain Edie and"
Question put,—That the words proposed to be omitted stand part of the paragraph.
Committee divided.

Aye.	Noes.
Mr. J. D. FitzGerald.	Mr. G. D. Clark. Mr. Edden, Mr. Molesworth.

And so it passed in the negative.

And certain other amendments having been made,—paragraph as amended agreed to.

Sub-paragraphs 3 and 4 read and agreed to.
Sub-paragraph 5 read, amended, and agreed to.
Sub-paragraph 6 read and agreed to.
Sub-paragraphs 7 and 8 read, amended, and agreed to.
Sub-paragraph 9 read and agreed to.
Sub-paragraph 10 read, amended, and agreed to.
Sub-paragraph 11 read and agreed to.
Sub-paragraph 12 read and considered.

Amendment moved (*Mr. Molesworth*) to omit the word "glaring" in line 3.
Question put,—That the word proposed to be omitted stand part of the paragraph.
Committee divided.

Ayes.	No.
Mr. G. D. Clark, Mr. Davis, Mr. J. D. FitzGerald.	Mr. Molesworth.

And so it was resolved in the affirmative.

Sub-paragraph, as read, agreed to.
Paragraph 2 read and considered.

Amendment moved (*Mr. Molesworth*) to add after word "vessels" in line 7 the words "except under the supervision of the Shipping Master or his Deputy."
Question put,—That the words proposed to be added be so added.
Committee divided.

Aye.	Noes.
Mr. Molesworth.	Mr. Davis, Mr. J. D. FitzGerald.

And so it passed in the negative.

Same paragraph.

Amendment moved (*Mr. Molesworth*) to omit the words "only between the issue of articles and prior to expiry," lines 8 and 9.
Question put,—That the words proposed to be omitted stand part of the paragraph.
Committee divided.

Ayes.	No.
Mr. Davis, Mr. J. D. FitzGerald.	Mr. Molesworth.

And so it was resolved in the affirmative.

Paragraph, as read, agreed to.

Motion made (*Mr. Davis*), and Question put,—That the Report as amended be the Report of the Committee.

Committee divided.

Ayes.	No.
Mr. Davis, Mr. J. D. FitzGerald.	Mr. Molesworth.

And so it was resolved in the affirmative.

Motion made (*Mr. Davis*), and Question put,—That the Chairman report to the House.
Committee divided.

Ayes.	No.
Mr. Davis, Mr. J. D. FitzGerald.	Mr. Molesworth.

And so it was resolved in the affirmative.

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1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

MINUTES OF EVIDENCE

TAKEN BEFORE

THE SELECT COMMITTEE

ON THE

OPERATION OF THE SHIPPING LAWS.

THURSDAY, 1 FEBRUARY, 1894.

Present:—

MR. MOLESWORTH,		MR. DAVIS,
MR. G. D. CLARK,	|	MR. KELLY,
MR. J. D. FITZGERALD,	|	MR. EDDEN,
	MR. GARRARD.	

A. J. KELLY, ESQ., IN THE CHAIR.

Mr. James Edie called in, sworn, and examined:—

1. You are the Government Shipping Master? Yes.
2. How long have you occupied that position? Since November, 1890.
3. I suppose you have had many opportunities of forming an opinion as to the character of the scamen of the port? Yes.
4. You remember the late maritime strike? Yes.
5. How often were you on board vessels during that strike signing crews? I could not say right off.
6. You cannot say how often? No.
7. But it is a fact that you were on board vessels for that purpose? Yes.
8. Did you supply men with permits on board the vessels? Yes; in several instances.
9. Is it a fact that at the present time scamen have great difficulty to obtain permits? No.
10. They have not? No. If they can give any straightforward answer as to their last ship, or as to what they have been doing, they have no difficulty whatever. When a man comes in and asks for a permit we naturally ask him what his last ship was.
11. But it is necessary in order that a man may obtain a permit that he should have a colonial discharge? No.
12. That is not necessary? No.
13. Did you arrange any special facilities for the men wishing to obtain permits during the late strike? No; certainly not.
14. I suppose you are aware that there is such a thing as the Maritime Labour Bureau in Clarence-street, conducted by Mr. Currie? I do not know where it is situated, except from what the men have told me. I have never seen the place to my knowledge, nor have I been near it. I know Mr. Currie is there from what the men have told me. I have had nothing to do with Mr. Currie since the "Helen Nicoll" dispute.
15. You know that there is such a man? Yes, by repute.
16. As a matter of fact, have you not received a number of letters from him, asking you to give the men permits during the late maritime difficulty. In one instance, as far as I can recollect, a man brought an order signed by Currie to grant him a permit, but I declined to accept it. I told the man that I had nothing whatever to do with him, and that I did not recognise him as a shipowner or master.
17. No other correspondence passed between yourself and Mr. Currie with respect to men seeking employment during the difficulty to which I refer? I think I may safely say that there was no other correspondence.

Mr. J. Edie.

1 Feb., 1894.

- Mr. J. Edie. 18. Could you produce the order of which you speak? I do not think so. I did not take it. I did not recognise Mr. Currie in any way whatever, and I told the man that I had nothing to do with him. That is as nearly as I can recollect.
19. Was the man sent to you by Mr. Currie a competent seaman? I did not ask the man what he was; I did not choose to recognise Mr. Currie's authority. It is some time ago since the order was brought to me, and one cannot always carry these things in one's memory, but as far as I can remember the wording of it was, "Please give bearer a license," and it was signed by Currie.
20. *Mr. Molesworth.*] You simply declined to recognise Mr. Currie as a shipowner or master? Yes.
21. *Chairman.*] Are you aware that some of the men recommended by Mr. Currie had never been to sea before in their lives. Do you know of instances where Currie put on board ships without your knowledge, men who were not competent seamen? I cannot say anything as to what Currie may have done, but he recommended no case to me beyond the case to which I have referred.
22. *Mr. G. D. Clark.*] Was it possible for him to ship men without your knowledge? Ships registered in New South Wales have the power to engage their crews on board, providing they have a license or permit as it is called. The master has to bring to the office a discharge or license in the case of each man whose name appears upon the articles of agreement.
23. *Mr. Molesworth.*] There is a special privilege granted to New South Wales registered ships, by which owners are entitled to ship men on board the vessels, provided they have either a discharge or are recognised in some form by your office. On the production of the necessary document the men are entitled to be shipped on the articles, but their discharges have to be registered at the office subsequently? Yes.
24. *Chairman.*] Do you think it is right to grant permits to men who have never been to sea before? That depends upon what the men are engaged for.
25. But no man who has not been to sea before can be considered competent to go on board a vessel for duty? All men have to go to sea at some time or other to make a beginning.
26. But we all know that a man's first trip to sea would not make him a competent seaman? If you look at the Act you will see that the word "seaman" means any person employed or engaged on board a ship excepting a master, pilot, or apprentice. A man may be a cook's mate and yet be a "seaman," although you would not call him a sailor.
27. I suppose you would not think a man a qualified seaman when going on board a ship for the first time? As I have said it depends in what capacity he is to be employed.
28. But you would not, from your experience as the captain of a vessel, call such a man a competent seaman? He is not a sailor.
29. Have you ever marked on any of the permits which have been granted by you the words "deck hand?" Yes.
30. Do you know that that is in contravention of the Act, and that it contains no such title as "deck hand?" There are deck hands on many ships.
31. You have referred to the Act;—do you not know you are liable to punishment for marking a man's permit "deck hand" when no such title is recognised by the consolidated shipping law of New South Wales? I dare say it would have answered the purpose to mark the permits "first ship." The men were not sailors, and I did not look upon them as such.
32. No such term as "deck hand" is used in the Act? Not that I am aware of.
33. Would it not be better to sign all the men at the Shipping Office, instead of you or your deputy going round the harbour to sign them? No doubt it would be better to have the thing done there.
34. You think it will be better for all concerned in shipping that the men should sign in the Shipping Office, instead of you or your deputy going round the harbour signing the men on the vessels? That is not for me to say. I do not think I ought to be asked to express an opinion on that point.
35. But would it not be more convenient for you and the others if the men were shipped at the office, instead of your having to leave it? Perhaps I ought to mention that this system of signing on board is one which exists in the old country as well as in this Colony.
36. But do you not think that the course I have suggested would be better? As I have said before I would rather not express an opinion on that point.
37. *Mr. Molesworth.*] Do you think that it would be better in the interests of the New South Wales owned vessels for the men to be shipped at the Shipping Office? It is not done anywhere else.
38. *Chairman.*] All the deep-water ships in the old country sign at the Shipping Office, do they not? Not now, but it used to be so. At the present time if so many hours' notice is given at the Shipping Office an officer will go on board a vessel at a specified time to engage a crew.
39. I suppose you prefer not to give a definite answer as to the shipping of crews at the office? As far as the locally-owned vessels are concerned, it would be a hardship to them to force them to ship there, because, in Great Britain, and the other colonies, what are known as the home trade vessels, make all their arrangements on board.
40. You think it would be a hard thing upon the intercolonial steamers, but what about other vessels which have to sign on? The deep-sea vessels have to do it anywhere, and I do not know that it would be a hardship for them to have to do it here.
41. You do not favour intercolonial crews being signed on at the Shipping Office? I do not think I said that, but as a matter of fact intercolonial ships going to Fiji, or to Noumea, and registered in the Colony, engage their crews on board.
42. Your contention is that all ships registered within the Colony should have their crews signed on board? I did not say that.
43. Would you prefer them to sign at the Shipping Office? Well, the privilege they now enjoy is one they have had for all time.
44. But which would be the more convenient course, so far as the purposes of the Shipping Office are concerned? I would rather the shipping were done at the office, so far as I am concerned.
45. *Mr. Molesworth.*] But does the Shipping Office exist for your convenience, or for the convenience of the public? It certainly does not exist for my convenience. I presume it exists for the convenience of the public.
46. *Chairman.*] Have you any knowledge of several coasting captains making runs to the southern jetties and to Newcastle without signing crews on? I know of one instance in particular—the "Phœbe."

47. How did that arise? The captain's explanation to me was that he was out of the ship, and that the chief officer took the matter in hand. There was some dispute, and that is how the matter leaked out. I wanted the men to come to me and lay an information, but they declined to do so. Mr. J. Edie,
1 Feb., 1894.

48. I suppose you are aware that a practice of that sort is punishable under the Seamen's Laws Consolidation Act? Yes.

49. Did you ever take any steps in the matter? I got Mr. Smith, the Secretary to the Seamen's Union, to endeavour to get the crew of the vessel so that we might take proceedings, and he called and saw me about it. He said he could not get the men, and, if I recollect rightly, he afterwards wrote to the effect that the men would not come. He said that they decidedly objected to come, because, as they had often told me when I wanted them, and when I had asked them to lay an information, on account of their having been taken to sea without being on the articles, they would be marked men.

50. But it is in your power, independently of the men, to lay an information, and to see that the law is properly administered? Yes; but I will explain the difficulty which comes in. Without the men I can do nothing. Suppose some men go to sea without signing the articles, I appear in court, and in the absence of the men can prove nothing. I have to obtain the men in order to prove that they were on the ship.

51. You consider that your hands are tied unless you get the men? Of course.

52. It is customary for coasting captains, I believe, to deduct fees from the men, and not pay them into the Shipping Office;—have any cases of that sort come under your notice? Not that I am aware of. There are cases in which seamen have called upon me to complain of masters wishing to deduct more than the actual fee.

53. Do you not know that the practice of which I speak obtains? I do not.

54. Still it is customary for vessels going to the southern and northern jetties to take crews on board without your knowledge? It is not done that I know of. Some of the men have told me that things of that sort have happened, but I have had great difficulty in getting hold of the men.

55. Is it not possible for you to take any steps to prosecute the captains under such circumstances? I have not known of any case in which it would have been possible for me to prosecute, and for the reasons I have given you. Of course we can always stop the captain from getting his clearance, and he cannot go to sea without a clearance from our office.

56. You say you have known instances in which captains have charged the men an amount in excess of the proper fee? Yes, I have known cases in which they have charged them too much for their discharges.

57. Have you not heard of any instances in which they have levied fees, and have not paid them into the Shipping Office? No.

58. In any case you admit that there are instances in which ships have gone to the southern and northern jetties, shipping crews without your knowledge? I cannot admit that it is so, because I know nothing personally of the facts. The only case which ever came under my notice was that of the "Phœbe." That is the only case of which I can speak positively. If I recollect rightly an information was made against the captain of the "Kurrajong;" but I am not very sure about that case, and I had better not say that which I am not positive of.

59. Do you think a vessel is properly equipped if it has not a competent crew on board? No.

60. Is it not a part of your duty, and also the duty of your deputy, to see that no ship leaves this port unless she has a competent crew? No.

61. Then any ship can leave the port with an incompetent crew without your knowledge? I think that is a matter which concerns the Marine Board. It does not come upon us.

62. It is your duty to see that there are crews on each vessel? We have no power to stop the vessel from leaving the port although it may not have the specified number of sailors on board.

63. Is that the case under the local Act? We administer both Acts.

64. And it is possible for the ship to go out of port with an incompetent crew? I do not think I said that.

65. Has no instance come under your notice? In the first place I do not go near the ships to see whether what you say is correct or not—it is a matter which does not belong to our department.

66. According to your contention you are helpless in some of these matters? In the first place, the local Act does not specify how many men are to be sailors. It gives a description of the crew and that is all. Then again there is no provision under which we could stop them from going to sea.

67. Is it not an impossibility for an intercolonial steamer to leave the port without the articles first coming before you to be signed? Yes; but I am not in a position to say whether the vessel has a competent crew or not.

68. At the same time you know that they have a sufficient number of men on board? There is no law which says how many men there shall be on board.

69. But the law provides what the number of the crew shall be, does it not? If it is shown that there are so many men on the articles we cannot object to the ship going.

70. Is it not a fact that all the crew must come before you before the vessel leaves port? Yes, before me or my deputy in the case of engagements in vessels registered beyond the Colony. And unless they are provided with licenses or discharges, we do not give the ship its articles.

71. And if the articles are not granted what is the result? The vessel is detained.

72. Under what circumstances do you detain a vessel? When they do not give us the licenses or discharges of the men.

73. I am speaking of cases where the men have already signed on. If they have signed on the ship gets its articles? Yes; but the master says how many men he will carry.

74. But have you not to see that the proper number of men is upon the articles before you sign a vessel off; what I want to know is whether it is possible for any ship in New South Wales to go to sea with an insufficient number in her crew without your knowledge? It would be possible for the ship to go to sea in that condition. We have no means of knowing what takes place after the articles go out of our office.

75. Suppose I come to you as a captain of a vessel, and want you to sign my ship off; I present my articles with the number of my crew; you look over the articles, and if there are no debts against the vessel you will sign me off. What I want to know is whether it would be possible for me to get out of the harbour if the vessel were a New South Wales registered vessel, without your signing the articles and knowing the number of men on board the ship? Yes.

Mr. J. Edie. 76. *Mr. G. D. Clark.*] I should like to know, in the first place, what test you usually apply to a man who is asking for a permit. I should like to know what steps you take to ascertain if he is a qualified seaman or not? We do not give a license specifying whether the man is an engineer, a sailor, a fireman, or anything else. It is simply a license to engage.

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77. It is possible for an ordinary labourer to obtain a permit to ship as a deck hand? We usually ask them questions, and we endeavour to stop the practice as far as lies in our power. We are not supposed to know what a man is engaged for. If any person were to come to me and ask me to give a license to him as an able seaman, I should endeavour to satisfy myself that he was an able seaman, or if he desired to ship as a fireman I should endeavour to ascertain that he was a fireman.

78. But you admit that men have been shipped as deck-hands? Yes.

79. Do you not think it is dangerous to life and property that men who have never been to sea before in their lives, and who have had no experience before in such matters, should be allowed to ship as deck hands, seeing that they may be sent to the wheel, or put on the look-out? They would never send a deck hand to the wheel—he would be of no use there.

80. My experience some years ago led me to believe that "deck hand" was the usual term for sailors on board the intercolonial steamers? The term is used to distinguish between the stoke-hole and the deck. But a number of large ships leaving this Colony for London, such as the "Macquarie," carry a number of deck hands, men who are not supposed to go aloft, but who stay below, and who may be considered rouseabouts. That is what a deck hand really is.

81. But any man shipping on a coasting steamer as a deck hand would be called upon to do ordinary seaman's work on board? No, not sailors' work. He would be looked upon as knowing nothing about the ship. It would amount to the same thing if we put "first ship" on the license. For instance, some time ago several men came to me and wanted to ship. I put several questions to them. I said, "But you are not sailors at all." They admitted the fact. They said they wanted to be taken as deck hands or rouseabouts. If I recollect rightly the only case where such a thing was done was that of a southern collier. The owners said they wanted men to trim the coal, or some such explanation was given.

82. Have you any means of ascertaining definitely whether a ship is carrying its full complement of men or not. For instance, a vessel is supposed to carry twenty men in the crew; is there any possibility of the captain signing articles and going away with fifteen or say twelve men? The matter is one upon which I have had my doubts. Supposing the articles said there were six or ten sailors, and so many hands all told, the captain might make an arrangement with his men to go to sea a hand short, or perhaps two hands short, dividing the money among those who went. That is often done. There is no law which would allow me to prevent a captain under such circumstances from going to sea. There was some doubt about the matter, however, in my mind, and I wrote to the Board of Trade for their opinion. I have their opinion and can produce it. It was, that I had no power to withhold the clearance of a ship under such circumstances. The reason for my obtaining the opinion was this: A vessel going from here to Newcastle would want its articles. The captain would come to me and say, "We want our articles." I would say, "You have discharged so many men and you have not shipped men in their places. You have not your complement." He would reply, "That is nothing to do with you. I am going to tow round, and I do not require the men." But there is such a thing as a gale even when a vessel has the tow-ropes out, and some serious shipwrecks have taken place when vessels have been in tow. Captains in such circumstances have defied us, and I wrote to the Board of Trade on the subject. Of course a seaman or sailor could object to go to sea on an under-manned ship, and would incur no penalty by so doing, because the other party to the contract would not be keeping faith with him in having an insufficient number of men on board. What I want to make quite clear to you is, that we cannot interfere—we cannot stop the vessel from going to sea.

83. One of the objects of the Committee is to obtain legislation on this question, and I would ask your opinion as to whether it is right that any vessel should be allowed to leave the port with only one-half of her proper number of ordinary seamen on board; because if a vessel can leave port with only one or two hands short, there is no reason why she should not reduce the number to one-half of the proper complement and still leave the port? It is purely a matter of agreement between the master and his men. Of course, as Shipping Master, I should not like to see such a thing as you refer to take place.

84. You do not think it is right or safe in the public interest that a vessel should be allowed to leave port with less than the crew ordinarily used for the safe working of the vessel? You see where the difficulty comes in. There is no law specifying how many men shall be carried on a ship. The old tonnage law is abolished. If my memory serves me rightly it was repealed at the same time as the law relating to apprentices. The only case in which a certain number must be carried is that of an immigrant ship. In that case the surveyor is supposed to satisfy himself that the ship is properly equipped, and the crew are as much concerned in the equipment as are the boats.

85. It seems to me, from your general admissions, that it is possible under the existing law for a man to obtain a permit to ship as a deck hand, and to perform the duties of an ordinary seaman without his being a competent seaman; and, in the second place, that it is possible for a ship to leave the harbour without her full complement of crew? Of course a man may obtain a license without it being specified, how he is to be employed on board the ship. It does not say that a man is to be a fireman or a sailor, for instance. If you look at the 33rd section of the Seamen's Laws Consolidation Act you will see that that is so.

86. The point, which seems to me to be important in view of future legislation is, that under the existing law it is possible for a man to obtain a permit to ship; that is, to ship as a deck hand without his being a competent seaman, and that there is nothing to prevent such a man from being sent aloft to reef or take in sail? As I have said, a man can ship as anything.

87. *Mr. Molesworth.*] Will you kindly tell the Committee what Acts guide you in the discharge of your duties as Shipping Master? The Seamen's Laws Consolidation Act and the Merchant Shipping Act of 1854.

88. Are those the only two Acts under which you discharge your duties? There is also the Navigation Act of New South Wales, concerning engineers and officers' certificates.

89. Have you ever been called upon to discharge any duties which are not specially provided for by any of these Acts; in other words, have you been called upon to exercise discretionary power where the Act has not directed you? In the case of disputes with seamen.

90. But not with regard to the shipping or discharging of the men? No; that is provided for in both Acts. Mr. J. Edie.
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91. In speaking about the intercolonial trade and deep sea vessels some time since, you mentioned Fiji, as though the trade there were a deep sea trade;—do you recognise it as such? I am not sure whether Fiji comes within the Australasian Colonies or not.
92. But under the Customs Regulation Act Fiji is included in the intercolonial ports? Yes.
93. The privilege of shipping men on board vessels in the port is only enjoyed by vessels registered within the Colony? Just so.
94. Has there been any breach of that regulation at all? Not that I am aware of.
95. Under what arrangements then do you allow vessels to ship their crews on board when they are not registered within the Colony? When either I or the deputy-master are present.
96. By what authority? The authority of the Merchant Shipping Act.
97. But in the case of shipping crews on board, do you not insist upon the necessary discharges or permits being subsequently supplied to you? Yes; they have to be produced. We have to take the same course as when men are shipped from the office.
98. In other words, although the privilege of shipping on board is granted in certain instances, you insist, as in the shipping at the office, that the necessary discharges shall be produced? Yes.
99. Do you find the arrangement, permitting men to be shipped on board the vessels, a matter of general convenience to all concerned? It must be convenient to those vessels which have a limited time, that is, vessels which come into port and go out again almost immediately.
100. Do you consider that any risk of shipping unsuitable men or the doing of a wrong to seafaring men is run by such an arrangement? I cannot see where it comes in.
101. Do you find the privilege is abused in any way? I am not aware that it is.
102. Have you any complaints from the men in that direction? We have had complaints, but seldom from the men in the intercolonial steamers. It sometimes happens in the case of little vessels, where there are often squabbles. There may be disputes as to wages, or the master may wish to charge the whole of the Shipping Office expenses.
103. You do not find any complaint among the men generally with regard to this arrangement about shipping at the wharfs? No.
104. You think that the men, as a whole, are pretty well satisfied with the arrangement? As far as we know.
105. You told us just now that there was no means of your insisting upon a certain number of men being carried on any particular ship? No.
106. Is there any other body in existence which can determine whether a ship is properly manned or not? I should think the Marine Board could do so, but I do not know positively.
107. It is not a matter for which you are responsible? No. The Marine Board have an inspector to see that ships are properly equipped, and I take it that a ship's company is just as necessary a part of its equipment as are its boats.
108. What would you do in the event of any complaint being made to you to the effect that a vessel was insufficiently manned? I should lay the matter before the Marine Board, and should expect them to take action.
109. You consider it their province and not yours? Yes.
110. In the issuing of permits, what kind of examination would you put the men through before giving them permits? I should endeavour to ascertain a man's qualifications. For instance, if a man were an applicant for the position of fireman, and if did not think him suitable I should put the word "trimmer" on his permit. I have done so in some instances.
111. When you know that a man has not been to sea before, do you not usually insert words to that effect upon his permit? Generally "first ship."
112. Does not the law provide that you shall do so? No.
113. Does the law provide that you shall put the applicants through any examination whatever? No.
114. Are you satisfied with the law as it now stands; do you think it is sufficiently comprehensive for the business you are called upon to discharge? If the law made provision that I should satisfy myself as to a man's capabilities, I would guarantee that no man would get a license unless he knew his business.
115. Then you think the shipping law requires amendment in some particulars? Yes.
116. Will you kindly make a note of such amendments as you consider necessary, and submit them to the Committee at its next meeting? Yes.
117. *Mr. J. D. FitzGerald.*] Will you also produce a copy of the forms in use in your office, and especially a copy of the licenses you issue? Yes.
118. And also a copy of the opinion of the Board of Trade to which you have referred? Yes.
119. *Mr. Edden.*] I understood you to say, in reply to the Chairman, that vessels left this port contrary to law; that the masters were liable to prosecution; and that you tried to get Mr. Smith, the secretary of the Seamen's Union, to get the men to lay an information, but that they refused on the ground that if they took action they would be marked men? Yes.
120. I suppose you were convinced that the captains of these ships were liable to prosecution? Yes.
121. Do not the shipping laws empower you to institute a prosecution under such circumstances, and to summon the seamen to give evidence? The difficulty would be in getting hold of the men.
122. Does not the law empower you to institute the prosecution? Since the case to which I referred happened, I obtained the opinion of the Crown law officers who think the Shipping Master is the proper person to institute prosecutions; but I do not like taking it upon myself to summon the captain without being able to prove the charge.
123. But does not the same law, which gives you power to lay an information against the captain for a violation of the law, also give you power to summon the seamen to give evidence? Anyone has the power to lay an information. It is not my particular province to do so.
124. But I ask you if you have the power? I could do so.
125. Do you not think you neglect your duty when, knowing as you do, that the captain fails to observe the law, you do not institute a prosecution? It would be of no use to do so when the men cannot be found. I do not even know their names.

Mr. J. Edie. 126. You said that the reason you did not prosecute was that the men were afraid to give evidence. If that be so, it would appear that the men were to be found, but that because they were afraid to give evidence the prosecution was allowed to slip by. Have you not, yourself, said that you have refused to prosecute captains because the men said that if they gave evidence they would be marked men? Men have come to me, and have told me that certain things have been done, and Mr. Smith, who is secretary of the Seamen's Union, has told me the same thing. I think I have a letter from Mr. Smith to the effect that the men object to come forward; but in these instances I do not know the names of any of the men, and I could not find them.

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127. I thought you said that they had come to you? They came to me, but numbers of men come to me sometimes in the course of a day and make various statements and go away again, and it is impossible for me to know where to find them. Of course I do not ask the name of every man who comes into the office.

128. But sufficient has occurred to induce you to believe that the men are afraid to give evidence, on account of their being afterwards marked men? Yes.

TUESDAY, 6 FEBRUARY, 1894.

Present:—

MR. G. D. CLARK,
MR. DAVIS,

MR. J. D. FITZGERALD,
MR. WISE,

MR. EDDEN.

A. J. KELLY, ESQ., IN THE CHAIR.

Mr. James Edie recalled and further examined:—

Mr. J. Edie. 129. *Mr. J. D. FitzGerald.* You desire to correct your answer to question 58 in reference to the seamen going to sea without entering into a proper agreement? Yes. I said the other day that the only case I could think of was that of the "Phoebe," but I should have mentioned the case of the "Victorian" and the "Hesketh." As far as I can recollect both of those vessels took men to sea without entering into a proper agreement, and convictions were obtained against them. These cases slipped my memory when I was answering the question the other day.

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130. You promised to produce certain documents? Yes. I produce the articles of agreement in accordance with the 4th schedule of the Seamen's Laws Consolidation Act; also a copy of the articles of agreement under the Merchant Shipping Act, and the fore-castle copy of the two agreements. With regard to the opinion of the Board of Trade, as to my right to withhold the clearance of a vessel on account of her not having the full complement of her crew, I produce a copy of the letter I wrote to the Board of Trade asking for its opinion. [*Vide Appendix A 1.*] And also the opinion of the Board sent in reply to my letter. [*Vide Appendix A 2.*] Another thing I was asked to produce was the letter I received from the Secretary to the Federated Seamen's Union of Australasia, with reference to its failure to discover the men who had sailed in the "Phoebe" without signing articles. [*Vide Appendix A 3.*] I produce also the opinion of the Crown Law Officers with reference to my duties in initiating prosecutions. [*Vide Appendix A 4.*] Here is a copy of the account of change of crew of intercolonial or foreign trade ships. I produce also a copy of licenses to ship. [*Vide Appendix A 5.*] Forms of mutual release. [*Vide Appendix A 6.*] Forms of advance notes. [*Vide Appendix A 7.*] Number 2 clearance form in accordance with the Navigation Act Amendment Act 1881. [*Vide Appendix A 8.*] And the Customs certificate to vessels clearing issued by us under the Customs regulation. [*Vide Appendix A 9.*] I produce also forms of permit from the Colonies of Queensland. [*Vide Appendix A 10.*] South Australia. [*Vide Appendix A 11.*] And Victoria. [*Vide Appendix A 12.*] Also the form of permit used by the United States Consul in Sydney. [*Vide Appendix A 13.*] I may say that the fee in the other Colonies is 5s. I should like to make an explanation with reference to the shipping of deck hands. Here is a case in which I received an application from Messrs. Burns, Philp, & Co. to ship a man in the following terms:—"We desire to ship the bearer _____ in our steamer 'Hesketh' as A.B." [*Vide Appendix A 14.*] On questioning the man, I was perfectly satisfied that he was not a sailor, and I therefore scored out the letters "A.B." from the application form. He must have received a note from the owners through false representations. Being a sailor myself, when the man came before me I was very soon able to form an opinion as to his qualifications, and I said at once, "You are not a sailor." I asked him, in the first instance, whether he could give me the name of the ship he had been in, and after a time I discovered that he had not been to sea at all. I therefore put the words, "Deck hand—first ship" in the corner of the application form, and on the permit I put the words "first ship." Another man named Cooper brought a similar application to me from Burns, Philp, & Co. [*Vide Appendix A 15.*] I was also satisfied that he was not a sailor, and I therefore put the words "deck hand" on his permit. I may mention here that deck hands are often carried on cattle boats. They are not supposed to go above or below. In fact they occupy the position of common labourers on board the ship, and they are generally set to clean pig-styes and do things of that kind. When these men applied to me for permits as able seamen I satisfied myself that they were no such thing, but I had no power to go further. Of course it remained with the other parties to take action if they were satisfied that the man had represented himself to be that which he was not.

131. *Chairman.* You are not in a position to know whether the hands shipped as deck hands are used for the working of the ship—they might be asked to go aloft, for instance? They could not go aloft.

132. But it is quite evident that the owners who sent these men to you with their applications intended to use them for the working of the ship, because the letters "A.B." are inscribed upon the application forms? They may have obtained the application forms on false representations.

133. *Mr. G. D. Clark.* But in any case you have no power to prevent them from shipping? No.

134. *Chairman.* Did you make any inquiries from Messrs. Burns, Philp, & Co. in reference to these men who presented their applications when you were satisfied that they were not sailors? No; the application forms were stamped with Burns, Philp, & Co.'s office stamp, and had Mr. Forsyth's signature.

135. They must have applied to Messrs. Burns, Philp, & Co.'s office to ship as A.B.'s? Probably; but I had no means of knowing that the persons who brought the application forms to me were identical with the

the persons who had obtained them from Messrs. Burns, Philp, & Co. Another man named Doyle brought an application from the same firm to me to ship as an ordinary seaman. He could not even stand the test of an ordinary seaman. Here is the form. [*Vide Appendix A 16.*] I had it filled in with "O.S." in the first instance, but I afterwards scored that out and inserted "deck hand." Another man named Aylward brought an application from the same firm as an A.B. He was a sailor, but had been a number of years ashore. His last ship was a long way off, and the men came in the category of "shore service." [*Vide Appendix A 17.*] I was satisfied after looking the matter up that the case was genuine, and I gave him a permit without qualifying it in any way whatever. Whenever men apply to me for permits to ship as A.B.'s, and I am satisfied that they are totally unfit for the duty, I do not give them permits to engage as such. There have been complaints that I have refused permits or licenses to men, but the cases in which I have refused them have been where men have shipped and have received advance notes. They have left the ship, after cashing their advance notes, and they have then applied to me for another permit enabling them to ship again and perhaps to repeat the fraud. In cases of that kind I have insisted upon the men bringing their advance notes to me, and I have done so in order to prevent the practice of fraud.

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136. Is it within your recollection that at any time since you have been at the Shipping Office articles have been signed in the labour bureau, in Clarence-street? No.

137. You are sure of that? I am positive of it.

138. *Mr. Davis.* I think you stated last Thursday that the seamen who signed on board did not suffer any inconvenience from being so shipped? Yes. I am not aware of their suffering in any way.

139. Have you known of any cases where men have been paid off on board a vessel and have come to you after the vessel has left the port for their discharges, when they have discovered that their discharges were not at your office? Yes.

140. In such cases, I believe, the men have had sometimes to wait some weeks for the return of the vessel, in order that they might obtain their discharges? I have known of cases of that sort.

141. Do you remember a case of that kind occurring in connection with the "Egmont," about two years back, where the captain forgot to send the discharges to the Shipping Office? I do not recollect that particular case. It must have occurred before I filled the office of Shipping Master.

142. Do you remember the case of the "Gunga"; the vessel went down to Fiji and left the men without their discharges; they tried to recover damages, but got defeated? I think I have heard of it, but I do not know of the case personally.

143. But I suppose you know of a number of cases where men have been put to inconvenience through the discharges not being left at your office—in steamers, for instance, where the handing out of the discharges is left to the purser and mistakes often occur? As I have told you, I have known of cases where the men have not received any discharges, and I think the Act is defective in this respect. There is simply a £10 penalty if the master does not deposit the discharges at the office. But I think mistakes of the kind to which you refer would be prevented if provision were made in the law that the men's wages should continue until their discharges were deposited at the Shipping Office.

144. You think an alteration in the law should be made to that effect? Yes; as the law now stands there is simply a fine of £10, and that does not benefit the men who are deprived of their discharges.

145. You admit, therefore, that some inconvenience arises;—do you not think it would be remedied if vessels had to ship and discharge at your office? I think the case would be met if wages were made to continue until the discharges were deposited. It would protect the seamen and would not inconvenience the ships.

146. In your experience as Shipping Master, have you not known of cases where the articles have not been correctly read over by the captain or mate on board of the vessel, where they have not taken the same trouble in the matter as you or your deputy would have done? We have had sailors and others on ships saying that they did not hear us read them, and they have said the same thing of the officers of ships. That very thing was said during the last dispute. The men said, for instance, that they did not hear the articles read on board the "Wodonga."

147. Cases came before the Police Court, did they not, where the captains admitted that they had not read the articles before the men? There have been cases of that sort.

148. Captain French, of the "Tweed," at the time of the trouble which occurred about fifteen months ago, admitted that the men had signed without having the articles read over to them? Yes; I think there was a case in the last dispute where a similar thing occurred.

149. Have you not known cases where the captains have signed articles in their cabins or in the small smoking rooms in which there were the captain, the purser, and two or three officers, and where it was practically impossible for the bulk of the crew to understand or to know what they were signing? I have known the crew to sign in smoking rooms, and I have known them to be brought in in different lots.

150. But I am referring to cases where neither you nor your deputy were present? I cannot speak as to those cases.

151. Under the present system, however, you have no guarantee that the articles are read out? When I first came to the Shipping Office the rule was to give out a blank form for the fore-castle to copy. The Act specifies that there shall be a copy in the fore-castle, but it does not say that it shall be filled up in the Shipping Office or signed by the Shipping Master. I thought that was very unsatisfactory, and it was totally different from anything I have been accustomed to. I altered that practice, and I had the fore-castle copy filled in with the duplicate in the Shipping Office, the master of the ship signing the whole three, so that the sailors always have a copy in the fore-castle.

152. But you are aware that the present Shipping Masters came into vogue some thirty-five years ago for the special benefit of the illiterate seamen. The Shipping Masters are supposed to explain the articles to those men;—what benefit would it be to them to see a duplicate copy of the articles hung up in the fore-castle, unless they had some one to read them over to them, and to explain them? The law in force here permitting vessels to engage on board is in force in Great Britain, and in all the dependencies where they have what is called a home trade. They can either ship or discharge on board, independently of the Shipping Office. The home trade limits of the Navigation Act are Rockhampton on the one side and Melbourne on the other. Under the Queensland Act the home trade limits are the whole of the Queensland ports, and any of the ports of New South Wales. The home trade limits of the Victorian Act are Port Stephens on the one side, and Spencer's Gulf on the other. I do not know the limits of the

the

Mr. J. Edie. the South Australian home trade. In our Seamen's Laws Consolidation Act we have no home trade, there is only the intercolonial and foreign trade. The definitions in use in the other Colonies are "home trade" and "foreign trade." Anything beyond the limits laid down for the home trade is regarded as foreign trade.

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153. With reference to the question of permits you have had some notes sent up from the A.U.S.N. Co. and other companies to the effect that they desired to ship the bearers? Yes.

154. Do you know if the men came direct from the persons who subscribed their names to the forms? That I could not say.

155. I believe that in Victoria the law will not allow the men to sign on Victorian-registered vessels, that is, the permits would not allow them to sign on board? Take the case of the Victorian home trade. Suppose a collier is running from Melbourne to Newcastle, I do not think a permit is required even if the men have no discharge. I believe the men ship on board, and that the articles are not witnessed in the Shipping Office.

156. But the men must have a discharge? I do not know about the discharges. Victoria is entirely under the "Merchant Shipping Act," and as I pointed out, their law does not recognise what is known here under our law as the intercolonial trade.

157. Have you ever refused permits to persons other than in the cases of men who have obtained a month's advance, and have left their ships? Yes; during the late dispute I refused two or three permits because I could see that the applications were not genuine. I am always willing to assist those who convince me of the honesty of their intentions, but there were some cases in which that was not so.

158. Did you refuse any cases before the dispute? Not that I am aware of.

159. Have the men not been obliged, since you have been at the Shipping Office, when they have lost their discharges, to make an affidavit that they have lost them, and that they have neither pawned nor sold them? I have never sent a man to make an affidavit, but it was the custom prior to my time at the office. I objected to its being done, and I spoke to the late Mr. Bagar about it. He proposed to have me made a J.P., but something interfered, whether it was his retirement or not I do not know. The present Colonial Treasurer, however, had me made a J.P., and now when men cannot produce their discharges they make a declaration before me, and are not led to any expense. The practice was brought under my notice when a man brought a declaration to me, and I asked him why he had done so.

160. There is nothing in the Act to prevent a ship from going to sea with any number of hands the master may like to take? I know of nothing in the Merchant Shipping Act against it.

161. There is nothing to prevent a ship from going to sea with only its officers;—it can go to sea without any hands at all in fact if the master and the officers are agreeable? If those on board like to make an agreement with the master to that effect.

162. That applies to all classes of vessels—passenger and otherwise? Yes.

163. *Chairman.*] There would be nothing to prevent the captain of a passenger ship from taking to sea a thoroughly incompetent crew? I have nothing to do with the Passenger Act.

164. Who has to do with it? The Marine Board. If you look at the different copies of articles I have handed in you will see that the Merchant Shipping Act simply provides for the description of the number of sailors. Our Act ignores the word "sailors" altogether.

165. *Mr. Davis.*] Is there anything in the law, so far as you know, to prevent a master from taking a vessel to sea against the wishes of the mate and second mate, they being of opinion that the crew are thoroughly incompetent? Well, any man could refuse to do what is not right, and would be absolved from any penalty.

166. No penalty would be incurred by a mate or second mate refusing to go to sea under such circumstances? No; the law will come in there to protect them. It would have to be proved that the ship was properly equipped, and it could not be said to be properly equipped if it had an incompetent crew.

167. *Mr. Wise.*] Have you been a Shipping Master in any other port? No.

168. Certain duties are imposed upon you by law for the protection of seamen? Yes.

169. For instance, every seaman is required to sign articles in the presence of yourself or your deputy? On ships registered beyond the Colony only.

170. In reference to ships registered here, have you any control over seamen? No direct control. They engage the men on board the ships, and the law states that they shall produce the licenses or discharges of the men engaged, with a duplicate of the agreement, at our office.

171. Ships on foreign registers engaging here have to engage in your presence, or in the presence of the deputy? Yes.

172. Ships registered here may engage on board, but the seamen have, after their engagement, to appear before you? No. The owner or master who has engaged has to produce at our office licenses or discharges and a duplicate of the agreement; that is all.

173. Under what section of the Act is that? Under section 16. Section 15 applies to the same thing.

174. Where is the section of the Act which exempts ships registered here from engaging before you or your deputy at the Shipping Office? Section 15.

175. Does not section 15 apply to every ship excepting vessels of less than 80 tons trading on the coast? Yes.

176. Any vessel, excepting those, has to engage seamen in accordance with the provisions of section 15? Yes.

177. Does not that apply to vessels wherever registered? It applies to New South Wales ships only.

178. If you look at the definition of "ship" you will see that it is every description of ship used in navigation, not ordinarily propelled by oars? Yes.

179. I cannot see where you draw the distinction under the Act between the two classes of ships—ships registered in the Colony and those registered abroad;—section 16 applies to the same class of ships as section 15? Look at section 90.

180. Having read section 90, does it not seem to you that the provisions of sections 15 and 16, as to the engagement of seamen, apply to all ships except coasters of less than 80 tons? I do not think so.

181. But in practice, and putting the legal interpretation aside, to what vessels do you consider sections 15 and 16 apply? To all New South Wales registered ships.

182. Only to them? Yes.

183. Then, if a vessel is registered elsewhere than in New South Wales, are you not required to perform the duties imposed on Shipping Masters with regard to the engagement of seamen by the Merchant Shipping Act? Yes.

184. Is there any difference between the duties imposed by section 15 of our Act and the duties imposed by the Merchant Shipping Act as to the engagement of seamen? The Merchant Shipping Act distinctly states that it shall be done before an officer. Mr. J. Edie.
6 Feb., 1894.
185. An officer of the ship? No; a superintendent of mercantile marine, a Shipping Master, or a consul, and, failing, a consular officer before a respectable merchant.
186. The Merchant Shipping Act requires that all engagements shall be before a Shipping Master or his deputy? Except in the case of substitutes.
187. Quite so;—section 150 of the Merchant Shipping Act sets out the duties of Shipping Masters in the engagement of seamen? Yes.
188. Section 155 deals with the foreign trade? Yes.
189. And those are the two sections which relate to the duties of Shipping Masters upon the engagement of seamen? Section 149 gives all the particulars of engagement.
190. We will say the two sections I have named and other sections giving further details for special cases? Yes.
191. Is there any difference between the duties of the Shipping Master under the Merchant Shipping Act and his duties under our Act with respect to the engagement of seamen? The Merchant Shipping Act requires all engagements to be made before the superintendent or his deputy.
192. Is that an advantage to the seamen? I do not see where it comes in. They understand what they are about, and they have a copy of the articles in the fore-castle.
193. It does not make any practical difference to the seamen, you think, whether they sign on in your presence or in the presence of the officers of the ship? No; because any sailor, if he has the slightest doubt about his agreement, has only to come up to the Shipping Office.
194. Will you look at section 16;—does it not provide that you or your deputy shall read over and explain the articles? No; not unless the men sign in the office.
195. Does it not appear to you that the object of this section was to insure the articles being read over by the Shipping Master or his deputy. The Act says: "Provided that the signature of each seaman shall be attested by the Shipping Master, or by some other witness, and before being signed the agreement shall be read over and explained to such seaman." Do you not interpret that to mean that the person to read over and explain the agreement to the seamen is the Shipping Master? No; because the section says, "either before the Shipping Master or on board."
196. Does not that section appear to you to contemplate that, whether the men engage on board or not, the Shipping Master or his deputy shall be present? No; I think not.
197. Under the "Merchant Shipping Act" the superintendent would have to be present? Yes.
198. Is the reading over of the agreement, as a rule, carefully done, or is it merely a perfunctory job? It is very carefully done. I read through all the conditions before the men sign them.
199. If additions are made to the ordinary scheduled articles;—if there are clauses which are not in the printed form—do you make a special point of drawing attention to them and explaining them? Yes; we are bound to read them.
200. But do you specially call attention to the fact that they are unusual and additional clauses? Any special stipulation is carefully called attention to.
201. But do you point out to the men the fact that it is a special stipulation? We read out the conditions carefully, and if exception is taken to any clause attention is called to it.
202. Do you, as a matter of fact, do anything more than read out the clauses? We simply read them out except there is anything extraordinary about them.
203. The words "and explain" in the Act are given effect to only if a question is asked, and not unless? Yes.
204. Do you yourself compare the fore-castle copy with the copy which is signed by the men? Yes; and I sign the fore-castle copy myself.
205. Do you compare the two? Yes. The fore-castle copy is filled in by us. It was not done at one time but it is done now.

THURSDAY, 8 FEBRUARY, 1894.

Present:—

MR. WISE,

MR. G. D. CLARK,

MR. DAVIS.

A. J. KELLY, ESQ., IN THE CHAIR.

Mr. James Edie recalled and further examined:—

206. *Mr. Wise.*] Does not the law require that a seaman shall not be shipped unless he has either a discharge or a license? Yes; that is our local law. Mr. J. Edie.
8 Feb., 1894.
207. The object of that I presume, is to secure to some extent the competence of the crew? And to prevent deserters from other ships getting away.
208. Can you give the Committee any information as to the reason for the departure in our law from the provisions of the English law, which allows a seaman to ship here with a license, even though he may have no discharge? I am not very clear as to the reason. In England there is no inducement for deserters, and I imagine that this section as to licenses was introduced into our law to prevent seamen from deserting. In 1864, there were a great many desertions in Sydney and Melbourne.
209. How would this provision prevent desertion? The seamen have to produce to the party engaging them either a license or a discharge. A deserter would have to satisfy the Shipping Office authorities as to where he came from.
210. Do you claim any power to refuse a man a license? I cannot refuse him if his answers are satisfactory.
211. What do you mean by satisfactory? Well, I have refused licenses to some men.
212. Upon what general grounds would you feel yourself entitled to refuse a license? Well, the fact of a man belonging to another ship still in port or within the Colony.
213. Any other ground? I know of no other ground.

- Mr. J. Edie. 214. Have you any power to refuse a license on the ground that a man is not a competent seaman? No.
- 8 Feb. 1894. 215. Then, if this provision, requiring a seaman to produce a license is intended to be any security for his competence, it is entirely illusory? Just so. It is only in glaring cases which come under my notice that I take it upon myself to refuse a license or to qualify the license. Ordinarily I do not refuse, but I qualify it, and I do not know that even in doing that I am acting within the law.
216. Will you point out to me the section of the Act which authorises the issue of the licenses? Section 33.
217. That is the only section? Yes.
218. The 33rd section recites: "In case any seaman of any ship, of whatever tonnage the same may be, shall have lost his discharge, or from any other cause shall be unable to produce the same, or if any other person shall be desirous of engaging as a seaman, it shall be lawful for any Shipping Master, on being satisfied of the fact of such loss, inability or desire, as the case may be, to grant and deliver to such seaman or other person a license to ship, which license shall be in writing, and signed by the Shipping Master." That section authorises the Shipping Master to grant licenses to any person other than a seaman, and it is a provision which is peculiar to our Act? I think so.
219. From your experience, do you think it would be desirable to assimilate the law of this Colony to the law of England in this particular of only shipping qualified men? The law of England does not distinctly state that that shall be done.
220. Are there no provisions in the Merchant Shipping Act to secure the competence of the men who are shipped? Well, there is the Act 43 and 44 Victoria No. 16, the Merchant Seamen's Payment of Wages and Rating Act of 1880.
221. What does that Act stipulate? A seaman is not entitled to be rated as an A. B. unless he has served at sea four years before the mast. In the case of fishermen on registered deck fishing vessels, they must, before being so rated, have been employed at least three years, and have at least one year's sea service, or in a training vessel, in addition the services to be proved by certificate of service from the Registrar-General of seamen, which is to specify whether the service was on board a sailing or steam ship, or by other proof.
222. Have we any similar provision in our law? No.
223. Does the Imperial Act apply to our Colony? Only in the case of ships registered beyond the Colony.
224. Do you think it would be desirable to introduce into our law a similar provision, which would have the effect of preventing men from being rated as A.Bs. when they are not competent A.Bs.? Undoubtedly; a sailor ought to know his business.
225. Do I exaggerate when I say that as the law now stands it would be possible for any man from the plough to be shipped on board a ship, and to appear on the articles as an A. B.? If those on board the ship choose to put him on the articles as such,—we have no power to prevent them doing so. They can put him on the articles in any capacity they think fit.
226. Chairman.] And you would strongly advise an amendment of our law in this particular? Yes.
227. Mr. Wise.] Is there any other provision in the English law affecting the evidence of the competence of the seamen who are engaged before the Master? Yes.
228. I understand that if a Shipping Master is not satisfied that a seaman has served four years, or that he cannot produce evidence of it, he may, in giving him permission to ship, mark his permit "N.P.," or in other words, not proved, meaning that the man has not proved that he has not served his time as an A.B.? Yes.
229. That does not debar him from shipping? No.
230. Chairman.] In the event of the man being shipped upon such a license, is it in the power of the captain, at the termination of a voyage, to stop his wages for incompetency? Well, he might reduce the man to an "O.S.," or a fireman, for instance, might be reduced to a trimmer.
231. But he is bound to pay the man the wages for the grade to which he is reduced at the terminal port? Yes; but you must state your reasons for saying that the man is incompetent. You must make an entry in the official log, read it over to the man, and also enter any reply the man may make. At the end of the voyage, when you are paying off, the matter has to be settled.
232. Suppose the man disputes the amount of wages, what steps does he take to ventilate his grievance; does he appear before the Shipping Master at the terminal point? Yes.
233. And is it in the province of the Shipping Master to determine the correct rate of wages to be paid? The Shipping Master can advise in a dispute; or, if both sides agree in writing to submit the matter to him, he can settle a dispute.
234. Mr. Davis.] But if they do not agree? Then they must go to Court.
235. Are you not aware that in every port in the United Kingdom, where there is a training-ship or a man-of-war, it is the usual custom for a Shipping Master to give the men whose rate of wages are in question, a letter to one of the officers so that the man may be examined by the boatswain;—if the man satisfies the boatswain as to his competency the opinion of his captain is over-ruled? I believe that is so.
236. Chairman.] Is it within your province to prosecute any man who may ship seamen without your knowledge? It is not definitely specified in the Act, except in the case of deserters.
237. Suppose I wanted to ship a crew without your knowledge;—suppose I took them to a certain place, and got them to sign articles at that place, and did not communicate the fact to you;—would it be within your province as Shipping Master to prosecute me? Yes; the 16th section distinctly states that the men must be engaged before the Shipping Master, or on board the ship in which they are to be employed. Shipping elsewhere would be an infringement of the law.
238. You think you would be justified in prosecuting in a case of that kind? I think I should.
239. Mr. Wise.] Besides the provision relating to the engagement of seamen by yourself and the production of the discharges, is there another provision relating to the engagement of seamen which prohibits any person, not being the owner, master, or mate of the ship, or the *bona-fide* servant, or in the constant employ of the owner or Shipping Master, to engage or to supply or employ any person as a seaman? Yes.
240. What is the object of that section, so far as you are aware? To prevent crimping—to prevent an individual from contracting with a ship's captain to supply a number of men to the detriment of others. There are boarding-houses in Sydney, I am told, where attempts are made to do that sort of thing. Of course I can only go by what I am told.
241. Have you become aware of the existence of an institution here known as the Steamship-owners' Bureau? Yes.

Mr. J. Edie.
8 Feb., 1894.

242. Is a Mr. Currie secretary to that bureau? He is.
243. Do you happen to know that a similar institution exists in London? In London, I believe, they have what are called licensed runners, or outside shipping agents.
244. But do you happen to know that the Steamship-owners' Association has a bureau in London? Yes.
245. Do you know whether the opinion of the Crown law officers was taken by the Board of Trade as to the legality of this body? Yes.
246. Has the Board of Trade supplied you with their opinion? No.
247. Have you seen a copy of the opinion published in any nautical or professional journal? I think I have seen it in *Fair Play*.
248. That is a shipping paper? Yes.
249. Could you supply us with a copy? I think the Exchange is the only place where you could get it in Sydney.
250. Am I right in saying that the opinion of the present Attorney-General and Solicitor-General in England was that the Steamship-owners' Labour Bureau was illegal, and that persons engaging seamen at that institution were liable to prosecution? Yes; I think you are.
251. The English section is the same as ours? Yes; I think it reads the same as ours. Ours is section 14, subsection 1 of the Seamen's Laws Consolidation Act.
252. Is there any similar section in the Victorian Act? They work under the Imperial Act.
253. Do you happen to know whether any prosecution under that Act was commenced against Captain Dyson in Victoria? Yes.
254. He was the manager of the bureau there? Yes.
255. Was the conviction sustained by the Full Court as far as you know? Yes.
256. How is it that there have been no prosecutions here? There have been some prosecutions here. I fancy the secretary of the Seamen's Union took action here, but I cannot be sure.
257. But has there been any official prosecution by you as Shipping Master? No.
258. Does Mr. Currie send you a considerable number of men? Not that I am aware of.
259. You have no written evidence of Mr. Currie having sent men to you? No.
260. Have you any suggestions to make as the result of your experience with regard to any beneficial improvements in the law? I have made a note of several things. There is a provision in our law, I think it is in section 32, with reference to dispensing with discharges on immediate re-engagement. Suppose a man has been several years in a ship, as was the case with many of the men previous to these disputes, he would get no discharge. The men would sign fresh articles every six or twelve months, but they would receive no discharge. Suppose a man signs fresh articles on the 6th June, on the 6th July, a month later, he has a dispute with the owner or master, he is then dismissed with a declined to report discharge. That is, the master declines to report on the man's character or qualifications, or otherwise, and that one month's discharge is all that the man has to show for his three or four years service.
261. What remedy would you suggest? That articles should be taken out as in other places for six months from date to date, and that a man should receive his discharge at the end of each six months, or at whatever time he may leave his ship. Every time he re-engaged, he should produce his last discharge.
262. Is that the practice under the Merchant Shipping Act? Yes. But at present, under our Act, a man can sign articles for an unlimited time. What I suggest is, that he should sign for a fixed period, say, six months.
263. In no other part of the world does this provision of our law prevail? No.
264. *Mr. Davis.*] Do you remember the case in which a Shipping Master proceeded against Howard Smith and Co., who wanted to draw articles for two years. Howard Smith won that case, did they not? The only case in reference to the duration of ships articles was that of the s.s. "Sydney"—Skinner (master of the "Sydney") *versus* Brown (Shipping Master). The Supreme Court decided, without costs against the Shipping Master, that agreements could be made out for two years. Shortly after this case was decided, Messrs. Howard Smith and Co., through one of their captains, applied for articles of agreement for a longer period than six months, but as the vessel in question was registered beyond the Colony, their application was not granted, and the matter was not proceeded with.
265. *Chairman.*] Can you suggest any other amendment in the law? Yes; I would suggest that the 4th schedule of the Act should be so altered as to correspond with the like schedule under the Merchant Shipping Act.
266. *Mr. Wise.*] What are the principal points of difference between the two schedules? Our schedule does not say how many men are to be sailors, and there is no release. Men discharged on board ship are really not discharged because they simply sign the pay-sheet. I recommend that there should be a form of release on the articles, which should be signed by the seamen on discharge.
267. Do the schedules differ on any other important point? I do not think so.
268. Can you recommend any other alteration of the law? I do not know that I can.
269. Would it be a good thing, in your opinion, to provide that all the men should sign articles at the Shipping Office? I do not think it would make any difference.
270. *Mr. G. D. Clark.*] Do you not think some power should be vested in you, as Shipping Master, to refuse to give a permit or license to a man you felt satisfied was not a sailor? Then a difficulty would arise with the men's employers because they would turn round and say, "We are going to employ this man in such and such a capacity."
271. But is it not dangerous to life and property that coasting steamers who carry passengers should be allowed to ship as seamen men who are not seamen at all? I quite agree with you there. It is just as necessary that a ship should have sailors as that she should have boats. If she has boats she must have sailors to use them.
272. Do you not think that there should be some provision enabling the Shipping Master to refuse a permit to a man who he feels satisfied is not a seaman at all? The difficulty is that the law does not provide that a man shall sign as an able seaman—he may sign as anything.
273. You say that you wrote "deck hand" upon some of the permits. That amounts to nothing because the men may be called upon to do seamen's work. Suppose there were half-a-dozen deck hands on board a steamer, and boats were required, those men would not be capable of handling the boats? Before you do anything in that matter, you would have to so amend the law as to compel vessels to carry so many sailors. Even the English law does not say that a certain number shall be sailors.

- Mr. J. Edie. 274. *Chairman.*] Is there anything in the law giving you power to deal with these coasting vessels? In what respect?
- 8 Feb., 1894. 275. The shipping of the men on board of them? They have power to do so.
276. Could you suggest any means by which you could get them under your control? I do not see how you could do so unless you had a law to the effect that vessels of a certain tonnage should carry so many sailors.
277. Would it not be wise to provide in the law that any vessel over a certain tonnage should ship a certain number of sailors, and that either you or your deputy should attest the articles? That is a very difficult point to determine. I am not aware that it is done anywhere else. It is exceedingly difficult for me in my position to give you advice upon such a matter.
278. But is it not a common practice among coasting vessels for the captains to pick up any class of men to take them on board, and to get them to work the ship without your knowledge? A man may ship as anything if he has a discharge.
279. You have absolutely no control over men shipped in coasting vessels? Not beyond seeing that the agreement is drawn up.
280. What do they do when they want to get crews—they have to submit their articles to you for signature? They have to submit the articles to us with the names of the men engaged, and the licenses or discharges must correspond.
281. But if you have any doubt about the men being qualified, you are powerless to prevent them from going to sea? That is outside of my functions altogether. The captain has complied with the requirements of the Act when he produces the discharge or license of each man he has engaged.
282. Would it not be advisable to so amend the law as to give you power to protect life and property from the shipping of incompetent men? I should prefer not to express an opinion upon that point. I should like to qualify an answer I gave to Mr. Davis the other day respecting the shipping men at the Steamship-owners' Association Labour Bureau. I said that I knew of no case where that had been done. I have since thought the matter over, and I think I have heard of cases of that kind occurring, although I cannot speak as to the particular cases. Men have told me that such-and-such things have happened, but I do not know them personally.
283. *Mr. Davis.*] You said, in reply to Mr. Clark, that you could not put the men under any examination to ascertain whether they were seamen, because the master of the vessel might turn round and say that he desired to use the men in some other capacity than as sailors;—would it not be well for the owners to specify what they intend the men to ship as? It would certainly simplify matters; but if you did that it would be putting me in a position of examiner, and I should have to prove the men's competency. I have entered into the question of their competency in certain cases, but I think I have exceeded my duty in doing so. The Act does not specify that I shall do so, but when glaring cases comes under one's notice, one cannot, conscientiously, allow them to pass.
284. I suppose you are aware that all steam-ships carrying passengers have to obtain a certificate from the Marine Board every six or twelve months? Yes.
285. What kind of examination is the ship subjected to before that certificate is obtained? The boilers, boats, chain-cables, fire-hose, life-belts, pumps, and general equipment of the ship are examined.
286. And the men on board the ship, who are to use all this paraphernalia, are not subjected to any examination? No.
287. Have you ever known of any examination of boats on board of any steam-ship in the port of Sydney previous to her going out to sea? I have had my own ship surveyed in Sydney only once, so that I have had no means of knowing.
288. Are you aware that the Marine Inspector in Brisbane subjects all steamers leaving that port to an examination of the boats and chain-cables, &c.? I am not aware whether that is so or not.

TUESDAY, 13 FEBRUARY, 1894.

Present:—

MR. EDDEN,

MR. G. D. CLARK,

MR. DAVIS.

A. J. KELLY, ESQ., IN THE CHAIR.

Mr. William Currie called in, sworn, and examined:—

- Mr. W. Currie. 289. *Chairman.*] I believe you are the manager of the Steamship-owners' Association Labour Bureau in Clarence-street? I believe so.
- 13 Feb., 1894. 290. What duties are entrusted to you as manager of the bureau? They are in reference to seamen, firemen, cooks, stewards, and wharf labourers—all sorts of maritime work.
291. I suppose you have had some experience of maritime labour prior to your occupying the position of manager of the bureau? I think so.
292. Is it a fact that you have declined to give the men belonging to the Seamen's Union tickets to ship? No.
293. It is not a fact? No.
294. Are you aware of men coming to you having already secured work from engineers and officers, and of your blocking them? No.
295. Is it not within your knowledge that men have come to you under such circumstances, and that you have blocked them? Well, men have come to me sometimes, and I have had occasion to say, "There are other men before you."
296. Did you, during the late maritime strike, send men on board the steamers? Certainly; in my position of manager of the labour bureau of the steamship-owners, I have acted according to my instructions.
297. Did you ever examine any of those men as to their capabilities as firemen or seamen? It was not my duty to so examine them.
298. What method have you then of discovering whether the men are competent or not? The shipping of competent men depends entirely upon the engineers and officers.
299. Did you ascertain whether the men had discharges or licenses from the Shipping Master? Certainly.

Mr.
W. Currie.

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300. Do you remember any instance in which the men were without them? There were no such instances that I am aware of.
301. You are not aware of any? I am not.
302. Is it a fact that you supplied men to certain steamers knowing at the time you did so that they had neither discharges nor licenses? No.
303. You are quite sure of that? I am not aware of any such cases.
304. Did you ever tell any men to go on board and that you would provide them with discharges or licenses? Certainly not. How could I do that? I certainly have not done so to my knowledge.
305. You have a knowledge of some men being taken from the depôt ship "Franklin"? I have heard of such a thing, but I do not know anything about it myself.
306. You have no knowledge of it? I heard of it, that is all.
307. Did you not supply men from the depôt ship for certain vessels, the "Emu" for instance? I say distinctly no.
308. Where did that steamer get her crew from, was it from your office? That I cannot say.
309. Have you any knowledge of the fact that the crew of the "Emu" had had no previous experience at sea? I had no such knowledge.
310. They were not signed on on board the ship? I do not know anything at all about that.
311. Have you ever signed any men at your office in time of difficulty? So far as I am concerned no men have ever signed there. I do not know what may have been done when I have been outside.
312. You said just now that you had not blocked any men? No; why should I block them.
313. Do you remember the case of a man named Thomas Conley who had done a trip on the "Rockton"? I cannot recollect it.
314. You are sure you never blocked that man? Not that I am aware of, I do not remember the man's name.
315. The man will probably come before us in the capacity of a witness. He is a very reliable man and I should like you, if possible, to give a definite answer to my question. Your answer may affect you hereafter? I do not remember the man's name—that is all I can say.
316. Did you ever receive any instructions from the Steamship-owner's Association to the effect that you were not to recommend any men who took part in the late maritime strike? Certainly not. It is true that I received certain instructions in a general way, but I used my own discretion.
317. Why did you stop three men from shipping on board the steamer "Arrawatta," knowing as you did that the men had worked a day on board. The names of the men are John Olsen, A. Marshall, and H. Fernman? I do not remember the instance.
318. There has been a good deal of correspondence between you and the Shipping Master? No.
319. Do you say that there has been none? Not that I am aware of.
320. None whatever? None that I am aware of.
321. Supposing I tell you that we have evidence to prove that you had such correspondence? I do not remember any.
322. *Mr. G. D. Clark.*] You surely must remember whether you have corresponded with the Shipping Master or not? I have not had any correspondence with him that I am aware of.
323. *Chairman.*] Supposing that we produced some of the correspondence, I suppose you would look upon it as clear evidence that it has taken place? That would be so I suppose.
324. Did you ever recommend any men to the Shipping Master for licenses to ship? I do not think so.
325. You are sure that you have not done so? I do not think that I have done so.
326. You are not aware that he has refused to grant permits to certain men you have recommended? I do not remember anything of the sort.
327. Is it a fact that the steamship-owners will not employ anyone in any capacity unless he first receives a ticket from you? No.
328. What are the instances in which they employ men without such a ticket? I believe there are many instances.
329. Will you name one? I should have to go through my books and a number of articles in order to find out.
330. Have you books in which such a record is kept? That is a matter which concerns the Association solely, and I decline to answer the question.
331. But I must insist upon some answer. Do you keep no record whatever? We keep no record of men who have gone on board ships without a ticket from the bureau.
332. You do not know of instances where men have got employment without a ticket? On the contrary, I understand that there are a number.
333. Will you name any instances which have occurred since the last difficulty, where men have been shipped without first consulting you? I decline to answer that question.
334. But there have been such instances? I decline to answer the question.
335. It would appear that you have two classes of tickets? Not that I am aware of. We have only one class.
336. What is that? We have only one kind of ticket so far as seamen, firemen, cooks, or stewards are concerned.
337. What sort of ticket is it; has it any distinguishing colour? Certainly not.
338. It is the recognised ticket among the employers? And among the men as well.
339. *Mr. G. D. Clark.*] Could you produce a copy of the ticket? Certainly, with pleasure.
340. *Chairman.*] Do these tickets guarantee the men employment? No.
341. They give no guarantee? There is no guarantee at all; it is in the option of the officer or engineer, whichever department the men may be going to, to employ them or not.
342. In what instances are these tickets used if it is not necessary that the men should obtain one before they can get employment? It is necessary that they should have a ticket.
343. I thought you said just now that there were instances in which men were employed without the ticket? I believe there are.
344. But you say that the ticket does not guarantee employment? No; because the men I send may not suit the officers or engineers.
345. Then, what is the good of the ticket? Well, you must know as well as I do, that when officers or engineers engage men they like to see more than one.

- Mr. W. Currie.
13 Feb., 1894.
346. And you are quite sure that there are no tickets distinguishing firemen from sailors? Certainly not.
347. I suppose you are of opinion that the engineers or officers of a ship are better able to judge of the capabilities of firemen and seamen than you are? I cannot say; that is a matter of opinion.
348. But I am asking you your own opinion? I repeat that what you say is a matter of opinion.
349. But I am now asking you quite a distinct question. I want to know your own opinion? I will not go any further than I have gone in my answer.
350. You believe that you are quite as competent to judge of the men's capabilities as are the officers or engineers? I may be.
351. But you are not quite sure about it? I repeat that it may be so.
352. You are not quite sure on the point? I have already given you my answer.
353. I suppose you are aware that if you do not answer questions the Committee can compel you to do so, that is any question that is lawful? But I have already answered your question.
354. You are in just the same position here as you would be in a Court of Law, and you must give direct answers to questions? I have given a direct answer.
355. Are you not giving very evasive answers? I have given direct answers.
356. Are the officers or engineers obliged to take the men upon your recommendation? Not necessarily.
357. Are all the men required by the Steamship-owners' Association engaged at your office? No.
358. Under what circumstances are the men engaged by the steamship-owners? I do not know what you mean by the circumstances.
359. Can you not give us an illustration? Well, a wharf labourer, if he can do the work, is engaged as a wharf labourer.
360. Is that the only qualification required? Yes; so long as he can do his work, whatever it may be, he may be engaged.
361. Who pays you? The Steamship-owners' Association.
362. What is your remuneration? I decline to answer that question.
363. Perhaps you have no remuneration? I am remunerated.
364. By the Steamship-owners' Association? Yes.
365. And you decline to tell us the amount? Certainly.
366. Have you never detained any money that has been given you to be paid to the men? No.
367. You are sure of that? Certain.
368. *Mr. G. D. Clark.*] Do you charge a fee to the men to whom you give tickets? Certainly not. I have never done such a thing since I have been at the bureau.
369. You have never taken a fee from anyone? No.
370. *Chairman.*] Have you never paid any men at the bureau through the Steamship-owners' Association when wages have been due? So far as I am concerned I can say that no men have been paid at our office.
371. But as far as others are concerned? I cannot say as to that; that has nothing to do with your question.
372. You decline to say whether anyone else in the office has paid the men? I have given information as far as all that is concerned to the Select Committee on the Government Labour Bureau, and I decline to say anything further.
373. *Mr. G. D. Clark.*] What is the nature of the institution which you manage? It is an institution which was started by the steamship-owners themselves.
374. This is an important Committee appointed by Parliament to inquire into the operation of our shipping laws, and the terms and conditions under which men are employed. We are not here to trifle with witnesses, and we do not expect witnesses to trifle with us? I should be sorry to do so.
375. The object of our inquiry is to bring about material changes in the law, and we expect that witnesses will treat us with the respect due to us? I shall be glad to do so.
376. I again ask what is the nature of the institution of which you are the manager? That is rather a hard question for me to answer. If you want an answer to it I should advise you to ask the question of the chairman or secretary of the Association. My duty is merely to obey the instructions which I receive from the chairman or secretary of the Association.
377. The institution is voluntarily created by the ship-owners of this port, is it not? Yes, for their own benefit, I suppose.
378. Can you tell us the objects of the institution? As I said before, you had better ask the secretary or the chairman of the Association. It is beyond me to give you the information you require. It is beyond my duty.
379. Your duty is to give us any information that will help us in this inquiry? Certainly.
380. Surely occupying the position you do you must be able to answer with some approximation to the truth this simple question;—what are the objects of the institution? I am speaking the truth when I say that you will get more information out of the secretary or the chairman of the Association than you will get out of me on that point.
381. Do you not think that it is rather for us to judge whether you are in a position to give us any information or not? That I cannot say.
382. Do you yourself know the objects of the institution? I know what my duties are. I receive my instructions from the Association.
383. Will you state what your duties are? I decline to state what they are.
384. Have you any duties? Certainly, or I should not be in my present position.
385. Are your instructions given you in writing, or is there a general understanding between you and the chairman and the secretary? I get my instructions in writing.
386. I suppose that one of your duties is to give tickets to the men to ship on their making application for the same? To ship on the approval of the officers or engineers.
387. So that you do not object, after all, to tell us what one part of your duties is? That is immaterial. There will be no objection to my telling you that.
388. I suppose the expense of keeping up the institution is met by the ship-owners? Certainly.
389. And that the employees in the institution are there at a stated salary? Certainly.
390. Have you any means of testing whether a man to whom you give a ticket is qualified for the position he is seeking on board a vessel? I do not ask questions to ascertain that. It is a matter which does not concern me so long as the officers or engineers are satisfied as to the man's competency.

391. Can you tell us approximately how many tickets you would supply on the average, say, every month? I could not say off-hand.

392. Could you not give a rough guess? No; it depends upon the number of men who have been discharged, and the number of men who are re-engaged.

393. Do you think it would be 100 a month? I could not say from memory.

394. Of course the Shipping Master can refuse to sign any man to whom you have given a ticket? The ticket a man gets from me has nothing whatever to do with the Shipping Master. I presume that if the men prove to the satisfaction of the Shipping Master that they are capable men, he signs them on.

395. The Shipping Master can decline to sign any man on board a vessel to whom you have given a ticket? The Shipping Master never sees the tickets I give the men.

396. But take the case of any man to whom you have given a ticket, and who is proved to be an unqualified seaman, the Shipping Master can refuse to sign him on? I suppose he can; but I never heard of an instance of that sort.

397. Have you at any time refused to give tickets to men making application for them? Sometimes men come to me and apply for tickets when there are no vacancies.

398. Do you, as a rule, give any reasons when you refuse to grant a ticket? I give no reasons at all.

399. Is it a fact that men have been refused tickets by you on the ground that they had been prominent members of the Seamen's Union? There is nothing at all in that. When I have refused to give men tickets, I have given no reason whatever. We recognise neither Union nor non-Union men.

400. When a ticket is applied for do you ever ask the question whether the applicant belongs to the Union or not? No.

401. You have never done so? No; I have no reasons for asking them that question.

402. I suppose you keep a record of all the men to whom you supply tickets? Yes.

403. Would there be any objection, as far as you yourself are concerned, to supplying the Committee with, or producing the books? I could not do so. I have no power to do so.

404. *Chairman.*] Who would have the power to do so if you would not? The chairman of the Association.

405. Who is he? Mr. Alt; he has just been appointed chairman.

406. *Mr. G. D. Clark.*] But you can produce a copy of the ticket you supply? I can produce a copy of the ticket with the sanction of the Association, but not otherwise. If the Association permit me to send you a copy of the ticket, I will do so with pleasure.

407. You say that you have had no correspondence with the Shipping Master on these matters? Not so far as I can remember.

408. Do you remember sending a man to the Shipping Master with a letter? I may have done so, but I cannot remember it.

409. You do not remember it? I may have done so.

410. Is your memory very good? It is pretty fair as a rule, but in regard to what you now say about my sending a letter to the Shipping Master, I cannot recollect it.

411. There has been no correspondence between the Shipping Master and yourself; that is what I want to get at; I mean as regards the shipping of seamen? I do not remember it. I do not remember getting a note from Captain Edie in my life.

412. *Chairman.*] But did you not send him a letter? I may have done so, but I cannot recollect it at this moment.

413. *Mr. G. D. Clark.*] You are aware that the Union seamen of the port are under the impression, whether well founded or not, that your institution is established for the purpose of injuring or damaging the cause of Unionism? I cannot see that that is so in any way.

414. You know that such an impression exists among the seamen; I suppose you come in contact with a good number of them? No such impression exists that I am aware of. The men all seem pretty well satisfied. I have heard of no objections from them.

415. Are the majority of the men to whom you give tickets seamen, or are they men who desire to work on the wharves? I give tickets to seamen, firemen, and others; but a number of seamen are working on the wharves at the present time, I believe.

416. *Chairman.*] Do you know of any institution similar to your one existing in the other colonies? I understand that there is one in Melbourne.

417. Is there not one in London? I believe there is one in the United Kingdom.

418. Do you know who is at the head of the institution in Melbourne? A person named Dyson, I believe.

419. Has it come to your knowledge that he was prosecuted some time ago? I saw it in the newspapers.

420. Have any proceedings been taken in connection with your own institution? Yes, about eighteen months ago.

421. By whom? By a person named McLean, one of the trustees of the Seamen's Union.

422. What verdict was recorded? The case was dismissed.

423. *Mr. G. D. Clark.*] Do you at any time attempt to fix the rate of wages? I have nothing to do with that.

424. All that you have to do is to give the men tickets to the engineers or officers on board the ships? That is a part of my duty.

425. And it is entirely optional with the officers or engineers as to whether they employ the men or not? Yes.

426. And also to the wages they will give? I have nothing whatever to do with the wages.

427. *Chairman.*] Did you ever procure any men from any boarding-house in Sydney? No.

428. Has any other person in connection with your office procured men from boarding-houses? Not that I am aware of.

429. What other employees are there in your office besides yourself? I have only one clerk—Mr. Chalmers.

430. I suppose he has not a very extensive knowledge of maritime affairs or of the working of your office? He has only been in the office during the last five months.

431. You are sure that the practice of procuring men from boarding-houses and taking them down from the ships has not been resorted to since you have been the manager of the institution? Not to my knowledge. I have never heard of such a thing being done.

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W. Currie.
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432. Would anyone else in your office besides yourself have any knowledge of the thing if it had been done? Not so far as I know.
433. *Mr. G. D. Clark.*] Could it be done without your knowledge? I do not think so. Such a thing as you refer to may have been done independently of me and outside of the office entirely.
434. *Chairman.*] Is it not a fact that you keep a constant supply of men at your institution ready to ship whenever they may be required, and that you provide them with a place in which they can stop? No.
435. Is there not a large room at the back of your institution where the men congregate? We have a place there, but it has not been used for some time. We never allow the men inside the office at all.
436. You have shifted your office recently, have you not? That is some time ago.
437. Where do the men congregate? Generally in the lane; they come at certain periods of the day.
438. How do you communicate to the men the fact that some of them are wanted? They know at what time to come up and they get their answer then.
439. You have a specified time when the men attend? Certainly.
440. And supposing there is no employment for them? Then we tell them that it is no use their waiting.
441. Supposing a vessel were to come in at night and that you did not know beforehand of her probable arrival, how do you supply men for her;—have you no address of any individual upon whom you can call to supply the men if they are required? Do you mean for wharf work?
442. I am referring to the shipping of a crew;—suppose the vessel wants a crew? We have certain officers here, and if the order does not come from the captain we cannot help it.
443. But suppose you have left your office when the message arrives, how do you procure the men? No case has ever occurred, to my knowledge, in which a ship has come in at night and has had to go away again before the office opened in the morning.
444. Neither you, nor any one in your employ, has helped to put men on board a ship at night time? I have gone down with the men myself at night time. I did so during the late strike.
445. The men with whom you went down were the crew? Not the full crew.
446. But such men as were required? Yes.
447. You have already said that you have nothing to do with permits? No.
448. It does not come within your province to ascertain whether the men have permits or not? Of course the men have to show a permit or discharge before they are shipped.
449. Still, you have no opportunities of judging of the capabilities of the men, and you accept on good faith the discharges or permits they have obtained? I have already explained that the capabilities of the men is a matter for the officers or engineers to determine.
450. But suppose some of the men have obtained permits from other men? I am not in a position to say anything as to that.
451. Are there any instances in which officers recommend men to you without their having a permit? I do not think they would do such a thing.
452. Suppose an officer knows that a man is a capable man and recommends him to you, if the man has no permit do you refuse to give him a ticket, or do you try to get him a permit from the Shipping Office? He has to get a permit before he gets a ticket from me.
453. Supposing I were sent to you by the officer of a steamer to get a ticket, you would tell me at once that I could not get a ticket unless I had a permit; if I then asked you how I could obtain a permit, I suppose you would tell me that the best thing I could do would be to apply to the Shipping Master;—under such circumstances as those, are there any cases in which you would give men recommendations to the Shipping Master for permits? I do not think so.
454. You would not take such a course upon the recommendation of an officer? No; certainly not.
455. Suppose a case came under your notice in which a man's permit represented that he was competent to do certain work, and in which the Shipping Master had written upon the face of the permit words to the effect that he was not a competent seaman, what would you do in a case of that kind;—would you grant the man a ticket? If the engineer or officer were satisfied with the man he would get a ticket.
456. Supposing, in the case of emergency, a fireman were required, and that his permit were marked "trimmer," would you give him a ticket for the officer of the ship to ship as fireman? If the officer of the ship was satisfied that the man was capable of discharging the duties required of him.
457. Supposing that the word "fireman" were on a permit, and that the Shipping Master had altered the word to "trimmer"? The man's capabilities would be a question for the officers of the ship to decide.
458. *Mr. Davis.*] Did you at the commencement of the last strike ever stand at the bottom of a ship's gangway handing out to the men discharges? Never.
459. Did not the Shipping Master refuse to give permits unless the men were competent? That I do not know anything at all about.
460. Is it not a fact that at the commencement of the late strike the ship-owners were placed in a dilemma from the scarcity of competent men;—is it not a fact that a number of men could not get permits because they were not competent, and that discharges were found for men who were taken from the various boarding-houses in the city? That is a falsehood, so far as the giving of the men discharges is concerned.
461. You have never provided a man with a discharge? Never.
462. Do you remember a case where the captain of one of the Australian Union Steam Navigation steamers sent you a particular man to get a ticket to ship as a boatswain, and where you refused him? If I remember the case to which you refer, I did not refuse the man, I gave him his ticket.
463. You gave one man a ticket, but you refused two other men the captain sent you, and he got so tired of waiting that he took a man up to Brisbane without a ticket? I do not think so.

THURSDAY, 15 FEBRUARY, 1894.

Present:—

MR. G. D. CLARK, MR. DAVIS,	|	MR. EDDEN, MR. J. D. FITZGERALD,
MR. WISE.		

A. J. KELLY, ESQ., IN THE CHAIR.

Mr. William Currie recalled and further examined:—

464. *Chairman.*] You promised us at the last meeting that you would furnish us with a copy of the ticket which you issue to men seeking employment? I think I said that I should have to obtain the sanction of the Association before producing it.

465. Have you taken any steps to obtain that sanction? I spoke to the Secretary, Mr. Cockburn, and he said he could not give me the necessary authority, and that the ticket could not be produced unless with the sanction of the Association.

466. Do I understand that the ticket could not be produced without a meeting of the Board? It could not.

467. *Mr. J. D. FitzGerald.*] I suppose you have charge of the tickets? Yes.

468. Surely it would do no harm for you to produce a copy of one of them? I cannot do so without the sanction of the Association.

469. *Chairman.*] You will bring the matter under the notice of the Board when they next meet? Certainly.

470. *Mr. Wise.*] What do the men come to you for? For employment.

471. Who brings them? They come themselves.

472. Cannot they get employment without coming to you? We have a certain routine, and the men seeking employment have to come to the office.

473. Do you yourself decide whether the men are to be employed or not? No.

474. Then what does their passing through the office mean? Well, it is a sort of check—we know then who is going on board the ships.

475. Do you keep a record of every man you employ? Certainly.

476. I believe you told the Chairman at the last meeting that you received your instructions from the Association in writing. Have you those instructions with you? No; sometimes I get verbal instructions from the Association, and sometimes they are in writing.

477. *Mr. J. D. FitzGerald.*] You know the 33rd section of the Seamen's Laws Consolidation Act? Yes.

478. It is under that section that you send men to the Shipping Master? I do not send men to the Shipping Master. The men seeking employment with us come to me for a ticket, but before I give them a ticket, they must show a permit or discharge. It would be of no use for them to go down to the ship without one or the other.

479. *Mr. Wise.*] In the case of men who come to you with a permit or discharge, what do you do? If there are any vacancies at all, and if I think the men are suitable men, I send them down to the ships to see whether they will suit.

480. Are the tickets marked for particular ships? They are addressed to certain ships.

481. Do the captains keep you informed of what vacancies they have? Yes.

482. And upon that you engage men for them? I simply send the men down to the ships to see whether they will suit the officers or engineers as the case may be.

483. *Mr. Davis.*] If the men go down to the ships without going through you, the officers of the ships do not engage them? That is not invariably the case.

484. Is it not the case with all steamers belonging to the Association? No.

485. Is it not generally understood among the officers and engineers on all the steamers belonging to the Association, that the engaging of seamen by them must rest entirely with you in the first instance, that is to say, they must first get a ticket through you? Yes.

486. So that no matter how much a captain might want a man, unless you first saw your way to give the man a ticket he could not get employment? That is not exactly so.

487. Do you mean to say then that the officers or engineers can take a man in spite of your refusal to give him a ticket? They may do so; of course they do so at their own risk.

488. At the risk of being discharged? I do not say that; but if they engage the men without tickets from me, I take no responsibility at all in the matter.

489. Is it at all likely that the officers or engineers would take the risk, as you call it, for the sake of giving a man employment? I think it has been done.

490. But it is not generally done? No.

491. Generally speaking, the officers and engineers would not engage even men who had been with them time after time without their first getting a ticket from you? It is unusual to engage a man without a ticket; but it has been done.

492. Is there not a general instruction from the Associated Steamship-owners that all the men employed on their steamers and wharfs must first have a ticket from your office? That is supposed to be the general instruction; but it is not carried out.

493. *Mr. Wise.*] If the object of this routine is not to distinguish Union from non-Union men, can you say what the object of it is. Can you explain where the necessity for it exists? I have already said that we do not make any distinction between Union and non-Union men.

494. But can you suggest any other reason besides that which I advance? I cannot say what the reason is.

495. Can you suggest any other reason for insisting that the men engaged should first obtain a ticket from you, other than the desire to keep out certain men whom you do not like? I do not think that is the reason. One advantage about the thing is that it enables us to keep a record of the men; we know who the men are, and what ships they have come from.

496. Would not their discharges show that? Yes.

497. And the information could easily be obtained from the Shipping Office as to any particular men, could it not? That might be done, but the Association think differently; they like to have a record of the men kept.

498. What is the good of their going to the expense of maintaining an office to keep a record when the same information can be obtained at any time from the Shipping Office? I cannot say.

499. You cannot give us any information at all upon that point? No.

500.

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500. It seems to me that unless the object is to keep some sort of control over the men employed by the Association, there is no reason why this record should exist; but you say that that is not the object? Well, if you mean, do we ask whether the men are unionists or non-unionists, I can safely say that that is not done.

501. *Mr. Edden.*] You said just now that if you thought a man likely to prove suitable, you would give him a ticket? Yes.

502. How do you form an opinion as to his suitability? If the man appears to me to be at all suitable I send him down to the officers or engineers.

503. What qualifications do you insist upon before you decide that the man is a suitable man? Well, I should want to see his discharge, for instance.

504. *Mr. Davis.*] Is it not a fact that you have refused to give tickets to a number of men who applied to you for employment—that is, men who came out of ships during the previous strike, and who have since applied to you;—have you not refused these men tickets? I should certainly refuse them if there were no vacancies.

505. *Mr. Wise.*] But have you refused tickets to any men when vacancies have existed? Yes, if other men have been waiting longer than the applicants.

506. Have you put the names of the men whom you have so refused upon the roll? Yes.

507. And have these men ultimately obtained employment through you? Some of them have.

508. Then your evidence is that you have never refused a man a ticket, apart from the fact that there has been no vacancy? Yes; and in cases where men have been there before the applicants waiting for situations.

509. Those are the only two grounds upon which you have refused tickets? As far as I can remember, those are the only reasons; I do not remember giving any other reasons.

510. *Mr. Davis.*] Have you not expressed other reasons to the men themselves? I do not think so.

511. Have you not addressed some of the applicants in these terms—"You left such-and-such a ship, why did you leave that ship?" referring to the men who left ships during the late strike? I do not remember saying that.

512. Have you ever said to any of the applicants, "I do not want you"? I may have said something of the kind in telling them that there were no vacancies. When I have told them that there have been no vacancies that has been the case.

513. *Mr. Wise.*] On Tuesday the Chairman asked you a question about three men who were discharged from the "Arawatta"—Olsen, Marshall, and Fernman; you then said you did not remember the case;—have you since refreshed your memory about that matter? I have endeavoured to do so; but I cannot remember the case.

514. *Chairman.*] Would not the records of your institution give the names of the men? No; the books would not show that.

515. *Mr. Davis.*] Would not the ships' articles give them? No, the men would not be signed on the articles. The only thing likely to give their names would be the pay-sheet, showing the days' work they did.

516. *Chairman.*] These men were not paid at your institution? No.

517. *Mr. Wise.*] At the last sitting you were asked if you knew of any instances which have occurred since the late difficulty, where men had shipped without consulting you. You declined to answer that question. Will you give your reasons for declining to answer the question? I had already said beforehand, in reply to another question, that there were a number of instances.

518. But you declined to answer the Chairman's subsequent question, when he asked you to name the instances? What I meant by declining to answer the question was, that I did not remember the names of the individual cases. I did not intend to imply that I remembered the cases, but that I refused to mention them.

519. *Chairman.*] You said the other day that you went down on board a ship with some men at night time during the late strike. Were those men signed on in the day time at the Shipping Office, or did you pick them up haphazard, and take them on board without their having signed on? I had nothing to do with their signing on. I simply took them on board the ship and left them there.

520. You do not know whether the men signed on or not? That is entirely the business of the captain.

521. Do you know whether the captain has power to sign men on in an emergency of that sort? I am not sure, but I believe there is some power of the kind in cases where ships are registered in New South Wales.

522. But is it not also a fact that the seamen's signatures must be witnessed by some representative of the Shipping Office? That I cannot say.

523. Have you not yourself a knowledge of seafaring matters? Yes.

524. Have you ever signed articles on board these ships? Not here.

525. Never upon any local steamer? No.

526. You have never been on board of them as an employee? No. As far as I know, when the men sign on, their signatures have to be witnessed.

527. *Mr. Wise.*] To what ship did you take the men on the night to which you refer? As far as I know, I took them on board the "Ouraka."

528. *Mr. Davis.*] Is she registered in New South Wales? I do not think so.

529. Then, as a matter of fact, if the men went to sea in her after signing on board, they were simply breaking the law? But they might have signed on somewhere else, probably at the Shipping Office.

530. Before you put them on board? That I could not say.

531. Did the steamer get away on the night you took them on board? No, on the following day.

532. *Chairman.*] You did not supply these men from the Labour Bureau by ticket? I cannot remember, but I expect they had tickets directed to the captain.

533. Was not the ticket a guarantee for their employment? No.

534. Have you any amendment of the law to suggest which, in your view, would make the lot of the seamen or firemen a little more comfortable than it is at the present time? I should have to think over the matter some little time before I answered that question. I might, after thinking the matter over, be able to make some recommendation.

535. If any recommendation occurs to you, will you be so good as to forward it to the Committee? If any recommendation occurs to me, which I think is likely to assist you at all in your labours, I shall be very happy to forward it to you.

536. *Mr. Wise.*] Is the Steamship-owners' Association registered? I believe so.

THURSDAY,

THURSDAY, 22 FEBRUARY, 1894.

Present:—

Mr. EDDEN. | Mr. DAVIS.
Mr. J. D. FITZGERALD.

A. J. KELLY, Esq., IN THE CHAIR.

Captain F. Hixson, called in, sworn, and examined:—

537. *Chairman.*] You are President of the Marine Board? Yes.

538. I suppose that in your capacity as President of the Marine Board you have had an opportunity to observe the operation of the law affecting seamen? I have.

539. Are you familiar with any instances in which the captain and owners of a vessel have evaded the Act? There have been many instances in which the Board have had to interfere and exercise their authority.

540. To what instances do you refer? The cases have been various. Sometimes we have had to deal with a case of overloading and at other times with deck cargo. We frequently prevent ships from taking more cargo on board and in many instances we have made them take off a part of what has been put in.

541. Is it a customary thing for any vessel leaving the port of Newcastle or any of the southern ports of the Colony to put to sea with their hatches off? We have heard of cases of the sort. The practice used to prevail to a considerable extent. The fact is that the coal is pitched into some of the vessels without being trimmed, and it often appeared above the hatches, but the Marine Board took such steps as they could in the exercise of their authority to put the practice down. Among other things they communicated with the insurance companies, and I believe now it is recognised that those companies will not allow colliers to travel without their hatches on. That is to say, if any action occurred through the hatches being off the insurance company would refuse to pay the policy.

542. Did an instance come under your notice recently in which a steam collier entered this port with her hatches off and loaded almost to the deck? I do not remember the case of a steamer lately. A case occurred a few days ago in connection with a sailing-ship. It was reported that she had come in with her mark immersed and we are investigating the case now.

543. What precautions do you take to see that vessels do not come into port overloaded. Are any inspectors told off for that particular duty? Oh, yes; two inspectors perform that duty.

544. Is it a portion of their duty to go outside the heads? No; they do not go outside the heads.

545. Then you have no knowledge of any ships being at sea with their hatches off, apart from what you see when they actually come into port. You do not send anyone out to sea? We do not send anyone out to sea. We get reports from Wollongong and Newcastle occasionally, otherwise we rely on our inspectors. If any officer in the Department observes a vessel overloaded the circumstance is reported and investigated.

546. An instance recently came under my notice, and under the notice of other honorable members (Sir George Dibbs among the number), in which a vessel came into the port of Sydney with her hatches off. I drew the attention of two or three fellow members to the circumstance, and Sir George Dibbs thought it rather a strange thing for a vessel to come into port in that condition; he thought it very dangerous? It is dangerous no doubt, and the remarkable thing is, that the master and persons whose lives are risked by such a proceeding are not more active in putting the practice down; but they appear to be very careless about it.

547. Is there no section of the Act which empowers you to send an inspector out to sea? We could send out an inspector if we thought it necessary to do so, but some expense would be incurred in so doing.

548. Do you not think it would be a wise expenditure by way of a precaution? Perhaps it would be; but as you are aware there are a great many colliers loading at places along the coast, between Newcastle on the one hand, and Kiama on the other. These vessels all make short voyages, and the difficulties of loading are sometimes so great that the colliers are glad to get away from the port immediately they can. Although their coal may sometimes be above their hatches it may be that they are not overloaded.

549. Take the port of Newcastle, for instance; have you no inspector there whose duty it is to go on board a vessel and see that her hatches are properly put on before she leaves the port? We do not go into the detail of putting the hatches on. But we see that it is possible that the hatches can be put on. I do not think vessels are loaded in the manner you describe at Newcastle, because we have an officer there who is specially commissioned to look after that sort of thing. I do not know that he waits to see that the hatches are sealed and battened down, but he sees that all is clear and ready for the work to be done. We do not want to be irksome and detain vessels, and when we see that everything is ready we let them put to sea.

550. Under the 23rd section of the Navigation Act, of 1871, the Marine Board is empowered to inspect documents and muster crews—is that ever done? Not as a rule.

551. Has it ever been done during your occupancy of the office of President of the Marine Board? Not the mustering of crews.

552. Does it not amount to an evasion of the Act that the thing is not done? I do not think the section is mandatory. I think it is permissive only.

553. I will read the section:—

The Marine Board may in cases where there is reason to suspect that the provisions of this Act are not complied with exercise the following powers that is to say—It shall be lawful for the said Board to require the owner master or any of the seamen of any British ship being within any port or place in the jurisdiction to produce any official log-books or other documents relating to such seamen or any member thereof in their respective possession or control and to require any such master to produce a list of all persons on board his ship and take copies of such official log-books or documents or of any part thereof to muster the crew of any such ship to summon the master to appear and give any explanation concerning such ship or her crew or the said official log-books or documents.

I understand that that section is applicable to all vessels which come into our ports? Quite so.

554. But in no instance have its provisions been complied with? I did not say that. What I said was that we never mustered the crew. It is quite true that the Act empowers us to do so. Short of mustering the crews we have done everything under that section which has been considered necessary to be done.

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555. I suppose the inspectors are appointed by yourself and the Board? By the Board.
556. To what examination are the inspectors subject? I do not know that they have ever been subject to a personal examination. The men have generally been selected and appointed from their reputations or well known qualifications.
557. Are they required, for instance, to have a technical knowledge of a ship's gear? Certainly.
558. Are they not supposed to be men of a mechanical turn? We have inspectors and surveyors. Every one of the inspectors is an old master mariner.
559. I suppose there is no instance where you have had to discharge one of these inspectors for neglect of duty? No; they are generally considered to be very efficient men.
560. What qualifications are the surveyors supposed to possess? We have only one shipwrights' surveyor in Sydney. We have temporary surveyors at all the out-stations.
561. The shipwrights' surveyor has to superintend the whole of the work in Sydney? Yes.
562. He has no deputy? No.
563. What are his qualifications? He is a practical shipwright.
564. I see from the Act that it is his duty to board vessels and inspect them, with a view to reporting to the Marine Board? Yes.
565. Can you remember any case in which he has reported the hull of a vessel to be in an unsound condition; has a ship ever been detained for that reason? Such a report has been made several times. I cannot remember the particular instances just now. The shipwrights' surveyor has frequently made reports to the Board which have induced it to detain vessels in port.
566. Would you mind producing these reports? I shall have great pleasure in so doing. At the same time I may tell you that a great deal of the business of the Board is done without written reports.
567. I will ask you to produce those reports of the surveyor upon which vessels have been detained (say) within the last three years? I will produce them, but I repeat that a great deal of our work is done *viva voce*. It frequently happens that we have not time to obtain a report. A rumour reaches us that such and such a thing is taking place, and we send off any inspector who may be available. If the inspector finds the matter is serious he calls in the shipwrights' surveyor, and in that way the case comes to be investigated. An immense amount of the business done through the Department is *viva voce*. Of course we have the documents relating to the detention of certain ships.
568. When a report has been received by the Board with respect to a ship with (say) a bad hull, have you ever inflicted any penalty? We have frequently inflicted fines for overloading; unseaworthiness merges into a different arrangement. If a vessel is unseaworthy we detain her under the Act.
569. You do not work under the Merchant Shipping Act? Not under the Imperial Act; the local Act is our guide.
570. Certain rumours have been circulated with reference to the steamer "Warrimoo." You may have seen statements in the Press as to her boilers being in a very unsound condition? Yes.
571. Did your surveyor go on board the steamer and inspect her boilers prior to her going to sea? He did.
572. And did he make a report to the Board? Yes.
573. Have you any idea of what he reported? It is a recent case, and I remember it quite well. This vessel, I may tell you, is somewhat peculiar, inasmuch, as she employs what is called forced draft. This forced draft is wonderfully powerful, and it was so powerful in her case, that the boilers being salted a little were bulged and put out of shape. The matter was thoroughly investigated by Mr. Cruickshank, the senior engineer's surveyor, and the boilers on examination were found to be perfectly sound, although bulged. Screw-jacks were used, and the boilers were to a certain extent, put in their former condition. The boilers were then tested with pressure. They were pressed, I believe, up to 240 lb. Mr. Cruickshank was then satisfied with the condition of the boilers, except that he reduced the pressure which the vessel formerly carried—that is, 165 lb. down to 140 lb. He also recommended the disuse of the forced draft. I may mention that that will not be necessary for the pressure to which the boilers were reduced. When this had been done, Mr. Cruickshank was satisfied to let the vessel go away.
574. I suppose that in the opinion of the Board the boilers were quite safe? Yes, at the reduced pressure.
575. Are there any instances which have come under your notice where the owners of vessels have neglected to transmit their declaration to the Marine Board with respect to the condition of ships? In the press of business there are little delinquencies of this sort often occurring, but I do not remember any case where the owners have defied the Board.
576. No case of that sort has come under your notice? I do not remember any.
577. What are the times generally appointed by the Board for the surveying of vessels? The Board plays into the owners' hands as much as it possibly can. The Act says that survey shall be done at a certain time, but that would be found to be so very inconvenient, both with regard to the work of the Department, and the laying up of steamers that, as a rule, the Board consult the interests of ship-owners in this respect.
578. The Board generally endeavours to meet the convenience of the owners? That is so.
579. Thirty days is allowed for inspection I see;—suppose it did not suit the convenience of the owners to have a vessel surveyed within that time and that an accident occurred, when the vessel came back to port for inspection I suppose the whole responsibility would fall upon the shoulders of the owners? Yes; it is penal for them to allow their ships to go to sea if they are carrying passengers without exhibiting a passengers' certificate.
580. Do they in a case of that kind have to send to the Custom House to get a clearance? The owners generally have superintending engineers and ships' husbands, and as a rule these men make arrangements for laying up the vessel. When that has been done they communicate with the Board.
581. According to the 31st section of the Act, the Marine Board are to grant certificates and transmit lists to be put up at the Custom House. The question is whether, if the Marine Board is not satisfied that the ship is in a sound condition, and desires her inspection, it is in the power of the Board to stop the vessel from going to sea by not granting the certificate upon which the vessel will get her clearance from the Customs? It could be done by the Board refusing to give the certificate.
582. Have any cases of that kind occurred? Many, in the course of time.
583. Have there been any within the last three years? I do not remember; but I will have the matter looked

looked up. You must understand that vessels are not prohibited from going to sea if they do not carry a Marine Board certificate; they are only prohibited from carrying passengers.

584. But surely you have jurisdiction over vessels which do not carry passengers? Certainly.

585. What inspection are vessels that do not carry passengers subjected to? To the ordinary inspection of inspectors.

586. That would be twice a year? It is done constantly. I must tell you that under the late Act, and it is a transcript of the English Act, responsibility for sending an unseaworthy ship to sea rests with the ship-owners. It is a misdemeanour both on the part of a ship-owner or a master. They are liable to a penalty of £1,000 for sending or taking an unseaworthy ship to sea. There is also a power under the Marine Board Amending Act to detain a ship in the manner I have already indicated.

587. It would be impossible for a ship to go to sea without first obtaining a certificate from the Marine Board? If she were carrying passengers.

588. But in cases where passengers are not carried? We do not certify any vessels except those which carry passengers.

589. Have you no jurisdiction over other vessels? We have jurisdiction, but we do not issue certificates. As I said just now, the responsibility of sending an unseaworthy ship to sea rests with the owners. If there is a complaint on the part of a crew, we can detain the ship.

590. Are all steam-vessels leaving this port obliged to carry two safety valves? Yes.

591. Does the Marine Board see that is done? Yes.

592. That is a part of the duties of Mr. Cruickshank? That is so.

593. No steamer leaves the port without his inspecting her? No; or knowing that she has two safety valves.

594. Does he invariably inspect the steamer to ascertain that she has two safety valves, before she leaves the port? He does not exercise the same supervision over ships which do not carry passengers as over those that do.

595. Suppose an accident were to happen on board a steamer, is it not the duty of the captain or engineer, as the case may be, to report the accident and enter it upon the official log? Yes.

596. I suppose no case has come under your notice where an accident has taken place that has not been reported? Not a really serious accident. Minor accidents may take place which are not reported.

597. I see that by section 52 of the Navigation Act the owner or charterer has to enter into a bond of £500 before a ship is cleared out; I suppose that only relates to foreign-owned steam-ships? Yes.

598. But your inspectors have power to inspect those ships? If they come under that section.

599. And also to muster the crews? Yes.

600. And if it is found that the ship's gear is bad it is the inspector's duty to report the fact? Yes.

601. The question of pilotage-exemption certificates has been agitating the public mind a good deal lately; we know that certain captains are allowed exemption, and that has been detrimental to the interests of the pilots of this community;—do you not think that the law should be so amended as to do away with these exemptions? I think it would be very objectionable to do away with the system of exemptions. The pilots of whom you speak are all Government employees, and they cannot therefore be affected to any considerable extent under the exemption system. The Marine Board's policy has always been to make the port as free and accessible as possible to trade and commerce.

602. Would you apply the system to foreign-going ships? I am dead against foreign-owned ships having exemption certificates.

603. But there are cases where the captains of foreign-going ships have exemptions? Yes; and there are cases in which men sailing under a foreign flag have obtained exemption certificates.

604. In those cases what would you do? I would deter them from obtaining exemption. I would limit the exemption to British captains.

605. Take the case of a British ship (say) from London, which may be a constant trader here, you would give the captain an exemption? Certainly.

606. But in the case of a ship trading here from (say) Germany, you would debar the master from obtaining an exemption? If he flew the German flag I would.

607. In other words would you give the exemption only to those vessels flying the English flag? Yes.

608. Take the case of a ship having to be shifted from Circular Quay round to Lamb's Wharf, would it be necessary in that case to engage a pilot? It is optional with a master of a vessel whether he employs a harbour pilot or not, supposing he is not himself exempted. I believe there are some few cases where the captains have employed persons other than the regular Government pilots for doing this work.

609. But the law does not permit any but licensed pilots to do such work? Not properly speaking.

610. You do not mean to say that unlicensed men have done the work? Not unlicensed men, but men who have not been the captains of the ships have done it. That is, men holding exemptions from the Marine Board; but they are not masters of the vessels they are moving.

611. I suppose there are a good many persons in Sydney at the present time holding these exemptions? A good many.

612. And who undertake this work? I do not think there are many who undertake this work. One or two do it. The Marine Board have lately issued a regulation to stop the practice.

613. I suppose that it is the intention of the Marine Board to see that proper effect is given to this regulation? Yes; the Board believe that the spirit of the Act is, that no man should be allowed the privilege of an exemption unless he be the master of the ship.

614. To what examination do you subject persons before granting them an exemption? They have to go before the Examiner in Pilotage, and he puts them thoroughly through the pilotage of the port.

615. Does he give the certificate of exemption, or is it given by the Marine Board? It is given by the Board upon his recommendation.

616. I suppose the men who get the exemptions pay the usual fee? They have to pay for the exemption certificate. Once they are in possession of the certificate they are subject to no further tax.

617. But do they not pay a yearly fee? There is no yearly fee. Once they obtain possession of the exemption certificate they hold possession for ever without further fee.

618. *Mr. J. D. FitzGerald.*] Do you know of any other port in the world where such an exemption is allowed? The same thing prevails in many parts of the world. It is a practice in all these Colonies, and to a considerable extent now in England.

619. The exemption from pilotage? Yes.

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620. Is it not a fact that many of the captains of the larger vessels entering Port Jackson, who are holders of exemption certificates, nevertheless engage pilots? Quite so.
621. Is it true, as has been often alleged, that men who hold exemption certificates, are engaged as chief officers, or as officers of vessels entering Port Jackson, by captains who have not the exemption certificates, for the purpose of escaping the pilotage fee? There are a few instances of the sort; but the regulation to which I have already referred as having been issued by the Board will, it is believed, put a stop to that practice.
622. Do you think the regulation has so far been successful in that direction? To a great extent.
623. *Chairman.*] I suppose no master, mate, or engineer is allowed to go on board any of the vessels under your jurisdiction, unless he has first passed the usual examination? No; they must pass that.
624. Do they submit themselves to the Marine Board for the examination? Not directly. The Marine Board have an examiner, and there is a distinct form for all these examinations. These forms are kept in the office, but the Marine Board do not personally take part in the examination. They issue certificates upon the report of the examiner.
625. I suppose the examinations are of several kinds? Yes.
626. One for navigation and the other for seamanship? Yes.
627. There is a third class of examination I believe, relating to harbour and river steamers? Yes.
628. Applicants are not subjected to such a rigid examination in connection with harbour and river steamers? Not to so rigid an examination as in other cases;—and for those going outside there are two classes of examinations, one for the coasting trade and the other for the foreign trade. The examinations are different in each case.
629. With regard to the boats on sea-going ships how do you ascertain whether the boats in the davits or on the chocks are in a fit condition to be used at any time they may be needed? They are thoroughly examined, each time a vessel renews her certificate. Boats are often condemned and new ones placed in a ship at the instance of an inspector.
630. Does your inspector ever have the boats lowered into the water? Often.
631. In how many instances has that been done? I could not say, but I know that Mr. M'Ritchie is a painstaking officer. He exercises great control over vessels' boats.
632. In the case of the "Kanahooka" recently—were not her boats on being lowered found to be in a very bad condition;—the boats, you will remember, were lowered at the time of an accident, and I should like you to account for the circumstance that the bad condition of the boats had escaped notice? It was probably the case of a vessel which did not carry a passengers' certificate. The inspector does not exercise the same supervision in those cases as in others.
633. Would it not be wise in your opinion if these colliers were subject to the same examination as other steamers with a view to the preservation of life? Yes; I believe it would be a very good thing.
634. Did you instruct any of your inspectors to furnish a report in the case of the "Kanahooka"? The case of the "Kanahooka" occurred in Queensland waters, and will be dealt with by Queensland authorities, I presume.
635. I suppose you are satisfied that the regulations in regard to inspection are rigidly carried out? I think they are, fairly well.
636. You would not be sure that they are carried out in their entirety? I do not like to say too much, but I think the inspection is reasonably well carried out. We occasionally have casualties here, but we have had very few. I am proud to say that only four lives were lost on the coast last year.
637. I observe from the Act that you have considerable power in the matter of the load-line. Do you know of any cases where the load-line has been shifted? Yes. We are in communication with reference to a case at the present time. The case of the "Governor Bowen," I think. In several cases after the mark has been agreed to by the Marine Board, the owners or captain have shifted it, and you would think that they would be the last persons to do anything of the kind.
638. I suppose if any case of the kind came under your notice, you would enforce the penalties attaching to such an offence? We should deal with the case on its merits. I cannot say exactly what the Board would do. All these matters come before the Board, and they are very firm in administering the Act.
639. Do you not think it would be well to adopt the practice which has been adopted in the mother country of cutting the load-line into the ship's side, so that it could not be shifted? I think that would be a good plan. Often in the case of the repainting of a ship, it is alleged that the load-line has been shifted by accident.
640. Do you not think it would be well to amend the Act in this direction? I think it might be a good thing to provide that the mark shall be cut in a substantial manner.
641. You would recommend such an amendment of the law? Yes.
642. I see there is a Schedule to the Act in reference to the number and dimensions of boats with which sea-going ships are to be provided—Schedule F? Yes.
643. Have there been any cases in which you have had to make the captain of a vessel remove one boat and substitute another? Yes. Many of these things are done without any correspondence whatever.
644. I suppose that if the captain is a careful man, he will see that such things are done? As a rule, we find that the owners and captains co-operate very fairly with the Board in matters of this sort.

TUESDAY, 27 FEBRUARY, 1894.

Present:—

MR. G. D. CLARK. | MR. DAVIS.
MR. EDDEN.

A. J. KELLY, ESQ., IN THE CHAIR.

Captain F. Hixson, recalled and further examined:—

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645. *Chairman.*] You promised at our last meeting to produce certain returns? Yes. I produce a return showing the number of vessels detained by the Marine Board during the last three years. [*Vide Appendix B1.*] I also produce a letter from Mr. Cruickshank, the engineer surveyor, relating to the steamers "Kembla" and "Lawrence" having been refused passengers certificates. [*Vide Appendix B2.*] I also

also produce a schedule which I think should be attached to any Bill amending our existing law. [Appendix B3.] It contains the latest regulations of the Board of Trade relating to life-saving appliances. It follows very completely the provisions of our Marine Board Act, and I think it should be attached to any new legislation likely to be brought forward.

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646. You would recommend that? Yes. It really provides for boat accommodation, and a life-belt for every person going to sea.
647. *Mr. Davis.* You are under the Treasury Department? Yes.
648. Has any Colonial Treasurer applied to you for any information with reference to the framing of a new shipping law? Yes; I have been in communication with the present Colonial Treasurer with reference to the framing of a new law.
649. You have made several recommendations to him? Yes.
650. With regard to deck cargo on steamers, you have stated that there are inspectors whose duty it is to see that no deck cargo, calculated to interfere with the navigation of a vessel is placed on board of her, or that there is not too much deck cargo? That is so.
651. That only applies to passenger steam-ships? It applies particularly to passenger steam-ships, but we have interfered in the case of little vessels carrying boilers or other deck cargo likely to interfere with their safety, but as a rule, our action applies more to passenger steamers than to other vessels.
652. How would an inspector get to know that a little vessel was about to carry a boiler on her deck, or some other heavy piece of cargo which would endanger her safety? There are two inspectors especially told off for duties of this kind in Sydney. They find out, as a rule, anything of the sort which is going on. We often get information too from persons on board the ships.
653. As to deck cargo? Anything that is considered dangerous or inconvenient.
654. Have the inspectors power to stop any vessel from carrying deck cargo? They have certain powers, but the fact is that it is a misdemeanour on the part of owners to send a ship to sea, or on the part of the captain commanding her to take a ship to sea if she is considered dangerous. If the inspector points out to the Marine Board anything which he considers dangerous the Board communicate with the captain or the owners showing them the liability they incur under the Act. This generally has the effect of their seeing that the objectionable cargo is stowed below hatches, or that something of the sort is done.
655. But you only point out the liabilities which the owner or captain incur? No; we go further than that. I have produced a return, from which you will see cases in which we have detained ships which we have considered to be dangerously overloaded. In all cases of that kind the ships are provisionally detained.
656. If your inspector expresses the opinion that the safety of a vessel is endangered from overloading from deck cargo or anything of the kind you have power to provisionally detain her? We treat her as an unseaworthy ship, and provisionally detain her. The provision of the Marine Act, which is a transcript of the Imperial Act, is as follows: In the first instance, it is a misdemeanour, as I have mentioned more than once, on the part of owners or captains to be parties to the taking of ships to sea in an unseaworthy condition, and beyond that the State can step in and interfere if it be considered that the vessel is in an unseaworthy condition. I may mention here that a good deal of responsibility attaches to action of this sort, because we know that ship-owners as well as other classes of the community are very prone to go to law with the Government. You will thus see that we have to act with a great deal of tact, because there are important interests involved in the mere provisional detention of a ship. If a ship is ready for sea and the Marine Board detain her for only twenty-four or forty-eight hours the owners could show that they were injured through the Board's action. We have therefore to be very particular in these cases, but I need hardly say that we do take action when we consider it necessary.
657. You said last week, with reference to steam colliers running to Sydney from the coal ports, that you were aware that some of them arrived in this port with their hatches off, or were probably at sea with their hatches off? Yes.
658. You do not know how the practice could be stopped in the case of colliers arriving during the night? There would be a little difficulty about that.
659. Have you ever had any complaints as to steam colliers being overloaded? Yes.
660. Have you ever had any of the masters up before you? Yes; and we have more frequently sent inspectors on board. I may mention that to my mind the recklessness with which the masters of these vessels will sometimes, if they get the chance, load them up is very remarkable.
661. You are aware that there is a good deal of competition between the steam colliers, and that there is an arrangement whereby the masters obtain a bonus if they take an extra quantity of coal? I have heard that such is the case. I may mention that we have several times had owners or masters fined for overloading.
662. Are you aware that the practice still goes on in this port to an inordinate extent? It is very likely that it goes on. I have had serious complaints more than once as to the condition of the colliers of the port, and it has been ascertained that these vessels have been made the receptacles for the remnants of cargoes of other vessels, and really they have not been at sea in the condition in which they have been seen in the harbour.
663. Are you aware that it is quite a common practice if a steam collier is coaling a ship down at Neutral Bay or one of the large ocean steam-ships, to arrive at night after dark having on board from 50 to 75 tons of coal more than she is allowed to carry? I do not know that.
664. Of course you are aware that gangs of men are always ready to go off from Circular Quay as soon as the collier is alongside the steamer? Yes; I am quite aware of that.
665. And you can see for yourself that if the collier is not discovered at night-time to be overloaded it will be quite possible for her to raise her mark before daylight? That is so.
666. That is quite a common practice in Sydney—colliers having to load a vessel at Neutral Bay or one of the ocean-going steamers frequently come into port at dark, knowing perfectly well that although they are overloaded their mark will be well up before daylight because the discharging will commence immediately they enter the port? I think we shall be able to stop that practice to a certain extent now we know that it prevails.
667. Do you think it will be possible to arrange with the inspectors to visit these places? I think so. Perhaps the better plan would be to gain the co-operation of the water police. They are active in detecting vessels without out lights, and are quite willing to assist us in other ways.

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668. What is the practice in cases where the inspector has not noticed a part of a vessel which happens to be unseaworthy? We often hear rumours that such is the case. Statements as to vessels being in a bad condition often come from some of the crews. These crews, as a rule, are always anxious—for their own safety, I suppose—and so give us information as to any defects. That has been done in many instances.

669. If the complaint is made by any of the crew, would you require it to be signed by the whole crew? We do not wait for that; as I have said the policy of the Marine Board is usually to discharge duties of this kind as rapidly and effectually as possible. The Act provides for a certain form of declaration—that so many of the crew should come before us—but if we hear of anything detrimental to the safety or even to the comfort of those on board a vessel we always without this formality send an officer or inspector on board, and as a rule with the desired effect. In many instances the men who complain do not care to appear. They give us the information privately, and we do our best to protect them.

670. Suppose a crew sign a requisition for a survey by the Marine Board;—would they have to pay for the survey? The crew are never charged; we do the work with our own people.

671. You have had complaints from several crews, I believe, as to the unseaworthiness of ships? Yes.

672. There was one case in which the crew refused to go to sea on account of the unseaworthiness of the ship. I refer to the case of the "British Commerce" which occurred about eighteen months ago? I think I recollect that case.

673. Her rigging was bad up aloft, and the statement was made that the surveyor sent down by the Marine Board never went up aloft to look at it? I do not think Mr. McRitchie is a man to shirk his work. I believe he was the officer who made the survey in the case to which you refer. As far as I can recollect, the complaint was not borne out. You can quite understand that there are often disaffected people on board ships who make complaints. Men often complain when they want to get discharged. All that they want to do is to get rid of their bond with the ship as easily as they can. We have sometimes had cases of that sort.

674. Do the inspectors ever go on board the cargo steamers, and inspect their life-saving appliances? In the case of vessels that hold our certificates, yes.

675. But it is not absolutely necessary that a vessel not carrying passengers should hold your certificate? No.

676. Do you not think that that is altogether wrong? I have already suggested that the schedule I have handed in, should be attached to any new legislation with a view to remedy that state of things.

677. This is one of the changes you would like to see effected? Yes.

678. Of course if these cargo vessels had to carry your certificates they would have to undergo periodical survey? Yes; every six months.

679. Now, with reference to passenger steamers, do you consider that the intercolonial steamers sailing out of this port with passengers are provided with sufficient life-saving appliances for the number of passengers they carry? Perhaps in some instances they should carry more than they do. If the schedule which I have handed in becomes law, the passengers on every ship will be perfectly safeguarded in this respect.

680. I went to the trouble the other day of counting the passenger list of the "Mararora," one of the finest passenger steamers running into this port. I found that she went away with 217 saloon and 167 steerage passengers, making a total in all of 384. I put her crew down as seventy souls all told. That would make 454. Do you think the "Mararora" carries sufficient life-saving appliances for 450 souls. I may remind you that she carries eight boats? Perhaps she would scarcely have sufficient if she carries only eight boats. That would not be sufficient boat accommodation for the number of passengers you indicate.

681. You could not allow an average of more than forty for each boat? No; and that would provide for only 320, but if the schedule which I have handed in is adopted in the new legislation, it will remedy that state of things. My impression is that the "Mararora" does not hold a New South Wales certificate. In the case of vessels holding our certificates, they are obliged to have a life-belt on board for every passenger and every member of the crew. They do not get their certificate unless that condition is complied with.

682. Are you aware that a Bill has been introduced into the House of Commons, called the Seamen's Rating Bill? I believe so, although I am not posted up in the subject.

683. Do you think it would promote the safety of life if those who are shipped as able seamen, and who may be called upon to work the boats and life-saving appliances, had some certificate of competency? I think there should be something of the kind. I know that it is the case in the Royal Navy. A man does not get his post as able seaman without showing his proficiency.

684. You cannot conceive of men who have never been to sea in their lives going on board ships and pretending to undertake the duties of able seamen? No.

685. I suppose you have heard that of late years that has been the practice in this port in time of trouble? I have heard so.

686. With regard to the number of the crew which a vessel carries, you have no power under your Act to determine the number? No.

687. Do you not think it a strange anomaly that we should be so particular about life-belts and life-boats and fire extinguishing apparatus, and that there should be no provision in the law enabling you to say when a vessel is undermanned? I think it is. The old Act made it compulsory for four seamen and an apprentice to be carried for every 100 tons, but that principle was dropped when the Seamen's Laws Consolidation Act was passed in 1854.

688. From your long experience at sea in various capacities you do not think that a steamer of 400 tons going to sea with only three hands on board could be said to be properly manned? Certainly not.

689. You are aware that a steamer sailed between Newcastle and Sydney during the strike of 1890 in that way? So I understand.

690. If a vessel could not get a crew and the captain was satisfied to take her to sea you could not prevent him from so doing? No.

691. You have nothing to do with the quality of the crew under any circumstances? No.

692. The crew might be suffering from *delirium tremens* or they might be unable to understand a word of English, they might not understand a single word of command, but nevertheless you could not interfere? No.

693. And you think the power of interference in such circumstances as those should be vested in the Board? I certainly think there should be power to prevent evils of that sort somewhere.

694. You do not think that it is calculated to promote the safety of either the travelling public or seamen when vessels are allowed to go to sea either undermanned or manned by men incompetent to perform the duties demanded of them? No.

695. Your inspectors do not go on board vessels of any class not holding your certificate? Not so frequently as in the case of those holding our certificate. If a vessel holds our certificate the Marine Board guarantees that she is fit in every respect to do the work on which she is employed. In the case of vessels which do not hold our certificate there is not the same responsibility upon the part of the Marine Board.

696. The guarantee in that case rests entirely with the ship-owners? Yes; with them and the master.

697. Consequently, if a vessel were not guaranteed by one of your certificates it would be possible for her boats to remain in the chocks until they were pretty well rusted down? Yes; but I think it would be a matter of great difficulty for the State to keep the whole of the boats in order. It really must rest with the captains and officers of the vessels whom you would expect, for the sake of their own safety, to take a little interest in the matter.

698. You are aware that in the bustle of running to and fro between the coal ports and Sydney, short distances, those on board very seldom think of the possibility of disaster coming upon them? I am afraid not.

699. And you think that better provision ought to be made, in view of the contingency of disaster overtaking these vessels? Yes; my experience at sea has always been that it is necessary to keep seamen back from running into danger. They are quite careless in such matters generally.

700. You stated at our last meeting that you had power to survey ships and have their load-lines marked? Yes.

701. Have you any fixed scale? Yes.

702. What scale do you go by? We have a very elaborate scale, which was projected in England by the Board of Trade.

703. So much free board for every foot of hold? Yes, and intricate measurements as to the build of the ship in addition to that.

704. You practically carry out the scheme recommended by the Board of Trade in England? A similar scheme—yes.

705. Are you supposed to insist that a stated number of boats shall be carried? There is a provision in the present Act, but I do not consider that it is satisfactory. That is why I advocate the adoption of the schedule I have produced. I think it should be attached to the first Navigation Act Amendment Bill that is passed.

706. You consider that a vessel undermanned, or carrying a crew of incompetent men, is a danger to other vessels navigating? She is.

707. A case occurs to me in which a Newcastle steamer, full of passengers, was nearly cut down by a vessel carrying a crew of kanakas, none of whom knew port from starboard;—that would be dangerous to the vessel carrying them as well as to other vessels? Certainly.

708. *Chairman.*] The schedule you have handed in this afternoon you desire to substitute for Schedule F of the existing law, I suppose? Yes.

709. You gave the schedule careful consideration before submitting the proposed amendments? I did, and I think it is positively necessary that it should be made law as soon as possible.

710. You strongly recommend that? Yes, I do.

711. *Mr. Davis.*] You have power to issue regulations for the control of the harbour traffic of Sydney? Yes.

712. Do you not think that collisions in the harbour have been very frequent lately? No; I think that we are marvellously safe. I looked out of my window not three days ago and counted sixteen vessels under weigh in Sydney Cove at one time. Considering the traffic of Sydney Harbour, I think we are marvellously clear of collisions.

713. *Chairman.*] Is that not owing to the new wharfage accommodation which has been recently provided? Yes, to a certain extent.

714. In old times the steamers used to cross one another, but now the wharfage accommodation has been so arranged that there is no need for them to cross? The whole of the wharfage improvements are not yet complete, but the work is under construction. The Marine Board have always endeavoured to keep the up-harbour traffic on the west side of Sydney Cove, and the down-harbour traffic on the eastern side, thereby preventing many crossings.

715. *Mr. Davis.*] Have there not been a great many collisions between the two Balmain ferry companies? More bumps than actual collisions. You see the persons employed on the steamers are employed to compete with each other, that is, with the men on the boats belonging to the rival companies, and I am surprised, under the circumstances, that we have not had more serious collisions.

716. The boats sometimes run very close to one another in approaching the wharfs and jetties? I think the masters of these steamers are put in a trying position. The unfortunate men are employed to do all they can for their company, and each company is competing as hard as it can with the other. If a collision occurs the master is the man who is blamed, and he is really only obeying the orders of his employers.

717. You have no power to arrange a time-table for the two companies? No; all that we have power to do is to make them adhere to a time-table upon which they have mutually agreed.

718. *Mr. G. D. Clark.*] Would it not be a good thing if you had power to make a time-table in certain instances; take the case of the Balmain ferry; tables have been arranged on each side again and again, but it seems impossible to arrive at any mutual agreement in the matter—it seems to me that power ought to be vested in some authority not only to draw up time-tables when boats are competing against each other and running to the same wharfs, but insisting on the time-tables so drawn up being adhered to? It would perhaps be a difficult position in which to place a public body to ask it to produce a time-table to suit competing companies. I may say that in the case referred to I have done all I can to bring about an amicable arrangement in regard to the time, but each company insists that certain times of the day, and, in fact, certain minutes of the day, are most favourable to them. In this way a number of difficulties present themselves. No doubt if there were some authority to draw up a time-table for them it would be a good thing.

Captain
F. Hixson.
27 Feb., 1894.

Captain
F. Hixson.
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719. I understand that you have no power to deal with cases of collision unless the damage to property exceeds £50, or life is lost? We cannot take the master's certificate away unless serious damage is done to a vessel or loss of life occurs; but we often inquire into minor cases. We spent three days over this Balmain ferry business a short time ago, inquiring into an allegation of incompetency and misconduct, and the opinion I formed at the end of the three days was that the man so charged was a smart fellow, and knew his work as well as anybody.

720. *Mr. Davis.*] Of course he was working for his employers? Yes; and all that I can say was that he is a most intelligent man.

721. *Mr. Edden.*] You said in reply to the Chairman that there were cases in which vessels went out of port with their hatches off;—I suppose that at a port like Newcastle many colliers would leave the port at night as well as in the day-time? They leave at night-time almost as frequently as in the day-time.

722. I understood you to say that you had an officer at Newcastle whose duty it was to see that the hatches were put on? Yes.

723. Have you only one officer there who discharges this duty? Only one special officer.

724. Then it would be impossible for this officer to discharge his duty at night-time as well as in the day-time? Of course he cannot be on duty always. There is really more than one officer who discharges this duty. There are inspectors among the pilots and harbour masters people. They take note of these things in the day-time, and the special officer is to a great extent available for night duty. At the same time he is not always there.

725. Do you think that is a sufficient number of officers for a port like Newcastle where so many vessels are always leaving? Of course, if vessels are to be inspected constantly night and day one officer would not be sufficient.

726. Do you not think it is necessary that vessels should be inspected night and day if there is to be safety? I believe it is, but at the same time the masters and officers of the ships who are really the persons most interested in matters of this sort should look after it. One would naturally think that they would be the first men to see that steps necessary for the safety of the ship were carried out. The State cannot possibly look after every ship belonging to private owners. If the individuals on the ships do not look after these matters it is impossible for the State to do it effectively.

727. If a vessel leaves Newcastle at night-time with her load-line below the water, and there is no one on duty to see that the thing is done, there is no one to detect the offence until the vessel arrives at her destination? That is so.

728. And if the ship's destination is beyond the Colony there would be no liability upon the owners? It does not matter at what port the ship arrives so long as it is a British port because the Merchant Shipping Act is reciprocal. A ship leaving Newcastle for instance overloaded could be met at any British port and the masters or owners could be proceeded against. We frequently have communications from the Board of Trade, and from the neighbouring colonies, on the subject.

729. You know for a certainty that there is reckless overloading at times? Upon some of the vessels—yes.

730. I understood you to say that the Board have frequently had occasion to reprimand the owners and masters, and to take proceedings against them? Yes.

731. I see that the penalty for overloading is a fine not exceeding £100, what fine is generally imposed? The magistrates I must say are rather adverse to heavy fines, but I have known £10 and £20 fines inflicted.

732. I suppose you could not suggest any more effectual means of preventing overloading? The public are very apathetic in matters of this sort until a catastrophe occurs. Then everyone wants to know why a certain thing was not done. Perhaps it is not news to you to hear that the Marine Board meet with anything but sympathy on the part of the public when they interfere in the discharge of what they consider to be their duty. Of course when there is a catastrophe the boot is altogether on the other leg. A clever lawyer, before a magistrate who does not perhaps know very much about these matters, would perhaps succeed in covering with ridicule any complaint the Marine Board might make if there were no loss of life or limb involved in the case.

733. I understood you to say a short time ago that you were often under a compliment to the crew of vessels for giving you information with regard to any defect in them? Yes.

734. And that these men in many instances did not like to appear? Certainly.

735. What is the reason of that? They think they might be discharged by the captains or owners if it were known that they had made themselves prominent. I knew of a captain trading out of this port who was notorious for appearing before the owners, and expressing his willingness to do almost anything but for that dreadful Marine Board. The same man used to come quietly to us and say, "Look at what they are going to put on board the ship. Do not let them do it." The man was two-faced. He was anxious for his own safety on the one hand, and on the other frightened of offending the owners, and this is not the only case of the sort.

736. Does not the fact of the Board having to depend upon the sailors and officers for information show either that there are not sufficient inspectors or that the inspectors do not do their duty? As I have said, it is impossible for the State to look after every vessel. All these vessels are private property, and the State must deal very cautiously with the owners of that property. The ship-owning business has latterly been anything but a paying one, and any unnecessary interference would be a mistaken policy. At the same time, if real abuses exist, it is the duty of the State to interpose and sift them out.

737. You said, in reply to Mr. Davis, that the recommendations you have made in the document which you have handed in to-day would provide boat accommodation and life buoys for every passenger on steamers? Yes; and for every other ship sailing out of port.

738. *Chairman.*] I suppose you know that some time ago it was the intention of the Colonial Treasurer, Mr. See, to bring in a Bill for the reorganisation of the Marine Board? I do.

739. Have you had any consultations with Mr. See as to the drafting of that Bill? Yes.

740. You approve of the introduction of that legislation? I do not disapprove of it.

741. You think that the Board, as the Colonial Treasurer proposed to reorganise it, would be preferable to the Board which now exists? Well, the tendency of the present day is in the direction of class representation, and I do not see why it should not be applied to the Marine Board as well as to other bodies.

742. You think that all interests and all those engaged in maritime pursuits would be better served by the Board as proposed to be reconstructed? Yes; and more satisfied, perhaps.

743. *Mr. G. D. Clark.*] Do you not think that the powers of the Marine Board might be extended in the direction of issuing regulations for harbour traffic? It might, perhaps, be done, but you place a public body in rather an anomalous position when you ask it to undertake the control of private enterprise and competition.

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F. Hixson.
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744. Do you not think it would be well in the case of the two Balmain Ferry Companies for the Marine Board to interfere, and draw up a time-table? I am afraid the Marine Board would not give satisfaction even if it did interfere. It certainly would not satisfy both sides.

745. *Mr. Davis.*] And it might be charged with partiality? Quite so.

746. *Chairman.*] Have your Board any control over the small 50-ton vessels which run down to Lord Howe Island? In the same way that we have control over other vessels.

747. I suppose they are allowed to carry passengers in the case of emergency? There is no restriction of that kind. The passengers go at their own risk. The Passenger Act comes in only when there are over fifty passengers.

748. You have no control with respect to the cargo carried by these vessels? Only if there is overloading, or if there be any dangerous cargo, such as explosives, or things of that sort.

749. Does the jurisdiction of your Board extend to Lord Howe Island? It does. We have a flagstaff there. It is a port of New South Wales. We pay one of the inhabitants a trifle for signalling, and things of that sort. The place is really a part of New South Wales territory.

750. Is it not rather an expensive part? I think it is, and a very troublesome part.

751. *Mr. Davis.*] You are aware that the Marine Board is charged with being over-stringent in what it did in the case of the "Royal Tar." Is there any foundation for that charge? The "Royal Tar" scarcely came under the jurisdiction of the Marine Board. The case was dealt with by the Emigration Department. The Passenger Act to which I referred just now provides that when a vessel carries over fifty passengers it shall come under the special regulations of the Emigration Department. This ship had to be altered from an open hull to a passenger-carrying vessel. I may say that I do not know anything about the case officially, but I did hear that an officer had insisted upon the ship's mainmast being taken out on the plea that it was not sound, and that it was found sound, and was put back again.

752. What officer was that? Captain Vine Hall, I believe.

753. Acting for the Emigration Department? Yes.

754. I believe the cable also had to be increased in size? I heard that that was so.

755. That necessitated the hawse-pipes being made larger? Perhaps it would.

756. Is there any provision in the Emigration Act as to what the size of the chain cable shall be? Not in the Act, but I think there is authority under the Act to enforce certain alterations if they are considered necessary.

757. And the "Royal Tar" was really surveyed by Captain Vine Hall, acting for the Emigration Department? Yes.

758. The Marine Board having nothing whatever to do with the matter? Quite so.

TUESDAY, 13 MARCH, 1894.

Present:—

MR. G. D. CLARK, | MR. DAVIS,
MR. EDDEN.

A. J. KELLY, ESQ., IN THE CHAIR.

Mr. William Cruickshank called in, sworn, and examined:—

759. *Chairman.*] You are Engineer's Surveyor to the Marine Board of New South Wales? Yes.

760. It is the intention of this Committee to make recommendations for legislation dealing with our shipping laws, and we shall be glad to hear your opinion as to the alteration of those laws. I suppose that, in your capacity of Engineer's Surveyor, you have had ample opportunity to observe the defects of the existing law affecting harbour-going steamers and intercolonial boats? I have had a fair experience of the operation of the law.

Mr. W.
Cruickshank.
13 Mar., 1894.

761. Could you suggest any amendment of the law which would tend to safeguard the interests of the public? The principal thing I would point out is the necessity for having all steamships surveyed independently of their carrying passengers.

762. That is not provided for by the Act? No.

763. I suppose you have a good knowledge of the Act? I have a fair knowledge of it in so far as it affects my own Department.

764. Is it not mandatory on your Department to see that all steamers are inspected at least once every six months? It is not compulsory so far as all steamers are concerned for them to be officially examined.

765. Under what conditions do you examine steamers? Only passenger steamers are examined.

766. And you would apply the survey to all steamers? Yes; as is done in Victoria.

767. What term would you suggest? The term is a matter for consideration. Large ocean-going ships might be surveyed once in twelve months, but harbour or coasting steamers should be surveyed every six months. We have no option as the law now stands. We have to examine all passenger steamers every six months.

768. Did you examine the "Warrimoo" lately? Yes.

769. Did you find anything defective in her? Nothing seriously defective.

770. In your opinion she was in a thoroughly safe condition to undertake her voyage? Under the conditions under which she sailed. I may say that I received a letter from the engineer the other day written from Fiji. He said that everything was working satisfactorily.

771. Have you any control over the boilers of harbour steamers? We examine all harbour steamers, provided they carry passengers.

772. Those that do not carry passengers can go as long as they please without examination? Yes.

773. Do you think that is right? No; I think that all steamers, whether they carry passengers or not, should be subject to the same examination.

Mr. W.
Cruikshank,
13 Mar., 1894.

774. *Mr. G. D. Clark.*] How often do you say you examine steamers belonging to this Colony? Every six months officially, but they are examined from time to time as we happen to be about.
775. Do you examine the machinery of foreign-owned vessels which are not registered in this Colony? Sometimes, at their own request.
776. Suppose representations were made to you by the firemen of a particular ship that her boilers were unsafe, would you have power, apart from any request by the captain or engineer, to examine her? That question was decided some years ago when we were surveying some of the French and German vessels. It was decided that we had not the power as there was a treaty existing between the Old Country and France and Germany that their vessels should be treated as men-of-war, and should have all the privileges of men-of-war so far as we are concerned.
777. But in the case of British-owned vessels sailing to foreign ports, I suppose you would have the necessary power? We have the same power over them as we have over our own vessels.
778. Have you power to prevent a vessel from going to sea if, in your judgment, her machinery is not in good order? I have no power.
779. But you report the matter? Yes.
780. Do you know whether the power rests with those to whom you report to prevent a vessel from going to sea if, in your judgment, it is necessary that she should be detained? They have that power.
781. I suppose your examination extends only to the machinery? No; it takes in the whole of the vessels—hull, boilers, engines, and equipment.
782. In the case of any vessel registered in the Colony, if representations were made to you from the firemen, you would not hesitate to ascertain whether those representations were correct or not? We have power to go on board any ship, whether she carries passengers or not.
783. *Mr. Davis.*] Do you ever receive complaints from the crews of passenger steamers? Very seldom.
784. That is, I suppose, on account of your putting them through a periodical overhaul? I suppose so; we have practically no trouble with them.
785. Do you know the steamer "Lass o' Gowrie"? Yes.
786. Do you know what was the matter with her recently? A joint of a patch on her boiler blew out.
787. She would not come under the category of a passenger-carrying steamer? She has not been upon our books for many years.
788. Then I suppose a considerable time has elapsed since you examined her? I do not think we have examined her for ten or twelve years.
789. Do you not think that when the recent accident happened to her she was placed in jeopardy? She may have been, in bad weather.
790. The lives of all hands might have been lost? It is possible.
791. You have no power to determine when a ship is adequately manned in the stoke-hold? None.
792. But you have power to determine when a vessel has all she requires in the engine-room? So far as the engineers and engine-room are concerned, we have ample power.
793. You see that they carry certain spare articles in case of accident? Yes.
794. Are they not supposed to carry them under your regulations? The word is "should," not "shall."
795. Do you not think that the word "shall" should be there instead of "should"? In some cases and with some persons.
796. You mean that "should" is quite sufficient for some companies but not for others? Yes.
797. But the word "shall" would include all? If the word "shall" was there we would give effect to it, but it is not there.
798. But if these things are required in the interests of life and property, surely every effort ought to be made to see that they are there? It is a very large question. I may mention that the word "should" is used under the Board of Trade and Lloyd's rules.
799. Still as regards deck equipment the word "shall" is used? Yes.
800. Why should it not apply to the engine-room? Because it is a difficult thing to know where to stop when you are providing spare gear.
801. But a certain number of articles are enumerated as those which should be carried? Yes.
802. And that number would not be exceeded even if the regulations contained the word "shall"? No.
803. But it would be more definite? Of course if you use the word "shall" whatever articles were enumerated would have to be aboard the ship.
804. But a number of articles are enumerated as being necessary at the present time. I suppose the regulations would not request that they should be carried unless they were considered necessary by those competent to form an opinion? You have to take a number of things into consideration; for instance, some of our vessels make very short journeys on the coast; the owners knowing that these vessels are only a short time away from port and think that if anything happened there would be no difficulty in getting repairs made. You must remember that spare gear costs a lot of money.
805. Could you not arrange that in the case of steamers making short trips the spare gear need not be insisted upon? The whole question has been elaborately gone into by the authorities in the Old Country, and the regulations as at present framed are the outcome. I can quite appreciate the difficulty; sometimes a vessel takes a short run, and sometimes a long run. The majority of vessels, as a rule, carry sufficient spare gear.
806. How many of the accidents which have occurred do you suppose would have been prevented if spare gear had been carried? Comparatively few.
807. You have provided in your regulations for the carrying of spare gear, and you have power to say whether an engine or boiler is sufficiently strong;—do you not think you should have power to define the number of hands necessary to work the machinery? Personally, I do not want any more power. I think I have too much already. I have practically unlimited power.
808. In some directions, but in this particular direction you have none? My personal opinion is that it is a delicate question to touch. The spare gear required for a modern set of engines is a very difficult thing to define, because there are so many different parts which might break. It is difficult to say what part you should compel vessels to carry in duplicate. Suppose you insisted upon twenty duplicate parts being carried, some other part of the engine of which you had no spare gear might break down. The question is surrounded by a lot of difficulty.
809. Do you not think that it is necessary that you should have power to define the number of hands necessary to work the stoke-hold? If we had power to define the number we should be in a position to do so.

Mr. W.
Cruickshank.
13 Mar., 1894.

810. Would you consider a vessel well manned, with due regard to her safety, if she had in her stoke-hold a crew who had never been to sea before as firemen? Decidedly not.
811. Has any case come under your notice within the last few years in which a vessel in these Colonies put to sea with a crew in her stoke-hold who had never been to sea before? Not any. I have not made any inquiries on such a subject; it is not a part of my duty.
812. You are empowered to inquire into the state of the engines and boilers; do you not think it is quite as important that some inquiry should be made into the competency of the men who have to work the machinery? I think it is a very important thing that the men should have had some experience.
813. You think then that you should also have the power to determine whether a vessel is properly manned? Of course those who go into the stoke-hold should have had some experience, but whether I should have power to determine their competency or not is another matter.
814. But do you think you should have the power? I do not think I ought to have the power.
815. You think it should be delegated to someone else? Yes.
816. *Chairman.*] Will you submit to the Committee, in writing, such amendments of the law as you consider necessary? I am quite willing to put a few of my principal suggestions in writing.
817. *Mr. Davis.*] Do you think that in the case of the "Lass o' Gowrie," if you had had power to examine the vessel's boilers, the accident might have been prevented? The probabilities are that it would have been, but you cannot make infallible machinery. We have power to go on board any ship, but it is a delicate matter to interfere with private property. For instance, there are persons who own steam-yachts; we must give them credit for knowing something about their own business. In this democratic country you have to be very cautious.

THURSDAY, 29 MARCH, 1894.

Present:—

Mr. EDDEN, | Mr. DAVIS,
Mr. J. D. FITZGERALD.

A. J. KELLY, ESQ., IN THE CHAIR.

Mr. Samuel Smith called in, sworn, and examined:—

Mr. S. Smith.
29 Mar., 1894.

818. *Chairman.*] You are the Secretary of the Seamen's Union? Yes.
819. How long have you been acting in that capacity? Two years and six weeks.
820. As a rule you have a fair knowledge of seafaring matters. You are acquainted with the wants and requirements of seamen? Yes.
821. You were secretary to the Union during the late struggle between the seamen and their employers? Yes; during the strike of 1893.
822. During that strike you had every opportunity of seeing in what way the operation of the law affected the men of your Union? Yes; I had a good opportunity of learning all that transpired during the dispute.
823. Were there any particular things which came under your notice at that time, concerning which you are in a position to give the Committee any information? On many occasions I saw the law violated by the shipping of men who were neither seamen or firemen.
824. Can you give us the particulars of any of the cases? Yes. I could name the case of the "Hesketh." Several men were shipped on board that steamer who had no previous experience at sea. Men were also shipped on the "Rockton" who had no previous experience at sea. On the "Adelaide" and "Innaminka" men were also shipped who had not been to sea before. The same thing happened on the "Emu."
825. Did any instances come under your notice in which crews were signed on ships without a representative of the Shipping Office being present? In the case of every vessel registered in New South Wales no representative of the Shipping Office would be present when the crews were signed on.
826. Do you not think it rather injudicious that crews should be allowed to sign on on any vessel in the absence of a proper witness from the Shipping Office to attest the signatures? My opinion is that in no case should crews be signed on unless a representative of the Shipping Office is present. That is one of the grievances which the men had in the months of July and August last. Men were being signed on day after day and they did not comply with the law as regards the production of discharges or even licenses to ship.
827. Do you not think it would be better if the crew of every ship were signed on at the Shipping Office? Yes. I should say that that was the proper course to adopt.
828. You would strongly advise it? Yes.
829. Cases have been brought under your notice where the granting of permits was carried on indiscriminately during the late trouble? Yes. In one case five men went to the office of the Shipping Master and asked for permits or licenses to ship; they had already made a voyage on a steamer. The Shipping Master wanted to know what ship they had been on. They were instructed by the captain to say that they were on none, and that they were going to ship on board the "Hesketh." The Shipping Master declined to give them a permit unless they brought a note from the captain or some other person. They went to the Free Maritime Labour Bureau in Clarence-street and each of the men was supplied with a note similar to that which I now produce. They returned to the Shipping Office and got licenses to ship as "deck hands." The Shipping Master considered them so incompetent that he would not rate them either as A.B.'s or firemen.
830. Do I understand you to mean that these men had already gone a voyage without a permit? Yes. They had no license to ship and no discharge.
831. They had not been signed on? No.
832. Could you name these individuals? One of them was named John Mitchell. I have shown you the note he received. Another was named William Cooper, and another John Hall. There was another young man whose name I forget. It happened to be a case in which the captain was prosecuted. A conviction was obtained against him.
833. Do you approve of the system adopted by the Maritime Free Labour Bureau in issuing these notes? No; I and all other men going to sea have a strong objection to applying to the bureau. We think that either the chief officer or engineer is the best man to judge of the fitness of applicants to engage in any capacity.

- Mr. S. Smith. 834. It has been denied that the system you indicate was practised by the bureau. We have been told that if men wish to ship on any vessel, they had first to make application to the engineer or mate. If they got a note from either of those officers they went to the Labour Bureau and were supplied with a ticket? They are doing that now—that is since this investigation commenced.
- 29 Mar., 1894. 835. Had the men in the case to which you have referred made application to the engineer or mate, or did they go direct from Messrs. Burns, Philp, and Co.'s office to the bureau? They were despatched from the bureau. They had never seen the captain until they went on board. The particular men to whom I refer were furnished also with a password.
836. You will see that there is a printed form on the back of these tickets setting forth the conduct and qualifications of the men, and leaving space for remarks of the officers. Do you approve of that being done in the case of these tickets issued by the bureau? The seamen object to the system very strongly. They think it is adopted for the purpose of blacklisting the men. The ticket is sent back to the Maritime Labour Bureau, and if the remarks on the back of it, as to the conduct and qualifications of the man, are not satisfactory, he is refused employment on any future occasion. It is possible to write remarks on these tickets which they would not dare to put on a seaman's discharge.
837. I suppose you have a pretty good knowledge of the Seamen's Laws Consolidation Act? Yes.
838. Is there any particular clause of the Act which you think requires amendment? I have seen the amendment proposed by Mr. Murphy to section 33. The effect would be to restrict the issue of licenses to seamen. I would prevent men who are incompetent from obtaining licenses to ship.
839. You approve of that amendment? Yes.
840. There is a section of the Act under which the Shipping Master may decide questions which seamen may refer to him. Do you know of any matters of that kind which have been brought under the notice of the Shipping Master? The chief disputes referred to him concern wages and things of that sort. Sometimes a question arises as to whether men are entitled to overtime, and that would be referred to the Shipping Master in some cases.
841. Can you call to your memory any particular cases in which the Shipping Master has had to adjudicate? I remember that when Captain Brown was Shipping Master he was called upon to determine the question as to when pay should terminate. The master claimed that when the vessel was laid up the crew were not entitled to wages. The crew claimed that they were entitled to pay while there was a number of the crew upon the articles.
842. I suppose you know of many cases where no account of wages has been rendered? It happens almost daily in the case of ships discharging their men in New South Wales. The provision of the Act in this respect is not complied with.
843. You would recommend that the Act should be strictly enforced, so far as the account of wages is concerned? Yes; that is a further reason for my opinion that all the men should be paid off by the Shipping Master, who would then have an opportunity of knowing whether the Act had been complied with or not.
844. With regard to the twenty-four hours' notice, do you think the laws should be amended in that respect? I think the arrangement meets with the general approval of the men. They are quite willing to give or take twenty-four hours' notice, but the captains often attempt to have the law applied only one way—that is, they say they can give, but that it is optional with them whether they will accept notice. In the case of a number of ships' articles, drawn up in Melbourne, discharge is at the master's option. The "Warrimoo" was signing under those articles while she was trading between Australia and New Zealand or in any part of the Australian colonies. The men feel aggrieved at the idea that they can be discharged anywhere. They would prefer one port of discharge I think, for giving or getting twenty-four hours' notice.
845. With regard to the matter of unclaimed wages, has any case come under your notice where the friends or relatives of a seaman have had any difficulty in regard to wages which should have been justly paid? I have heard of no case of injustice with regard to any of the men here. A case happened recently, however, in which a man belonging to the "Monawai" was drowned at San Francisco. Some interested persons made application here to the Shipping Master, and were informed that if the brother of the deceased applied through the Intestate Office he would get the money. The applicants were asked to communicate with the brother, who is resident in the United Kingdom.
846. Another section to which I should like to direct your attention is that providing for the payment of wages in cases where seamen are left behind on the ground of inability;—have any cases under that section been brought under your notice since you have been secretary to the Seamen's Union? I cannot think for the moment of any case where any men have had their wages taken away. In any case where a man is put ashore the wages are left for him.
847. Is it not possible as the matter now stands for a captain to leave a man behind on the ground of inability, paying him only at the rate of 1s. a month? The practice should be for the captain to go to the hospital and see that the man is satisfied, and that the amount left behind is what he is entitled to. The men think that the captain's statement ought not to be taken as to what is due to the man; but that some opportunity should be afforded for checking the amount left behind.
848. Do you know of any cases in which men have fallen sick on board ship, and have not received proper attention;—do you know of any cases where there have not been proper medical appliances? Yes. The local shipowners are very careless in this matter of attending to men who are injured while following their calling.
849. Is the medicine chest generally properly equipped? No. My experience is that it is generally very inadequately equipped. Nothing of the kind is provided in the case of vessels trading on the coast.
850. You would advise that the law should be more strictly enforced, and that it should be applied to vessels trading on the coast? That is one important amendment which is required. I have known of accidents happening to members of a crew when there has been nothing on board to give them immediate relief—no bandages or anything of that kind. In one case a man got his ankle severely twisted on board one of the Illawarra Company's boats. They did not go to the trouble of getting the man into a hospital, and he was supplied with a hospital ticket by the Seamen's Union. I know of another case in which a man was severely injured and had several of his ribs broken; he was supplied with an outdoor ticket, which was of no service to him, and he had to get an indoor ticket from the Union. Another case happened on board the "Maitland"; a man had one of his fingers taken off, he was also supplied with an outdoor

- outdoor ticket. Several other cases of the same kind have occurred on board the "Maitland," and the attention of the owners has been repeatedly called to the necessity for causing the dangerous parts of the machinery to be covered, but the requests have not been complied with. There have been four or five cases on board the "Maitland," where men have lost their fingers through the machinery being exposed.
851. Now, with regard to the boarding-masters' charges, have any cases been brought under your notice where men have been overcharged? The practice is carried on regularly, no doubt, but it is applied more particularly to men engaged on sailing vessels, and of course they do not come so immediately under our notice. Few of these men being members of the Union, it is with great difficulty that we can discover the cases. There is one boarding-master whom the Shipping Master is very anxious to see. He has frequently invited him to come to the Shipping Office, but he has always declined to do so. He has been cautioned with reference to his conduct. He induces men to leave sailing vessels arriving in port; these men are for the most part strangers. He gets the men billets on board some of our local sailing vessels, and imposes charges on them which are contrary to the Act.
852. Has the Shipping Master taken any steps to have this man prosecuted? Yes. He has repeatedly informed me that he has told the man to come down to see him, and has also told him that he is contravening the shipping law, but the man always declines to come to the office.
853. Does the Shipping Master know where this man resides? I dare say he does. I should say that he must do so.
854. Yet he has failed to take any steps towards prosecuting him? He finds a difficulty in getting the men to enable him to lay the necessary information. The men have great diffidence in giving evidence. On one occasion I remember directing his attention to a particular case. The men made certain representations to me, but when it came to taking them down to the Shipping Master to supply him with the necessary information they declined to go, from the fear, as they informed me, that they would be black-listed and prevented from getting further employment. That is a further reason for my opinion that all the men should ship from the Shipping Office. So far as improper charges are concerned, I have in my mind the case of a captain who made a charge of ten shillings to his crew. He informed them that he charged them that money for getting them a job. On the Shipping Master's attention being called to the matter the captain within the last week returned the ten shillings to the men, stating that he did not want to take the money from them, but that he would take particular care to get it out of them in another way, implying that he would only ship his men through a boarding-master, and that he would deduct both his charges and the captain's charges. I am referring to the captain of the brig "Prospero."
855. With regard to the inspection of vessels, do you not think it is necessary that the law should be so amended so as to apply to 50-tonners;—is it not necessary that steps should be taken to see that they are manned by competent men? There are often wages cases upon vessels which do not come within the scope of the Seamen's Laws Consolidation Act, showing that it would be better for the men themselves if the vessels were brought within the Act.
856. Are you aware that some of the seamen shipped on these coasting vessels are most incompetent men? Yes; they will take almost any man, whether he be a seaman or not, if he is a likely looking man to shovel coal. They never ask the men whether they have had any previous experience or ask them to produce papers proving that they are seamen.
857. It is not necessary to get a permit to join these vessels? It is not.
858. The law as to permits only applies to vessels over 50 tons? Yes.
859. I suppose no instance has come under your notice where seamen have refused to join ships? No.
860. No instances have come under your notice where seamen have quitted ships before they have been properly secured? None.
861. I suppose no cases of assaults upon officers have come under your notice? No.
862. Do you approve of the schedule of the Act with respect to the engagement and discharge of crews—I mean as to the fees? There is a great complaint in the case of vessels making trips to some of our coaling jetlies, trips which are accomplished within thirty or even twenty-four hours. The men are made to sign on and sign off, and it costs them a shilling. They think that some arrangement should be made obviating that, because it may occur half a dozen times a month, when it would be a tax of six shillings.
863. Who collects the fees? They go to the Shipping Office; the captain deducts them from the men's pay. The same thing applies to vessels making trips between Melbourne and Sydney, or Brisbane and Sydney. The "Warrego" recently made three trips in a month, and as she is not a New South Wales registered vessel, the men had to pay double fees; that is to say, it cost them 2s. for each discharge.
864. Would you suggest any alteration in the Act passed in 1879 for the protection of the aboriginal natives of the islands of the Pacific Ocean from imposition when engaging as seamen? I do not think any alteration is required; but it is necessary to see that the law is strictly carried out. I know there has been some laxity. It is even more necessary that these men should be taken before a Shipping Master than that other or European seamen should be taken before him.
865. Do you approve of having the boats lowered before a ship goes to sea? I think that every time a vessel is in port there should be a thorough inspection of her boats. I have known of cases where boats have lain in the davits from one six months' end to another.
866. And have never been lowered? They have never been removed from their position. When efforts have been made to raise them out of the chocks and swing them out, it has been found impossible to move them.
867. Has any case recently come to your knowledge where, when the boats were lowered and struck the surface of the water, the water came through the bottoms? It happened on board the "Kelloe"; there was a collision going down the harbour, efforts were made to get the boat swung out and it was found impossible to do so. When they did get the boat out it sank.
868. Could you name any other case in which a similar thing has happened? Another case occurred on board the "Barcoo"; violent efforts were made at boat-drill to swing the boats outside the ship; the efforts were unsuccessful, and they had to put the carpenters on to one of the boats when the vessel got into port.
869. You produce a letter written by yourself to the *Evening News*, with reference to the protection of seamen from the malpractices of boarding-masters? Yes. [*Vide Appendix C.*]
870. *Mr. J. D. FitzGerald.*] You are authorised by your Society to come here and give evidence? Yes.
871. And anything you say would be sure to receive its endorsement? Yes.

- Mr. S. Smith. 872. Has there been any discussion at the meetings of your Society upon these subjects? We have discussed at various times the question of undermanning, the difficulty men have of getting employment, and the question of boycotting.
- 29 Mar., 1894. 873. You mentioned the case of the "Hesketh," which occurred during the maritime strike? Yes.
874. What breach of the shipping law was there in that case? The men had been carried out to sea without entering into an engagement.
875. You say that a conviction was obtained? Yes; in that case, and also in the case of the "Emu."
876. Under the existing Act? Yes.
877. What was the case of the "Rockton"? It was a case of men being taken who had never been to sea before. One of the men is still on board the "Rockton."
878. The men were not seamen in any sense of the word? No.
879. Do you remember the practice of shipping men as "deck hands"? Yes. Where the Shipping Master feared that he might be going outside his functions, he supplied the men with licenses to ship as "deck hands," thinking that they were not competent to be rated as "A.B's." or "firemen."
880. Is there anything in the shipping laws permitting men to be shipped as deck hands? No.
881. What is the ordinary meaning of a deck hand? My idea of a deck hand is that of a man employed to look after cattle, or employed on board a harbour steamer.
882. It is assumed that there is no knowledge of seamanship whatever? Yes.
883. During the maritime strike, did it ever come under your observation that the men who shipped as deck hands took the place of qualified seamen? Yes. A considerable number of them took the place of men who were thoroughly competent seamen, and who were rated as "A.B's."
884. Looking at the practice, not as a seaman, but as a member of the ordinary public, do you not think that it endangered the lives of the travelling public? I think it placed the lives of all persons on board in jeopardy.
885. You are strongly of that opinion? Yes.
886. Officially, you made a protest at the time? Yes. The Union pointed out to the general public that lives were imperilled on board these steamers which were manned by men who had no knowledge of the ordinary duties of seamen.
887. I remember at the time the statement was made that some of these men had never been to sea before? Yes.
888. And that they were seasick? Yes. Several of the men had to be brought out of the stoke-hold in a state of collapse; they were thoroughly done up.
889. Was there any storm on the coast at the time? No; there was only ordinary weather.
890. Fortunately? Very fortunately.
891. You think that if a storm had occurred, disaster would have overtaken some of these steamers? I am positive that if there had been any bad weather it would have been very disastrous to life and property.
892. Through the incompetency of the men? Yes.
893. These men were shipped through the Shipping Office? Yes. They were shipped on board in many instances. In a case of the steamer "Adelaide," some of the officials from the Shipping Office attended and supplied the men with the necessary licenses.
894. The men were shipped with the full knowledge of the Shipping Office officials? Yes.
895. I suppose you have seen the regulations under which the officials of the Shipping Office act? Yes.
896. Do you think those regulations are acted up to, or are over-strained? I think they are very indifferently complied with or acted up to.
897. You think a strict observance of the regulations might have prevented a good deal of the shipping of incompetent men during the recent maritime dispute? I am positive that they would not have erred on the side of injustice if they had seen that the regulations were more strictly complied with. They had ample proof that the men had no knowledge of the work they were undertaking.
898. Do you think they had any legal right to send the men aboard as deck hands, knowing that the men would be used as seamen, and knowing that the ships would be undermanned unless the men undertook seamen's work? I am positive that they wilfully erred in sending these men on board, because they had ample proof that they were not capable of performing the duties required of them.
899. What was the case of the "Innamincka"? Four men had been engaged through the Labour Bureau, in Melbourne, and were placed on board the "Innamincka." They came here, where they were instructed to proceed to the Shipping Office and ask for licenses to ship. None of the four men had ever been to sea before. These men had a conversation with me, and desired to have their passages paid back to Melbourne. While negotiations were being conducted with a view to sending them back to Melbourne, the second engineer came across them and advised them to go and get their licenses. Three of them got licenses, and were sent in the ordinary way on board the vessel. One of them declined to get a license, and proceeded back to Melbourne as a passenger in another vessel. Information was laid against the captain, and a conviction was obtained. None of the four men had ever been to sea before in the capacity of sailors or firemen.
900. Under what section was a conviction obtained? For carrying seamen to sea without an engagement.
901. What do you think of the Steamship-owners' Free Maritime Labour Bureau? I think it is an institution which should be abolished as usurping the functions of the Shipping Office.
902. You think it is opposed to the spirit of the shipping laws? I am quite sure that it is opposed to both the letter and spirit of the shipping laws.
903. You have been a sailor how long? Twelve years.
904. You are a practical seaman? Yes.
905. You have had some experience of English, Scottish, and American ports? Yes.
906. Have you ever seen in the course of your experience at these ports, any such institution as a Steamship-owners Free Maritime Labour Bureau? The institution here is the first I have had any knowledge of. I learn from the English papers, however, that a similar institution is in existence in England. It has been declared to be in contravention of the shipping laws.
907. The free labour offices of the shipping federation of Great Britain have been declared to be illegal, or rather many of their doings have been so declared? Yes.
908. Do you remember the case of the "Phæbe"? Yes.
909. The men were carried to Newcastle without being signed on? Yes.

- Mr. S. Smith 941. Do you think that eight A.B.'s was a fair complement for the "Gabo"? I think that at the very least there should be ten.
- 3 April, 1894: 942. You think that in any amendment of the shipping law provision should be made for a minimum? Yes; decidedly.
943. On cargo ships as well as passenger ships? Yes; I think it should be applied to cargo vessels as well.
944. In the interests of the safety of the seamen, I suppose? Yes. In one instance the "Wodonga" left with 229 passengers and forty in the crew, all told, leaving 269 souls on board. There were eight A.B.'s on the vessel. One of these men was a painter. He is placed on the articles as an A.B., but he is really a painter. That shows the necessity for a rating Bill. I might state there are only three men in a watch in a case of that kind, which would leave one man on the look-out, one at the wheel, and one at liberty if any person were to get overboard.
945. Is that number sufficient? Decidedly not. You have only to refer to the case of an accident on board the "Waroonga." It took some twenty-five minutes to get a boat lowered when a passenger fell overboard. It took them one hour and five minutes to get the man on board. There was only one man at liberty to lower the boat. He had to call out the watch below to get the boat swung out and launched.
946. Does not that show that the vessel was insufficiently manned? Yes. I may state that when the same vessel arrived here from England she had twelve A.B.'s on board. The "Wodonga," the "Arawatta," the "Bulimba," and the "Waroonga," had all twelve A.B.'s on board, together with a boatswain and lamp-trimmer, when they came out from Britain. They would not have been allowed to leave Britain with a less number in the crew. Both the "Waroonga" and the "Bulimba" started carrying as many as twelve hands between Brisbane and Normanton. In each case the number of the crew has been very largely reduced. The "Gabo," which is very nearly of equal tonnage with the "Bulimba" and "Waroonga" has only eight A.B.'s on board.
947. All this goes to show the want of a provision for fixing a minimum number in the crew? Yes.
948. You know the steamship-owners' free Labour Bureau? Yes.
949. How do the operations of that bureau affect the arrangement of the Seamen's Union? Very injuriously.
950. Do you think it probable that the bureau was instituted with the object of injuring the Seamen's Union? I consider that it was instituted for the purpose of discovering, blacklisting, and boycotting union men—preventing them from getting employment.
951. Has this been done? I could give you several instances. I know of one man who applied to Mr. Currie for a job on board the "Aramac." He was in Brisbane, and he was told by the engineer that if he came to Sydney he would get the job. On his making application Mr. Currie refused to give him one of the usual shipping tickets, stating that the man had failed to register his name upon his books. The vessel went to Melbourne, and on its return to Sydney he was again informed by the engineer that he was desirous of engaging him. He again went to Mr. Currie, and requested to be supplied with a shipping-ticket. Mr. Currie again declined to give it to him. The engineer said he was quite willing to employ the man, but Mr. Currie went down and objected.
952. You know this of your own knowledge? Yes. I know of a man who is in Sydney now, he is a competent man, and he has a wife and family, but through the action of Mr. Currie has been unable to get employment. Then there is the case of S. Tanser. The engineer on board the "Cintra" was quite willing to employ him, knowing him to be a competent fireman, but there was some difficulty in the way of his getting a ticket from Mr. Currie.
953. Do all the shipowners use the free Labour Bureau? There are only two companies who use it regularly—the A.U.S.N. Company and the Adelaide Steamship Company. Occasionally the Illawarra Company use it. I have known men to be shipped by the Union Steamship Company through the medium of the bureau. If men apply to Mr. Richmond, the superintendent of the North Coast Company, or to Mr. Todd, the superintendent of the Newcastle Company, for employment, they consult the list, and if they find that the man's name is upon it, they tell him that there is no work for him. Tanser, I may say, applied to Mr. Richmond for work, but Mr. Richmond, looking down the list, saw his name in connection with the "Cintra," and said he could not engage him. No later than Thursday last Mr. Todd questioned a man named McClelland, supposing him to be a man named McLellan, who had been on the "Macleay." He said he thought McClelland was the other man, and, if so, he did not intend to employ him, because he had left one of the vessels during the strike. In the case of the Illawarra Company, the men have to make application to Mr. Turner, or the superintendent, Mr. Fletcher, and in that case also the list is brought into use.
954. Are you aware whether there are similar offices for the supply of these tickets in the other colonies? There was an office in Victoria, but it has been discontinued because of a conviction which was obtained against the manager, Mr. Dyson.
955. What was the charge? He was charged with illegally supplying seamen, not being allowed to do so by the Act. There was an appeal against the decision, but the Supreme Court upheld the decision of the Court below.
956. That would be for pursuing the same practice Mr. Currie pursues here? A similar practice.
957. Are all the men employed on the Association's ships compelled to produce these tickets? In all ships under the Steamship-owners' Association.
958. But there are others outside? There are several small companies, such as G. W. Nicoll, Yeager & Co., McCulloch, and several small steamers. The men are not required to go to the bureau in those cases; they are engaged by the engineer or by the mate, as the case may be.
959. Have the officers or engineers to produce these tickets? No; they make application direct to the superintendent of the company.
960. What is the object of the ticket? It is for the purpose of discovering who are union men and who are non-unionists, more particularly to discover the men who left their vessels in July and August of last year.
961. The bureau is practically an organisation for boycotting? Yes.
962. For the marking of certain men? Yes; in one case three men obtained employment direct from the chief officer, from whom they had been accustomed to obtain employment. Their names were J. Marshall,

Marshall, F. Olsen, and Farnan. These men had worked some portion of a day. In the course of the day it came to the knowledge of Mr. Currie that the men were working without having made application to the bureau. He went down to the "Arrawatta," and saw the chief officer, who said he could not knock the men off until their days' work was finished, because they had started it. Mr. Currie then saw Mr. St. George, and the men were asked to come into his office after they had done their work. Mr. St. George is the superintendent of the A.U.S.N. Company. He wished to know if the men were union men, and had been implicated in the late strike. Marshall told him that he had left his vessel in the ordinary way by giving twenty-four hours notice, and had been paid off. Olsen said he had not been to sea in a steam-boat for the past three years, that would be previous to the 1890 strike, and that he had been only one voyage in a sailing vessel. He also said that he was not a union man. Currie told Mr. St. George that that was a falsehood, that he knew the man to be a union man, and that the other two men, Marshall and Farnan, were union men. Upon this ground he declined to give them employment. The men were told at the close of their days' work that they would not be required further. There is another instance. There was a man named Donovan whom Mr. St. George was anxious to engage, as he thought he was a competent man. He had been for a considerable time in the Royal Navy, and had also been employed in the Prisons Department of this Colony. Mr. St. George said he would be only too pleased to give him a job if he would go to Mr. Currie and get a shipping ticket. The man went to Mr. Currie, who refused to supply him with a ticket. He returned to Mr. St. George, and told him that Mr. Currie declined to give him a ticket. Mr. St. George then supplied the man with a note, requesting Mr. Currie to give him a ticket, as he believed him to be a competent man. Mr. Currie still declined to give the ticket, saying he would see Mr. St. George himself.

963. *Mr. G. D. Clark.*] Did Mr. Currie give any reasons? He intimated, after a good deal of pressure, that he had asked the man a few days previous to the strike starting to take work, and that on his way down to the bureau the man had called at the Seamen's Hall, from which he inferred that he was a union man.

964. *Mr. J. D. FitzGerald.*] If the law does not already provide for the prevention of such offices as the Labour Bureau and the practices of gentlemen like Mr. Currie, you are clearly of opinion that it ought to be amended in that direction? I think that if the law does not already declare such an institution as the Free Maritime Labour Bureau illegal, it should be so amended as to do so.

965. *Chairman.*] For what purpose do you say you think the bureau is run by the Steamship Owners' Association? Although it is ostensibly to engage seamen and wharf labourers, it is actually maintained for the purpose of discovering the unionists among the seamen and wharf labourers. In the case of wharf labourers, they have a system of supplying two separate coloured tickets—one a blue and one a white ticket.

966. *Mr. J. D. FitzGerald.*] I believe they have crushed out the Wharf Labourers' Union? By the operation of the ticket system.

967. And that they have very seriously injured the Seamen's Union? Yes. They supply one colour ticket to what are known as free labourers, and tickets of another colour are given to men who are assumed to be unionists.

968. *Mr. G. D. Clark.*] Do they continue the use of the two coloured tickets down to this day? Yes.

969. *Chairman.*] Do you know whether Mr. Currie has sent any men on board-ship without discharges? Yes. In 1892 he instructed about a dozen men to go on board the "Tweed" lying at Neutral Bay.

970. *Mr. J. D. FitzGerald.*] In what capacity? As firemen and sailors. Two of the men had English discharges, two of them had none at all. Mr. Currie said he would obtain the discharges and forward them on board by one of his assistants. Mr. Currie and Mr. Cockburn, the Secretary of the Steamship Owners' Association, endeavoured to obtain licenses to ship from the Shipping Master for these men, but Captain Edie declined to recognise him in the matter.

971. Do you say that many seamen have been refused tickets at this bureau? I know that one man named William Seaton has been repeatedly refused a shipping-ticket; William Paterson, Robert Wilson, and John Ferguson have also been refused tickets.

972. These cases have come under your own notice? Yes. John Fergusson had worked one day on board the "Wodonga," when the captain brought him to the bureau, to sign him on to get his ticket. Mr. Currie objected, and the man had to stand down. Mr. Currie took the same course on a second occasion, when the man succeeded in getting a job. The man gave up trying here afterwards, and got employment on one of the Canadian mail-boats.

973. Have you any knowledge of Mr. Currie sending men down to ship on steamers who have not previously seen the engineer or mate? Yes. I am aware that he has done that on several occasions in the case of the steamer "Innaminecka." The "Innaminecka" arrives in Sydney from Adelaide on Thursday. She discharges her cargo, and then goes to a coaling jetty, returning on Saturday morning. During one of these absences three men were supplied with tickets by Mr. Currie, who told them to go down to the ship on Saturday morning, and see the engineer, when they would get a job. Two of the men were named Dwyer and Elliott, the third man's name I do not recollect. He has also sent men down to several of the A.U.S.N. Company's boats, without their having seen the mate or engineer, and they have had to accept the men.

974. Whether they were competent or not? Yes. Mr. Currie made no inquiry as to whether the men were competent to fulfil their duty.

975. Do you know of any cases where men have been sent down in excess of the number actually required? On several occasions he has sent down a number of men for whom there were no vacancies. In one case, that of the "Aramac," he sent down certain men for the purpose of putting out some who had proved to be incompetent. They did not care about telling the men straight out that they were unfit for work, because they had previously declared them to be competent men in the newspapers and to the shipping authorities, who questioned them in the matter. They adopted this ruse for the purpose of thinning these men out and engaging competent men.

976. Have any illegal practices on the part of captains of sailing vessels come under your notice? My attention was drawn to a glaring case about six weeks ago of unjustifiable conduct on the part of a captain. I made investigation, and discovered that a man had been charged 5s. by the captain for being supplied with employment. I was informed that the same captain had charged other men 10s. who had been engaged on the same vessel. I refer to the captain of the "Prospero." The Shipping Master laid an information upon the facts, with which I supplied him, and obtained a conviction. The man was fined

Mr. S. Smith. £3, and was ordered to refund the money. He had charged three men 10s., and one man 5s. I will mention another objectionable practice which prevails among many captains here. About two years ago a member of the Seamen's Union had been engaged as second officer on board the "Waitemate." The captain, after getting the man on board, made overtures to him to accept £1 and leave the vessel. The man declined to accept the money, and said he would not leave. The captain then told him that he would have to sleep in the cook's quarters, which so annoyed the man that he eventually went on shore for the purpose of lodging a complaint. He complained to the Shipping Master, but before anything could be done for him the captain had left the port without the second officer, the boatswain on board acting in that capacity. The man made an attempt to obtain redress, but owing to the difficulty of putting the law into operation, he did not succeed. The vessel did not return for a considerable time afterwards, and meanwhile had changed her captain. The captain had placed on the articles against the man's name the statement that he had failed to join the vessel. The man's name is Mackenzie. I informed Captain Edie of the circumstances, but he said he could not do anything. In some cases the captains get men who are masters of vessels, with exemption papers, to sign on as masters, and to act in the capacity of mates. That is a thing which the officers would like to see discontinued.

977. Have you any knowledge of men being induced by Mr. Currie to leave their vessels in order to join coasting steamers? In one instance three men were induced to leave a German steamer lying in the harbour to engage on board a coasting steamer. They were carried to sea without signing articles. An attempt was made to get the case brought before Court, but owing to the men not thoroughly understanding the English language, we failed. One of the men said he was prepared to give evidence, but he could not get his two friends to join him.

978. Is that the only instance you know of? That is the only case I could discover in the strike of 1893, but I have a knowledge of the Superintendent of the Illawarra Company going on board some of the sailing vessels and inducing the crews of those vessels to leave, with the connivance of the masters of the particular vessels, and engage on board coasting steamers, the inducement being the higher wages.

979. What is your opinion of the conviction of Mr. Dyson in Melbourne? We are strongly of opinion that a similar conviction should have been obtained here, because the Crown Law officers of Victoria and England have declared the institution there to be illegal. The Commissioner of Customs in Victoria also gave it as his opinion that Mr. Dyson was acting illegally, and his opinion was endorsed by a Judge of the Supreme Court. I can give you a copy of the opinion of the Crown Law officers in England, in answer to a question asked by Mr. Lockwood. I will also produce copy of the communication which took place between Mr. Wilson of the British Seamen's Union and the Board of Trade on the same subject.

980. Do you think the Seamen's Union serves any purpose other than giving protection to the seamen? Yes; I think it has been the means of directing the attention of the authorities to much misconduct and infraction of the Shipping Law by the captains of vessels. It has served the general public also in obtaining for them better equipped vessels. It has also directed the attention of Marine inspectors to considerable neglect on the part of ship-owners. The authorities have declared that certain allegations made by the Seamen's Union were not backed up by facts. But the contrary is proved by the convictions which have been obtained in the Police Courts.

981. Is it true that the sailors all work eight hours while the firemen and trimmers work only six? A seaman's ordinary day is twelve hours, but occasionally they have to work eighteen hours out of the twenty-four. The majority of firemen and trimmers work eight hours; but on some of the small vessels the firemen have to work six hours. Some of the smaller vessels carry passengers to the northern coast, and the fireman has to act in the capacity of engineer, fireman, and trimmer. He has often to go to the coal-bunkers for coal, and there is then no one in the engine-room to attend to any signal from the deck.

982. Do you think that is justifiable? I think it is a practice very dangerous to every one on board. It imperils the lives of every one there.

983. What do you think would be a fair crew for vessels of the character you describe? They require two more men, one to act as engineer, and the other as fireman.

984. That would allow the men to get four hours on and eight hours off? Yes.

985. *Mr. J. D. Fitzgerald.*] Do you think the Seamen's Union has benefited the men? Yes, it has benefited them considerably. It has got the vessels more efficiently manned, and there are better provisions and better conditions than obtained generally before. I might mention that this was done while the Union was recognised by the Steamship-owners' Association. It was more powerful then than it is at present.

986. You think that the power of the Union itself has succeeded in bringing about these changed conditions? Yes; my reason for saying so is that the steamship-owners said that the law did not admit of a certain number of men being carried. The men said that they thought their request only fair, and that they found the work too hard for the number of hands then carried. In many cases they got an increase in the number of hands, and the increased number engaged had been insisted on by the Board of Trade in the United Kingdom prior to vessels leaving that country. Since 1890 there has been a regular decrease in the number of hands. Many of the vessels have been reduced from fourteen to eight, others from twelve to six. Several vessels which used to carry ten hands, a boatswain, lamp-trimmer, and eight A. B.'s are now carrying five. The vessels in which the number of hands have been decreased are, among others, the "Rockton," "Cintra," "Barcoo," "Waroonga," "Bulimba," the "Glenworth," and "Eurimbla." They are now carrying two trimmers instead of three, and six sailors instead of ten. There is only one man on the look-out on the "Eurimbla" and one at the wheel, and the man on the look-out has to relieve the man at the wheel while he, in turn, goes on the look-out. An instance occurred on board this particular vessel, where a mast-head light went out. Owing to the insufficient number of hands on board, the lamp could not be re-lit until the change of watch. The light was out for two hours. That plainly shows an insufficiency in the number of hands.

987. *Chairman.*] Is it not a well-known rule that all steamers must carry mast-head lights? It is insisted upon by the regulations of the Marine Board.

988. Have the Steamship-owners Association declined to recognise the Seamen's Union? They have declined to recognise it since the month of July, 1890. We made efforts to get them to recognise the Union, so as to effect a settlement of the wages dispute in June, 1893. I and Mr. Guthrie made application to Mr. Burns with a view to arrange some settlement, but he declined to see us as officials of the Union, although he was quite willing to give us an interview as private citizens. I have recently had occasion

occasion to write numerous letters to the Steamship Owners' Association. In some cases they have merely acknowledged the receipt of the letters, and in other cases have ignored them. Mr. S. Smith.
3 April, 1894.

989. Have you ever made any representations to them about boycotting? Yes; I wrote to the Adelaide Steamship Company and to the A.U.S.N. Company in Brisbane, also to the North Coast Steamship Company, the Illawarra Company, and the Newcastle Company. I hand in a copy of the communication and the replies received from two companies—the Adelaide Steamship Company and the A.U.S.N. Company. The others did not acknowledge the communication. [*Vide Appendix D.*]

990. What is the present rate of wages? Fireman receive £7 a month, sailors £5 per month, donkeymen, boatswains, and lamp-trimmers, £8 per month. There is a £2 reduction.

991. Do you think those wages sufficient to maintain a man and his family? I think they are quite inadequate.

992. Does the system of payment of wages give satisfaction? No; the seamen consider the system a very cruel one. It causes much hardship to themselves and families. The present system of signing men on for six months' articles, with the stipulation that they are to be on board for six weeks before they receive one month's wages, has worked very badly. If a vessel should arrive in Sydney, and be ready to go to sea again the day previous to the expiry of the six weeks—and that often happens—nine weeks would elapse before a man would receive one month's pay. A man may have been out of work for six and nine months, and may have his wife and family turned out of home, and his effects sold off before he gets paid. Persons will not extend them much consideration, because they cannot understand how it is that a man should be at work so long without receiving any pay. They do not believe that the man has not received pay.

993. It would be quite possible to pay the hands weekly? It would be quite possible to pay the hands in the coasting trade weekly and those in the intercolonial trade monthly. Some men on board the "Meinderry" have been working two months without wages, and have been practically living on charity. That is owing to the charterer going insolvent, and the owner trying to bluff the crew out of their wages. I know of a case where a man's ships' articles have been up since the 28th March, and he is only expecting to be paid this afternoon, five days afterwards. The Act states distinctly that the men must be paid within two days of the termination of their agreement.

THURSDAY, 5 APRIL, 1894.

Present:—

MR. DAVIS,

MR. MOLESWORTH,

MR. J. D. FITZGERALD,

MR. G. D. CLARK.

A. J. KELLY, ESQ., IN THE CHAIR.

Mr. Samuel Smith recalled and further examined:—

994. *Chairman.*] You promised at the last meeting of the Committee to hand in certain documents? I promised to produce the report of a prosecution in Victoria for the illegal supplying of seamen. I now hand it in. [*Vide Appendix E 1.*] I also produce a copy of the opinion of the Crown Law Officers of the United Kingdom as to the illegality of the Free Maritime Labour Bureaus. [*Vide Appendix E 2.*] I produce also a copy of a letter forwarded to the Secretary for Finance and Trade of New South Wales, directing his attention to the infractions of the shipping law. [*Vide Appendix E 3.*] It had been denied that men had been carried to sea who had not been shipped, or who had not in their possession licenses or discharges. We have proved that such things were done by the prosecutions we instituted in the Water Police Court. We obtained a conviction against the captain of the "Victorian" among others. I also hand in a copy of a report of the prosecution of that captain. [*Vide Appendix E 4.*] With regard to the general question of crimping, I hand in a copy of a letter sent by the Secretary of the British Seamen's Union to the President of the Board of Trade. [*Vide Appendix E 5.*] In connection with the supply of seamen who have not been to sea before. I produce a copy of a license to ship issued by the Shipping Master of New South Wales to Otto Herman. [*Vide Appendix E 6.*] It would appear that Herman had not been to sea for twenty years. I produce also a report by the Shipping Master with reference to the indiscriminate issue of permits. [*Vide Appendix E 7.*] In connection with the practice of shanghaiing in Melbourne, I produce a copy of a report of a prosecution which took place in Victoria. [*Vide Appendix E 8.*] I also hand in a report of a deputation which waited upon our Colonial Treasurer in connection with the indiscriminate issue of permits. [*Vide Appendix E 9.*] The last document I have to hand in is a schedule of the amendments which I suggest should be made in the Seamen's Law Consolidation Act. [*Vide Appendix E 10.*]

995. *Mr. G. D. Clark.*] Mr. Curry stated distinctly and emphatically in his evidence that no questions were put to applicants for work as to whether they were Unionists or non-Unionists, do you think that statement is correct? That would be quite correct. They would not ask any man whether he was a Unionist, they would ask him his name, and then refer to their list. I have mentioned to you one instance in which he accused the man of being a Unionist, and said that that was the reason he would not give him a job. The man's name was Olsen.

996. Have you any knowledge of the law relating to the examination of masters' or mates' certificates? No personal knowledge. I was examined myself for a third-class engineer's certificate. I have a certificate of competency from the Marine Board of New South Wales. I received it in 1885.

997. Are you aware that when a man is examined for a mate's certificate it is necessary that he should have been in the Colony three years? That is according to the regulations.

998. It does not mean that the man must have been three years in colonial ships. It means that he must have been resident in the Colony for that time? Yes.

999. Do you not think the law ought to be so altered that in the event of a man being able to show that he has served at sea, and is qualified to pass the Marine Board ought to examine him? I consider that any man who can show servitude in British ships should be entitled to be examined for his certificate.

1000. *Chairman.*] You are of opinion that the Marine Board should be reconstructed? I think so. I am of opinion that representation should be given to the seamen.

1001. I suppose you are also of opinion that the Marine Board should appoint an inspector to look after the interests of the seamen? Yes.

1002.

Mr. S. Smith. 1002. *Mr. Molesworth.*] Is there not a water bailiff, and is it not his duty to look after their interests? No. It is a most difficult thing to know in the first place who are inspectors, and then again, who should carry out certain functions. That is my chief reason for the recommendation I have made for defining more particularly the duties of the Shipping Master. I am personally acquainted with a case in which the captain was disinclined to proceed to sea. He was at a loss to know to whom he could apply for assistance. He knew that he had incompetent men on board, and he requested me, as a favour, to go and shake up the Marine Board inspectors. I could not get an inspector that day. I may mention that this captain, I refer to the captain of the s.s. "Tweed," was provided with the men by Mr. Currie, and he was told that if he did not proceed to sea with the men with whom he had been supplied he would find the consequences unpleasant. Two of the men sent down to him had no licenses to ship, and had had no previous experience at sea. They had been engaged by Mr. Currie as firemen. The captain said he thought they were incompetent, and he wished to know whether if an accident occurred outside at sea, he would be held responsible. He was informed that he would be responsible himself if any accidents occurred, and that there would be a possibility of his certificate being suspended. The captain said he had no intention of proceeding to sea unless he had competent men, but Mr. Currie told him that if he did not go he would have him blacklisted throughout the whole of the steamship-owners of Australia. But for the action which was taken by the Seamen's Union, the captain would have been compelled to go to sea with those incompetent men who admitted in their evidence at the Court, that they had had no experience at sea. Two of them made that admission at the Water Police Court.

THURSDAY, 12 APRIL, 1894.

Present:

MR. G. D. CLARK, | MR. DAVIS,
MR. J. D. FITZGERALD.

E. W. MOLESWORTH, Esq., IN THE CHAIR.

Mr. Samuel Smith recalled and further examined:—

Mr. S. Smith. 1003. *Chairman.*] I understand that one of the principal objections you have to the present shipping law is that there is no definite provision as to the number of men to be carried on a vessel? That is one of my objections. I think there should be some regulation as to the number of men to be carried.

12 April 1894. 1004. Do you think the list you handed in the other day showing the number of men to be carried is likely to be generally acceptable? I think it would meet with general approval.

1005. Another of your objections to the present law is that men are shipped on board vessels instead of at the Shipping Office? That is another objection.

1006. What special advantage would accrue to the men from shipping at the Shipping Office at all times? An opportunity would be afforded them of having the articles explained. That is not now done. It is only when a disagreement arises as a rule that the men discover that something to which they have objected is in accordance with their agreement. We have had several instances of that kind in the Police Court. Even captains in some cases have said that they thought they were doing right and that they did not know that the law prevented them from doing certain things.

1007. Take the case of a steamer coming in after Shipping Office hours and having to leave again the same night. How would you deal with a case of that kind? I have seldom known of a vessel of any size coming in after Shipping Office hours and going out again the same night.

1008. I am speaking of cases of emergency. A ship might come into port after the Shipping Office had closed and might have to leave again before the office opened. How would you deal with an emergency of that kind? I would give power under certain circumstances for the Shipping Master or his deputy to go on board the vessel.

1009. Are not the articles always read over to the sailors before they sign? In many instances they are not. Men are sometimes called up to sign in the midst of their work or while they are on watch, and are told in a very rough fashion to sign their names.

1010. Has not every man a right to demand that the articles should be read to him? Yes. But it often occurs that if a man shows a desire to have the articles properly explained to him, he will be told that he is not wanted. That happens even when the Shipping Master is on board, and it is another reason why I think the men should be invariably taken to the Shipping Office to sign on. In some of the steamers the cabin in which the articles are signed is so small that scarcely any of the men can get inside, and they have to hang round about the door.

1011. Would not that overcrowding be intensified if the men were all put into one room at the Shipping Office? Well, the practice is to take the whole of the firemen in the one batch, the whole of the A.B.'s in another, and then the stewards and cooks. During a late prosecution many of the men said that they had not heard the articles read.

1012. Do you think it is equally necessary that discharges should take place at the Shipping Office? Yes; because in discharging the men frequently have to make complaints, and if the discharge took place at the Shipping Office the dispute could be immediately settled by reference to the Shipping Master.

1013. Another point you raised in your evidence referred to the qualification of the men who were granted permits to ship? Yes; the seamen think there should be a Rating Act, and that no man should be furnished with a license to ship, or should be put in possession of an A.B.'s discharge, unless he has served a certain time at sea as a sailor. We think also that men who are rated as firemen should also have served a certain time at sea. In many cases men are put on board ship as firemen who have not previously served in that capacity; they have not even served as trimmers.

1014. I suppose your remark applies only to firemen and A.B.'s. You would not apply so strict a regulation to the lower grades? We think, for instance, that a man should serve in the capacity of trimmer before he is rated as a fireman.

1015. But the men must make a beginning somewhere? Let the firemen commence as trimmers, by all means. If a man has never been to sea before, he should be entered on a ship's articles as a trimmer.

1016. You see no objection to men shipping as trimmers who have not been to sea before? No.

1017.

1017. I suppose you would not apply the regulation either to ordinary seamen? No; I think you will find the rating liberal enough. If, for instance, a man could show that he has been at the work a certain time on shore, and has six months' service as a trimmer at sea, he would be allowed to rank as a fireman. If a man has had no previous experience, it is considered that he should be twelve months at sea as trimmer before he ranks as a fireman. Mr. S. Smith.
12 April, 1894.

1018. Do you not think that the shipping and paying off of crews at the Shipping Office, if insisted on, would cause considerable inconvenience to the shipping trade? I do not think so. I, myself, for many years, was in the habit of going to the Shipping Office to sign off and on.

1019. *M. G. D. Clark.*] Do you know who drew up the schedule you have handed in, referring to the number of men to be employed on vessels? It is identical with the schedule submitted to the British House of Commons, and it is based upon information supplied to the General Secretary of the British Seamen's Union, Mr. Wilson, by the members of the Union.

1020. I see that it is practically proposed to carry the same number of seamen per ton on steamers as on sailing vessels. I thought it was generally understood that a larger proportion of A.B.'s are required upon a sailing vessel? Not with the modern appliances.

1021. *Mr. Davis.*] Do you think the seamen are at present satisfied with the constitution of the Marine Board? I think the seamen are entirely in accord with the Bill which you yourself have introduced in the Assembly. We think that the representation of seamen on the Board provided by the Bill would be fair.

1022. Are the seamen at the present time satisfied with the manner in which ships are inspected before going to sea? There is a considerable amount of dissatisfaction; we find a difficulty in knowing who are the Inspectors to whom we should appeal when there is any complaint to make. The men, for instance, may often desire to complain of the ventilation, of the position of the water-closets, of the paint-locker, and things of that kind.

1023. Have they not often complained of deck-loading? Yes; it is the source of many complaints at the present time. Men have informed me again and again of the crowded condition, for instance, of the decks of some of the North Coast Company's boats. These boats have been carrying railway locomotives and railway plant generally. They carry passengers, and the decks are so crowded that it is with great difficulty they can move about.

1024. It is a feature of deck loading, I believe, that it is only put on board just prior to the ship leaving? It is put on board within the last hour as a rule.

1025. Consequently it would leave the men only a short time in which to make a complaint? There is really no opportunity at all for the men to lodge a complaint. In fact, the hours of deck loading are, as a rule, after the closing of the Custom-house, when the Marine Board officials have gone.

1026. Then you think that someone should be appointed an Inspector who would make it his business to be down on the wharfs of the various Companies as nearly as possible at sailing time? I think there should be a sufficient number of Inspectors to permit of officers being on duty there night and day.

1027. At the present time there is only one? Yes. I may mention that many vessels leave between the hours 6 and 10 at night, and come in between the hours of 4 and 8 in the morning, with these deck cargoes on board. They frequently carry live stock, and are sometimes in a terribly crowded condition.

1028. And there is no officer to carry out an inspection at that hour? No. To show the necessity for an alteration, or more strict observance of the law, I would mention the case of the "Kanalooka." Twenty tons of coal were taken out of the general cargo, and placed on deck, and what was not washed overboard had to be thrown overboard. The same state of things exists on many colliers coming into this port. They often leave the jetties without having their hatches on.

1029. Is it not a common occurrence for colliers to arrive in this port late at night in an overloaded condition, and to discharge some of their cargo alongside a ship down the harbour? Yes.

1030. To carry out the work of inspection properly, it would be necessary to place a steam launch at the disposal of inspectors, at night-time at all events, in order that they might take a run down the harbour to see the condition in which the colliers come into port? Yes; large colliers come in from the southern jetties between the hours of 6 o'clock and midnight.

1031. You have already given reasons for your opinion that seamen should not be paid off on board ship? Yes.

1032. Have cases ever come under your notice where men have been paid off on board, and where the ship has put to sea again without leaving discharges for the men? That has repeatedly happened. We took proceedings against one captain, but we were nonsuited.

1033. Is not the circumstance of the men being left without discharges generally attributable to an oversight on the part of the purser, who is deputed to leave them at the Shipping Office, and who may perhaps forget to do so? In the case of some of the larger vessels carrying a purser it is sometimes owing to the neglect of that officer; but in many instances the captain himself is at fault—he either cannot find time to go to the Shipping Office or neglects to go there.

1034. You think that the paying of the men off at the Shipping Office would do away with the present risk of their being left behind with no means of obtaining fresh employment? Yes. The men are sometimes greatly inconvenienced through not getting their discharges. They often lose the chance of obtaining other positions. They have to wait in some instances for their discharges as long as three weeks.

1035. Is there not a provision of the Act under which the men's wages are due from the time of their signing on until their discharge? There is a provision in the law to meet the case—that is, discretionary power is left with the magistrate to award the men compensation. It invariably happens, however, that they are allowed a very small sum.

1036. Has it ever come under your notice that the men have only been allowed £3 for four or five weeks? That has happened in several instances. We have the depositions in a case where the chief officer engaged a man in place of another who he said had left the ship, and whom he desired to get rid of. As a matter of fact, the man was still on board. He was carried on board the vessel as far as Cooktown, passed three ports, when he was taken ashore as a stowaway; he had never been discharged. The man was detained at Cooktown until the return of the vessel from the Gulf, when the captain, officers, and some of the crew were cited to appear at Court. The case was eventually dismissed. In the meantime the unfortunate man was left penniless ashore because the ship cleared on the following day. If

the

Mr. S. Smith. the man had been taken to the Shipping Office he would have declined to go until he got what his articles permitted him to have—that is, a free passage back to the port of discharge—which was Sydney. The man would have been perfectly satisfied with that. That is one of many cases where men would not have been left in a helpless condition had it been necessary to obtain discharges at the Shipping Office. The Shipping Master would doubtless have seen that the terms of the agreement were strictly carried out.

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1037. Is it not a fact that men of the Royal Navy have to pass examinations before they receive their A.B. certificate? Yes.

1038. Also before they are made full stokers and artificers? Yes.

1039. You think the general public are aware of the incompetence of the crews which have been carried on different vessels on this coast at various times? During the strikes of 1890 and 1893, the matter was brought prominently under the notice of the travelling public. Some persons who were travelling in vessels at that time have voluntarily given evidence on the subject. I have extracts from newspapers, showing cases where persons were over-carried in consequence of the incompetency of the crews. The extract I now hand in refers to a case which occurred on board the steamer "Corrinna" [*vide Appendix F. 1.*] I ought to have explained that it is necessary in many cases for the men to take a line ashore in a boat. In some of the cases to which I refer the men were not able to do so, and, in consequence, the vessel had to proceed without calling. I should like to hand in a letter from a passenger who travelled in the "Elingamite" to Melbourne during the strike in 1893, in which he speaks of the incompetency of the crew. [*Vide Appendix F. 2.*]

1040. Are you not of the opinion that as you did everything in your power, under the circumstances, to warn the travelling public, the authorities ought to have supplemented your efforts by suspending the passenger certificates of the vessels which were inefficiently manned? Yes; I think the Marine Board authorities were exceedingly lax in the supervision exercised in connection with vessels carrying passengers from this port. There was abundance of proof that, although all the necessary life-saving appliances insisted upon by the Board were on the vessels, it would have been absolutely useless material in the hands of the crew had they been required to use it in case of casualty.

1041. Do you remember the loss of the steamer "Hilda"? Yes.

1042. Do you remember it transpiring in the course of the evidence taken before the Marine Board in that case, that the man who was at the helm had only been eighteen months at sea, and that prior to joining the ship he had been something like ten years ashore? Yes. One of the witnesses admitted that.

1043. Was it not discovered that the disaster happened within the space of about ten or fifteen minutes, while the captain had gone down below to obey a call of nature? Yes; the accident was traced to the captain temporarily leaving the bridge.

1044. When the captain came up again the man had got the vessel right round, and was steering her onto the reef off Botany Heads? Yes.

1045. You remember that the matter was commented upon pretty strongly in shipping circles at the time? Yes.

1046. Do you not think a grave injustice was done to the master in the suspension of his certificate? Yes; I think he was in no way to blame.

1047. Do you not think, on the other hand, that the authorities were to blame for allowing the crew of the ship to sign in the capacities they did? Yes; I think considerable negligence was displayed in allowing such men to undertake such duties.

1048. You are aware also that the Marine Board sheltered themselves under the excuse that if a master is willing to take a crew to sea, and consider them efficient, they cannot object? That is the reply they invariably give when their attention is called to the case of a captain putting to sea with an incompetent crew.

1049. Is it not also a fact that the master who complained of the incompetency of a crew on certain occasions would simply be told to make way for someone else? My experience is that captains who have been desirous at times of getting rid of incompetent men have been subject to dismissal.

1050. With regard to mail contracts, I believe the seamen consider that there ought to be a clause in all mail contracts specially providing against the employment of Asiatic crews? Yes. There is a very strong feeling among the seamen in regard to the subsidising the vessels manned by coloured labour.

1051. I suppose in case of a casualty these coloured crews would almost invariably prove incompetent? Yes.

1052. Have any cases come under your notice in which the coloured crew of a vessel, in a position of danger, have failed lamentably in the execution of their duty? Yes; one case to which my attention was directed was that of the P. and O. steamer "Tasmania," in the Mediterranean. When the crew were called upon to man the boats, they failed to execute the order, and were seemingly more desirous of looking after their own safety than that of the passengers.

1053. There was no discipline whatever? No. The men showed they had no idea of what was expected of them.

1054. Do you remember also the case of the "Quetta," in the Torres Straits? In the case of the "Quetta" also, there was a great want of discipline.

1055. And partly in consequence of that many lives were lost? Undoubtedly.

1056. You have probably heard of many cases of shipwreck in various parts of the world where coloured crews have acted in a similar way? Yes. They have always conducted themselves in the most cowardly manner. Some of the steamers in the China trade are manned by the same incompetent crews. I have had opportunities in Queensland of observing the way in which they performed their duties. I have often been struck with the utter incompetence of the coloured crews on the British India Company's steamers. I believe the company has since then discontinued employing them.

1057. You think the contemplated action of the various Postmasters-General of these colonies, recommending to the Imperial authorities the exclusive employment of European crews on mail steamers, is perfectly right? Yes. I think something of the kind is very much required.

THURSDAY, 26 APRIL, 1894.

Present:—

Mr. DAVIS.

Mr. J. D. FITZGERALD.

Mr. MOLESWORTH.

A. J. KELLY, ESQ., IN THE CHAIR.

Mr. Samuel Smith recalled and further examined:—

1058. *Chairman.*] You desire to hand in Mr. Justice Williams' summing up in the case of the prosecution of Captain Dyson, the manager of the Steamship Owners' Free Labour Bureau in Melbourne? Yes.
[*Vide Appendix G.*]

Mr.
S. Smith.

26 April, 1894.

Mr. Thomas Robert Allt called in, sworn, and examined:—

1059. *Chairman.*] I believe you are the chairman of the Steamship Owners' Association? I am.
1060. I believe you are also the chairman of the North Coast Steam Navigation Co.? Yes.
1061. I suppose you have a good knowledge of the shipping of the Colony and the operation of the shipping laws? A fair general knowledge.
1062. I suppose you are aware that this Committee has been appointed to institute an inquiry with a view to an amendment of the shipping laws? I have heard it stated that that is the case.
1063. Can you make any suggestion which in your opinion would facilitate the work of the Committee? None.
1064. You do not think that the law requires amending in any way? I am not exactly in a position to give you information upon that point, but the secretary of the Association is present and he might be able to do so.
1065. I desire to ask you a question in reference to a matter which probably came under your notice in your capacity of chairman of the North Coast Steam Navigation Co. I desire to know whether it is a fact that your company had an engineer out collecting men during the late strike? I could not say.
1066. *Mr. J. D. Fitzgerald.*] Will you swear that during the late strike your company had not an agent collecting sailors and engineers? I could not swear one way or the other. The whole of that portion of the business is left to the management of another man. They are details with which I should not in the ordinary course of things be acquainted.
1067. *Chairman.*] What is the name of the gentleman to whom you leave this business? The marine superintendent, Mr. Richmond.
1068. Do you think he would be in a better position to give us these details? He could certainly give you the details better than I could do. I am merely the governing head.
1069. You would advise the Committee to examine this gentleman with reference to the details? Well, all I can say is, that if there be any information to be obtained in reference to the company, he would be better able to give it than I should be. A member of the Committee mentioned engineers just now. With regard to engineers, I may say, that only yesterday an engineer applied to me to give him a berth, and in that case I put on the man myself.
1070. Have the Board of your company ever given instructions with reference to the employment of certain men? The Board would give no instructions of that kind at all.
1071. As chairman of the Board of directors of the company, you must be acquainted with the fact that men who left your ships during the late strike and who obtained re-employment upon them, were, on being recognised by Mr. Richmond, put off again? I cannot speak as to that.
1072. Were no instructions given to that effect? No; I can only say this, that if any of those men who left my employ without giving me one moment's notice got back into my employ, and the fact came to my knowledge, I should give instructions that I would rather be without the men who had left me in the lurch.
1073. The case to which I refer happened only three weeks ago? I can only repeat that as an employer, I would not again employ if I could help it a man who had left one of my ship's without a moment's notice, and in so doing had left me in the lurch.
1074. But you would not be inclined to impose any hardship upon a man? I would not, but naturally I should be disinclined to give employment again to the men I describe. As regards the men who have left me after giving me twenty-four hours' notice, I have employed them again.
1075. I suppose you have not studied the shipping laws of the Colony very much? I cannot say that I have closely studied the shipping laws. I look at them, of course, in the same way that I should look at many other things in connection with shipping, but I cannot say that I have studied them, and I should be exceedingly sorry to argue with anyone upon any point in the law.
1076. I suppose you are aware that there is a provision in the law to the effect that incompetent men shall not be employed at sea? I have no doubt there is something of that kind. But I do not think any shipowner would employ an incompetent man if he were aware of his incompetence.
1077. I merely asked the question with a view to bring under your notice the fact that the law provides a penalty for the employment of incompetent men? In all cases of that kind I should be guided by my officers. It is not at all likely that I should employ any man unless I knew him to be competent. I would not risk my ships in that way.
1078. You have not, as chairman of your Board of directors, given instructions that the men for your ships shall be engaged only through the Maritime Free Labour Bureau? I cannot call to mind that I have. But, as a matter of fact, our men are engaged through the labour bureau.
1079. What does your company contribute towards the expenses of the bureau? I am not aware that we contribute 1d.
1080. From what fund is the institution maintained then;—I suppose the Amalgamated Steamship-owners must pay the manager's salary, for instance? I know nothing at all about that. That is a detail with which I am not acquainted.
1081. As chairman of the Association it has never been brought under your notice? No.
1082. You believe that the bureau is a good system of employing men? I do.

Mr. T. R.
Allt.

26 April, 1894.

- Mr. T. R. Allt.
26 April, 1894.
1083. I suppose that every man upon your ships is employed in the ordinary way through the bureau? I do not know that that is necessarily the case. For my own part I do not care whom we employ, so long as they are good men. I have no likes or dislikes.
1084. I suppose your company always carries a full complement of men on its ships? I can only say that, as far as my knowledge goes, the whole of our ships are sufficiently manned with competent men.
1085. With competent men? Yes; with men who give every satisfaction.
1086. I suppose you are not aware of the fact that there were men engaged on board your ships during the late strike who were young farmers from the northern rivers? At all times one is liable to get indifferent men. It is impossible for an employer to invariably secure the services of first-class men.
1087. Do you think that the man who has been following the plough is competent to jump on board a ship, and at a moment's notice carry out the duties of a seaman on that ship? I do not say that you could not get better men than those to whom you refer, but you might get many worse men. A good strong able man, even from the plough, would be quite able to do work on board a steamer.
1088. You do not mean to say that a man coming fresh from the plough could take a "turn" at the wheel, for instance? I do not say that he could steer a ship; but you must remember that we do not usually take men from the plough.
1089. Still, you have said in effect that almost any sort of man is good enough to do work on a steamer? If I said that I think I ought to correct the remark by making this explanation. What I wished to convey was this: that sailors on board steamers at the present day are in a totally different position from sailors of twenty or thirty years ago, when it was necessary that they should have a thorough knowledge of sails and ropes. The work on board steamers nowadays is, with the single exception of steering, more labourer's work than sailor's work.
1090. Have you ever come into contact with any number of ordinary labouring men who were competent to do even the labouring work of which you speak on board a ship without having previously gone to sea? I am afraid you must subpoena persons better able to express an opinion on such a point than I am. I am not the captain of a ship and I cannot answer questions of that kind. I am not competent to answer them.
1091. *Mr. J. D. FitzGerald.*] You are the chairman of the Steamship Owners' Association? Yes.
1092. That Association has established a labour bureau in Clarence-street? Yes.
1093. Of which Mr. William Currie is the manager? Yes.
1094. Who appointed him? Although I am chairman of the Association I could not say at this moment, without reference to the secretary, who appointed him. I did not appoint him anyhow.
1095. Is he responsible to you for all his acts? I do not know about that.
1096. It seems somewhat extraordinary that you, as chairman of such a large and important body as the Steamship Owners' Association, should not be acquainted with all these matters in connection with the Free Maritime Labour Bureau? A great many of the details concerning which the Committee apparently want information are left to the manager, and we are perfectly satisfied.
1097. Do you know whether he has ever found it necessary to ask permission of the Steamship Owners' Association to give evidence before this Committee on oath? He has never made the application to me. I have had no communication with him on that subject.
1098. Do you know whether he applied to anyone for permission? If he communicated with anyone on the subject, he would probably communicate with the secretary.
1099. But you are Mr. Currie's employer? To a certain extent I am.
1100. And as one of his employers, you are responsible for most of his acts? I do not consider that I am responsible for nearly all the acts of Mr. Currie; but, so far as the business he does in connection with the Association is concerned, of course I should be to a certain extent responsible.
1101. Do you instruct him how to act? I do not.
1102. Does your Association? No.
1103. Does not your Association supply the funds for the carrying on of the bureau? No funds are supplied to my knowledge, but you would probably be able to get more information upon that point from the secretary himself.
1104. But when we examine your employees they tell us they are not allowed to give us the information we require. Mr. Currie, for instance, said so. He said that without the permission of the officers of the Association, he could not give us information, and that he thought it would be better to get the information we required direct from you. We think that you, as chairman of this important Association, ought certainly to know something of its workings? Although I occupy the position of chairman I do not interfere at all with its working, so far as the details of which you speak are concerned.
1105. How many steamers are owned by the members of the Steamship Owners' Association? That I could not tell you. I should probably be deemed very inquisitive if I were to inquire from each steamship owner how many ships belonged to him.
1106. Do you remember when the bureau was first established? Yes; I think I do.
1107. When was it? I do not quite remember the year, but I may say that the bureau was established in order that we might get men when we wanted them.
1108. What incident out of the ordinary run of things had happened to cause the institution of the bureau? A strike; that was the origin of the bureau.
1109. I suppose that in reality the bureau was established with a view to the employment of non-union men? I know nothing of the kind; the bureau was established with a view to the employment of the men we required. We did not care whether they were union men or non-union men. We wanted men.
1110. Do I understand you to say that you did not care whether the men belonged to unions or not? Undoubtedly.
1111. But you have taken measures by which men who are unionists are not employed on your ships? I have taken no measures against the employment of unionists.
1112. You said in a previous part of your evidence that certain men who had left your ships suddenly during the recent strike would not be again employed if you knew them? If we could get others in their places, certainly not. In the ordinary way, however, I do not care whether the men are unionists or non-unionists.
1113. But you would only employ the men who had left your ships provided you could not help it? Certainly. All those who gave me fair warning, even if it were only twelve or twenty-four hours—sufficient time to give me an opportunity of re-manning my ships—I would employ again. 1114.

1114. Did you during the late maritime strike hear the allegation made against certain shipowners that they were sending ships to sea undermanned? That has not come under my notice.

1115. Do you remember any publications being issued by the Seamen's Union at the time? I did not take much notice of them, to tell you the truth.

1116. Were any of the ships of the company with which you are connected undermanned? Not that I am aware of.

1117. Did any accidents occur? No.

1118. Did any reports come under your notice from your officers as to the incompetency of certain men who were shipped? None.

1119. I suppose if there were any such reports they would come before you? Yes.

1120. A matter of detail like that? It would be reported to me.

1121. I thought details of this kind were left to the secretary? In the ordinary way they are; but the undermanning of a ship is a very important matter.

1122. You say that the Steamship Owners' Association established the maritime bureau for the purpose of supplying men to their ships? For the purpose of supplying labour all round.

1123. Including wharf labourers? Supplying labour all round. I do not care to particularise any class of labour. What we desired to do was to get men when we wanted them.

1124. Did you issue any instructions to Mr. Currie? Not that I am aware of. I may tell you that I have only been chairman of the Association two months.

1125. I have been examining you under the impression that you had occupied that position for a much longer period? I have only recently occupied the position, and although my predecessors in office, Mr. Willis or Mr. Burns, might be able to give you information upon some of the points you have suggested, I am quite unable to do so.

1126. *Mr. Davis.*] Although you have only recently occupied the position of chairman, you have been a member of the Steamship Owners' Association for a number of years? Yes.

1127. In the first instance you represented the Clarence and Richmond River Steamship Owners? Yes.

1128. And subsequently the North Coast Steam Navigation Co.? Yes.

1129. Did not anything transpire at the Board meeting of the Steamship Owners' Association, when you were acting as a representative of the companies to which I have referred, with regard to the employment of Mr. Currie at the bureau? What took place at the Board meetings would, I presume, be considered a private matter. I presume I shall not be expected to answer a matter of that kind.

1130. You are chairman of directors of a company, of which Mr. See, the Colonial Treasurer, is the managing director? Yes.

1131. But you say you have no suggestions to make with regard to an amendment of the shipping law? No.

1132. Have you never had any conversation with your co-partner, Mr. See, with regard to amendments of the law? No; having regard to his position, I should not think of asking him questions bearing upon that matter.

1133. Not as president of the Steamship Owners' Association? No; Mr. See being a co-director of mine, I should not do so.

1134. Your vessels trading to the rivers all hold passengers' certificates? Taking them as a whole, they do.

1135. And they all undergo, periodically, an overhaul in dock? Yes; our ships are in thoroughly good order.

1136. You are aware that Mr. See intends to propose an amendment of the law, under which no steamships will be exempt from overhaul? I do not know about that, but all that I can say is that the whole of our steamers are overhauled regularly.

1137. You know that the Act now provides that only those vessels carrying Marine Board passengers' certificates need be overhauled;—do you not think, as president of the Steamship Owners' Association, that all the steamers trading on this coast should be subject to periodical overhaul and inspection? Undoubtedly; that is only fair and right.

1138. You are not a practical seaman? No.

1139. You said a short time ago, in reply to the Chairman, that any man almost was able to undertake work on board a steamer with the exception of steering? In the ordinary way. You do not require a really tip-top man for a sailor on board a steamer now-a-days. You must remember that there is not the same amount of work to do on steamers as on sailing vessels.

1140. But you know that the unexpected often happens at sea? Yes.

1141. When you are manning a vessel it is not safe to man her with a view only to ordinary conditions. Immediately one of your steamers gets outside the Sydney Heads she is liable to encounter heavy weather? That is so.

1142. And your steamers have also at times to cross bars which are very dangerous? Yes.

1143. In view of a vessel, one of your steamers, encountering a gale of wind, or having to cross one of these dangerous bars carrying passengers, do you not think that men knowing something more about the sea than an ordinary ploughman would know should be engaged for service? I do not think so.

1144. Would you like to trust your life on board a steamer, the whole of the crew of which were composed of ploughmen, or any shore labourers who would have no idea of getting out a lifeboat in case of an emergency? It is not fair to assume that the whole of the men would be ploughmen.

1145. Of course we know that there would be a captain, mate, and second mate? Yes; but excepting the officers, the whole of the crew would not be ploughmen.

1146. Is it not necessary, even in the present day, that those who are engaged for service on board steamers should know how to run out a boat? Everything depends upon what you would consider a good seaman.

1147. Are there no conditions through which your vessels would have to pass in the course of twelve months in which a number of passengers would be seriously imperilled in the event of accident, providing a crew of proper seamen were not generally carried? I think there should be good men on board at all times; but I do not think it is necessary to have an entire crew of highly competent seamen.

1148. What proportion of competent seamen do you think ought to be carried? At least one-half.

1149. *Chairman.*] Is it within your knowledge that since the establishment of the Maritime Free Labour Bureau, Mr. Currie, who is employed by your Board, has received his salary from any member of it? I could not possibly answer that question.

1150. *Mr. Molesworth.*] But I suppose you can tell the Committee definitely in whose employ Mr. Currie is? He is employed by the Steamship Owners' Association.

Mr.

Mr.
T. R. Alt.
26 April, 1894.

Mr. Arthur Benjamin Cockburn called in, sworn, and examined:—

Mr. A. B.
Cockburn.
26 April, 1894.

1151. *Chairman.*] You are Secretary to the Steamship Owners' Association? Yes.
1152. Have you been long in that position? Nearly four years.
1153. I suppose you have a fair knowledge of the shipping interest? Yes; but not so much in matters of detail as generally.
1154. Were you Secretary of the Association during the late maritime strike? Yes; I presume you refer to the strike of last year?
1155. Do you know if your Association has issued any instructions to Mr. Currie with regard to the employment of seamen and other maritime labour? The Association has issued instructions at various times to him relating to the applications he receives at the Bureau—that is, as to what he shall do with them.
1156. Is it a fact that he receives the whole of his instructions from the Steamship Owners' Association in writing? Not all. The most common course is for me to communicate to Mr. Currie what I know to be the wishes of the members of the Association as indicated to me at their meetings. It is very seldom that anything in the way of written instructions are given to Mr. Currie.
1157. Does he always carry the instructions out? So far as I am aware he does.
1158. To the satisfaction of the Association? Yes.
1159. Has your Association ever issued any instructions to Mr. Currie with reference to the securing of incompetent men to man your steamers at particular times? No.
1160. No such instructions have been given? We have never issued instructions to Mr. Currie to try to secure incompetent men.
1161. But you admit that the Association has issued instructions to him to secure men? Not to secure men; but he has been told that men have been required.
1162. Did the Board lay down no definite instructions as to the way in which Mr. Currie was to secure the men? No.
1163. It was optional with him where he obtained them from? Within certain lines.
1164. What are those lines? To keep within the law and do a fair thing. I do not mean to say that those lines have ever been specifically laid down for Mr. Currie's guidance; but we have never asked him to do anything that would involve an infraction of the law, so far as we understood it.
1165. I suppose you have a pretty good knowledge of the shipping laws? Not an intimate knowledge, but I have a general knowledge of them.
1166. You know that a penalty attaches to the offence of engaging men who are not properly authorised? I presume you refer to the 14th section of the Seamen's Laws Consolidation Act. I am quite aware of that.
1167. Then how do you get over the difficulty of Mr. Currie receiving instructions with reference to the engagement of the men? We say that to all intents and purposes Mr. Currie is a legally authorised person.
1168. I suppose you know of the prosecution of Captain Dyson, in Victoria, and of the result of it? Yes.
1169. Notwithstanding the result of that prosecution, you think that Mr. Currie has acted legally? Yes.
1170. That he has acted in accordance with the shipping law of New South Wales? Yes.
1171. Do you think a law which permits such a thing is justifiable? Quite.
1172. You approve of it? I do.
1173. You would not have it amended in any shape or form? I do not know that I am prepared to say that.
1174. We understand that Mr. Currie is actually engaged by the Steamship Owners' Association to carry out the specific duties I have indicated? He is engaged for a variety of purposes.
1175. I suppose he is in the employment of the Steamship Owners' Association? Unquestionably.
1176. And that he receives his salary from them? Unquestionably.
1177. I suppose the reason you employed Mr. Currie in this capacity was that he might carry out this part of the Act? I do not know that we had this part of the Act in view particularly when we employed Mr. Currie. We were in a difficulty, and we wanted to get over it. We selected the best man we could get for the purpose.
1178. If Mr. Currie was not in the employment of a steamship owner he would be liable under the law, would he not? According to your reading of it.
1179. According to my interpretation of the law he would be? According to other interpretations he would not. The law is susceptible of different interpretations.
1180. What persons would your Association be likely to employ to interpret the law? We have our solicitors, of course. But I do not know if they have interpreted the particular section to which we have been referring. I cannot remember for the moment whether they have done so or not.
1181. You yourself have a knowledge of the section? Yes. After consulting persons we thought capable of giving us advice we came to the conclusion that Mr. Currie's action is perfectly within the law.
1182. You are acquainted with the prosecution of Captain Dyson in Victoria? Yes.
1183. Did your Association ever get the Judge's decision in connection with that matter? Yes; I think I have it in my office, but I am not quite sure.
1184. I suppose that you are aware that Captain Dyson was not acting legally? I do not know about that. According to the view of the Judge he was not.
1185. Has any case ever been brought before the Court here by seamen in connection with the Maritime Labour Bureau? Yes.
1186. What was the case? The case of Maclean *versus* Thompson, in which Maclean, who was, as I understood, a trustee of the Seamen's Union, laid information against a man named Thompson, under section 14. In the trial of the case the management of the Bureau, or rather the operation of the Bureau, was to a certain extent involved. The decision of the Police Court being against Thompson, the case was taken on to the Full Court, where the decision of the Lower Court was reversed. This was in effect the Judges' decision: That if anyone had supplied men, it was Mr. Currie and not Thompson, and that as Mr. Currie was in the constant employ of the steamship owners, he was not liable under the Act. What the Judge said is perfectly consistent with our view of the matter, and I may mention that the decision of the Victorian Judge had not then been given.
1187. Can you suggest any amendment of the law which would be beneficial to the Association you represent? I cannot at this moment think of any particular amendment they would desire.

1188. You know, I suppose, that certain amendments of the shipping law have been suggested to us by Captain Hickson and Captain Eady? I have heard, incidentally, that certain amendments have been suggested; but I am not officially aware of them.

1189. You think that as far as the Association is concerned they would not desire any amendment of the law? It is not a burning question with us; still, at the same time, there are certain amendments of the shipping law we think very desirable.

1190. Would you be prepared to submit them to the Committee? I do not know that I am in a position to do so just now. The matter has been before us at various odd times, but nothing has seemed to be practicable, and the matter has been allowed to lapse. Of course, the views of the Association may change as time goes on, and I should not like to say that the views expressed by them two years ago, for instance, would hold good to-day. There are some matters in connection with which amendments have been suggested, which would have to be brought under the consideration of the Association again before I could say that the proposed amendments were still in accord with the views of our members. I will mention the matter to the Association, and will see whether there are any suggestions they would like to submit to the Committee.

1191. *Mr. Molesworth.*] If I understood you correctly, the Free Maritime Labour Bureau was instituted by the Steamship Owners' Association in order to supply them with men? To a certain extent; it was instituted to facilitate the supply of men.

1192. What first led to the institution of the Bureau? It grew out of the 1890 strike.

1193. I suppose you are aware that it is the practice in the intercolonial shipping to sign articles on board or at the wharf? Yes—in the case of ships registered in the Colony.

1194. Do you approve of that plan? I think it is a very good one, and a very convenient one, so far as it has come under my knowledge.

1195. Do I understand you to mean that it is convenient to the Steamship Owners' Association? To all concerned.

1196. You think it is equally convenient to the seamen? Yes; it prevents them from journeying up town. It often happens that there is very little time to spare, and as matters now stand, the men can go straight down on board and sign without further trouble.

1197. Have you at any time heard objections raised by the men to this system of signing on at the wharf or on board? I have never heard of any. I do not myself see what objection there can be to the practice.

1198. Would it cause any inconvenience to the Association, or the men employed by them, if it were made compulsory for all articles to be signed at the Shipping Office? I should think it would be very inconvenient in many cases.

1199. Could you give any instances? Well, it would be inconvenient in the case of men shipping, when a ship was on the point of departure. The Shipping Office might be closed, and a ship might want to get away late at night.

1200. Have you heard any complaints of men being left behind, without their discharges, in consequence of the present practice? I have occasionally heard of some inconvenience being caused to the men through the neglect of the master, but I understand that that is already provided for by the law.

1201. Have you heard of any difficulty arising through men being left ashore at any port without their wages? There are no instances that I can recall at this moment.

Mr. A. B.
Cockburn.
26 April, 1894.

OPERATION OF THE SHIPPING LAWS.

APPENDIX.

[To Evidence of Captain James Edie, Shipping Master.]

A 1.

Sir, I have the honor to request that you will be pleased to advise me upon the following question, viz. :—
 A vessel registered in the United Kingdom arrives in this port from London, and one clause in her articles reads thus, "The crew shall be deemed complete with twenty hands all told." While in port some of the crew desert, which reduces the number to (say) fifteen hands. Will I be justified in withholding the ship's clearance until the master makes up his crew to the number stated in the agreement?
 Shipping Master's Office, Sydney, 9 April, 1892.
 I have, &c.,
 J. EDIE,
 Shipping Master.

The Assistant Secretary, Marine Department, Board of Trade, London.

A 2.

Sir, I am directed by the Board of Trade to acknowledge the receipt of your letter of the 9th ultimo, and, in reply, to inform you that Shipping Masters have no power to refuse a vessel clearance because the contract with respect to the number of seamen to be carried, as expressed in the articles of agreement, is not adhered to.
 Board of Trade, Marine Department, London, S.W., 21 May, 1892.
 I am, &c.,
 GEORGE J. SWANSTON.

The Shipping Master, Sydney.

A 3.

Dear Sir, I was unable to get the names of the men who had been on "Phœbe," as they had all cleared from Bridge-street on Tuesday. I again tried yesterday, but could not find the boat. Will forward the names as soon as I get them.
 Maritime Labour Hall, 172, Princes-street, Sydney, 10 February, 1893.
 Yours, &c.,
 SAMUEL SMITH.

James Edie, Esq., Shipping Master.

A 4.

Sir, I have the honor to request that you will be pleased to obtain from the Crown Law Officers, for my guidance, an opinion as to who is the proper person to take action at law in case of infringement of the Act 27 Vic. No. 13.
 Shipping Master's Office, Sydney, 31 July, 1893.
 I have, &c.,
 J. EDIE,
 Shipping Master.

The Honorable the Colonial Treasurer.

Submitted.—J.K., 2/8/93. Approved.—J.S., 3/8/93. The Crown Solicitor.—J.K., 3/8/93. Crown Solicitor.—3/8/93. No. 654. Attorney-General, N.S.W., 5th August.

Subject:—Who is the proper person to take action at law in case of infringement of the Act 27 Vic. No. 13.

Sir, I have the honor to return herewith the papers relating to the above matter, which were forwarded to me from your Department on the 3rd day of August, 1893, and to state that I have submitted them to Mr. Solicitor-General O'Connor, a copy of whose advising thereon will be found below.
 Crown Solicitor's Office, Sydney, 24 August, 1893.
 I have, &c.,
 ERNEST A. SMITH
 Crown Solicitor.

The Under Secretary for Finance and Trade.

Copy of Opinion of the Honorable the Solicitor-General.

ANY person may take proceedings for the recovery of the penalties in question. Inasmuch, however, as it is the duty of Government to see that laws affecting public safety, as these shipping laws undoubtedly do, are strictly observed, the proceedings should, in my opinion, be taken by the Shipping Master.

23rd August, 1893.

R. E. O'CONNOR,
Solicitor-General.

The papers might now be referred for the information of the Shipping Master.—J.K., 25/8/93. Approved.—J.S., 25/8/93. The Shipping Master.—J.K., 26/8/93.

A 5.

No. 0500	No. 0500.	LICENSE TO SHIP.
Name	[Seal.] I HEREBY certify that	
Last Ship or Employment	has license from me to Ship	
Date	Registered at the Shipping Office, Sydney, this	day of 189
(Signature of Licensee)		Shipping Master.
		No.

A 6.

No. 10900. MUTUAL RELEASE. No. 10900. FORM OF MUTUAL RELEASE. Master of the Ship
 [Seal.] THE undersigned and
 Name of Ship a Seaman recently serving on board the same, hereby declare that the Agree-
 Port of Registry ment entered into between them, from the day of 18 ,
 Name of Master has been duly fulfilled on both sides, and that all wages earned by the said
 Name of Seaman have been fully paid or satisfied, and that he has been and is fully discharged from
 Date of Release his said Service : And the said parties hereto do hereby mutually acquit and
 Witness to Signatures or Marks release each other from all further claim under the said Agreement, or in any
 other respect arising out of the Engagement thereby made.
 In witness whereof, we have hereto set our Hands, this
 day of 18 .
 (Signed) Master.
 Witness Shipping Master. Seaman

A 7.

SHIPPING MASTER'S OFFICE. No. 34,994. £ 18 .
 ON receiving this Cheque I agree to sail THREE days after the leaves
 in the or his order, the sum of please pay to
 and to be on board within on advance, and in part of his wages on an intended Voyage from
 hours from the date hereof. agreement with provided he sails in the abovenamed Vessel as per
 18 . To

A 8.

CERTIFICATE granted to Masters or Owners of Vessels previous to Clearing Outwards, in accordance with the "Navigation Law Amendment Act, 1881."

I, THE undersigned, hereby certify that Master of the has produced at the Shipping Office the following Certificates :—

	No. Com.	No. Service.	Port.
Master			
Mate			
2nd Mate			
1st Engineer			
2nd Engineer			

Shipping Office, day of 18 . Shipping Master.

A 9.

CERTIFICATE granted to Commanders of Vessels previous to Clearing Outwards, in accordance with the Regulations issued by the Collector of Customs at Sydney.

I, THE undersigned, hereby certify that Master of the bound to
 has complied with the Regulations of this Office, and is entitled to this Certificate, to enable him to Clear his Vessel at the Custom House.
 Shipping Office, Sydney, day of Shipping Master.

A 10.

No. 3,934. QUEENSLAND.—PORT OF PERMIT. [Fee, Five shillings.]

Issued only at the Government Shipping Office, Townsville.

THE Bearer, James Hunter, has no Certificate of Discharge, but is permitted to re-employ himself.
 30/11/86. J. A. YOUNG, Government Shipping Master.

A 11.

SOUTH AUSTRALIA. PERMIT TO SHIP. Fee, 5s.

ISSUED to Robert Winberg, who, being unable to produce the Certificate of Discharge from his last Ship, or a copy thereof, and having proved to my satisfaction that he does not belong to any vessel in this Province, is allowed to re-employ himself on the Ship "Karawccra," Port Adelaide.

21st February, 1893.

M. D. SMITH, Superintendent, Mercantile Marine.

A 12.

Book 205. [Coat of Arms.] No. 93. VICTORIA.—PORT OF MELBOURNE. [Fee, Five Shillings.] PERMIT.

Issued only at the Mercantile Marine Office, Melbourne.

THE Seaman, T. W. Edwards, has no Certificate of Discharge, but is permitted to engage in Ship "Innamineka."
 25th October, 1892. J. M. CLEAVE, Pro Superintendent of Mercantile Marine Office.
 £—: 5 : 0

A 13.

CONSULATE OF THE UNITED STATES OF AMERICA.

Sydney, New South Wales, 12 January, 1891.
 JOHN ALLEN, late A.B. of the American "Kate Davenport," of Port Blakely, has my permission to re-ship.
 P. W. KENNA,
 United States Vice-Consul.

A 14.

MEMORANDUM.

Dear Sir, 12 July, 1893.
 We desire to ship the bearer, J. Hall, as an A.B.* in our steamer "Hesketh."
 Yours faithfully,
 BURNS, PHILP, & CO. (LIMITED)
 (Per H. FORSYTH).

To the Shipping Master, Sydney.

No. 6,305.

LICENSE TO SHIP.

[Seal.]

I HEREBY certify that John Hall, first ship, has license from me to ship as deck-hand.
 Registered at the Shipping Office, Sydney, this 12th day of July, 1893.

J. EDIE,
 Shipping Master.

A 15.

MEMORANDUM.

Dear Sir, 12 July, 1893.
 We desire to ship the bearer, R. Cooper, as an A.B.* in our steamer "Hesketh."
 Yours faithfully,
 BURNS, PHILP, & CO. (LIMITED)
 (Per H. FORSYTH).

To the Shipping Master.

No. 6,304.

LICENSE TO SHIP.

[Seal.]

I HEREBY certify that Robert Cooper, shore service, has license from me to ship as a deck-hand.
 Registered at the Shipping Office, Sydney, this 12th day of July, 1893.

J. EDIE,
 Shipping Master.

A 16.

MEMORANDUM.

Dear Sir, 12 July, 1893.
 We desire to ship the bearer, M. Doyle, as an O.S. in our steamer "Hesketh."
 Yours faithfully,
 BURNS, PHILP, & CO. (LIMITED)
 (Per H. FORSYTH).

To the Shipping Master, Sydney.

No. 6,303.

LICENSE TO SHIP.

[Seal.]

I HEREBY certify that Michael Doyle, shore service, has license from me to ship as deck-hand.
 Registered at the Shipping Office, Sydney, this 12th day of July, 1893.

J. EDIE,
 Shipping Master.

A 17.

MEMORANDUM.

Dear Sir, 12 July, 1893.
 We desire to ship the bearer, W. Aylward, as an A.B. in our steamer "Hesketh."
 Yours faithfully,
 BURNS, PHILP, & CO. (LIMITED)
 (Per H. FORSYTH).

To the Shipping Master, Sydney.

Last ship, the "Essex"; engaged at London, 28th June, 1882; born, London, 1852; last ship, "Cyclops"; naval reserve, No. 69,352; signed A.B.

No. 6,302.

LICENSE TO SHIP.

[Seal.]

I HEREBY certify that William Aylward, shore service, has license from me to ship.
 Registered at the Shipping Office, Sydney, this 12th day of July, 1893.

J. EDIE,
 Shipping Master.

B 1.

[To Evidence of Captain Hixson.]

VESSELS detained provisionally or finally from going to sea by reason of unseaworthiness during the last three years.

Name.	Rig.	Tonnage.	Owner.	Remarks.
Kembla	Paddle steamer	283	Matthew Johnson	Finally detained.
W. C. Wentworth	Barque	315	James C. Ellis	Finally detained.
Caledonia	Fore and aft schooner ..	46	James Robinson	Provisionally detained.
Venture	Brig	117	Thomas Kehoe	Finally detained.
Micronesia	Ship	1,577	J. and W. Goffey	Provisionally detained.

27/2/94.

GEO. S. LINDEMAN,
 Secretary.

B 2.

Sir,

Marine Board Department, Sydney, 27 February, 1894.

Respecting certificates, I have the honor to state that the only steamers that have been actually refused passenger certificates are the "Kembla" and "Lawrence," but in the ordinary course of business we often notify owners that certain work must be done before another certificate can be issued. Generally we have no trouble; the work is almost invariably carried out to our satisfaction, and when it is not the boats are laid up.

Captain Lindeman, Secretary.

I have, &c.,
 WM. CRUICKSHANK.

B 3.

B 3.

SCHEDULE.

LIFE-SAVING APPLIANCES.

For the purposes of these rules, British ships shall be arranged into the following classes :—

DIVISION (A).

- Class 1.—Steam-ships carrying emigrant passengers subject to all the provisions of the Passengers Acts.
- Class 2.—Foreign-going steam-ships having passenger certificates under the Merchant Shipping and Navigation Acts.
- Class 3.—Steam-ships having passenger certificates under the Navigation Acts authorising them to carry passengers anywhere within intercolonial limits.

DIVISION (B).

- Class 1.—Sailing-ships carrying emigrant passengers subject to all the provisions of the Passengers Acts.
- Class 2.—Foreign-going sailing-ships carrying passengers, but not subject to all the provisions of the Passengers Acts.
- Class 3.—Foreign-going sailing-ships not carrying passengers.
- Class 4.—Foreign-going steam-ships not certified to carry passengers.

DIVISION (C).

- Class 1.—Steam-ships not certified to carry passengers plying anywhere within intercolonial limits.
- Class 2.—Sailing-ships in the same trades not carrying passengers.

DIVISION (D).

- Class 1.—Steam-ships having passenger certificates authorising them to carry passengers within certain specified limits, that is to say : On short specified passages along the coast of New South Wales.
- Class 2.—Steam-ships carrying passengers on short excursions or pleasure trips to sea or in estuaries or mouths of rivers during daylight.
- Class 3.—Steam-ships carrying passengers on rivers and (or) lakes, but not going to sea or into rough waters.

DIVISION (A).—CLASS 1.

Rules and Table for steam-ships carrying emigrant passengers subject to all the provisions of the Passengers Acts.

(a) Ships of Division (A), Class 1, shall carry boats placed under davits, fit and ready for use, and having proper appliances for getting them into the water, in number and capacity not less than prescribed by the following table ; such boats shall be equipped in the manner required by and shall be of the description defined in the General Rules appended hereto.

(b) Masters or owners of ships of this class claiming to carry fewer boats under davits than are given in the following table must declare before the Collector or other officer of Customs, at the time of clearance, that the boats actually placed under davits are sufficient to accommodate all persons on board, allowing 10 (ten) cubic feet of boat capacity for each adult person, or "statute adult."

(c) Table for Division (A), Class 1 :—

Gross tonnage.	Minimum number of boats to be placed under davits.	Total minimum cubic contents of boats to be placed under davits. L. x B. x D. x '4.	Gross tonnage.	Minimum number of boats to be placed under davits	Total minimum cubic contents of boats to be placed under davits. L. x B. x D. x '6.
1.	2.	3.	1.	2.	3.
9,000 and upwards	14	5,250	3,500 and under 3,750.....	8	2,600
8,500 and under 9,000	14	5,100	3,250 and under 3,500	8	2,500
8,000 and under 8,500	14	5,000	3,000 and under 3,250.....	8	2,400
7,750 and under 8,000	12	4,700	2,750 and under 3,000	6	2,100
7,500 and under 7,750	12	4,600	2,500 and under 2,750.....	6	2,050
7,250 and under 7,500	12	4,500	2,250 and under 2,500.....	6	2,000
7,000 and under 7,250	12	4,400	2,000 and under 2,250.....	6	1,900
6,750 and under 7,000	12	4,300	1,750 and under 2,000.....	6	1,800
6,500 and under 6,750	12	4,200	1,500 and under 1,750.....	6	1,700
6,250 and under 6,500	12	4,100	1,250 and under 1,500.....	6	1,500
6,000 and under 6,250	12	4,000	1,000 and under 1,250.....	4	1,200
5,750 and under 6,000	10	3,700	900 and under 1,000.....	4	1,000
5,500 and under 5,750	10	3,600	800 and under 900.....	4	900
5,250 and under 5,500	10	3,500	700 and under 800.....	4	800
5,000 and under 5,250	10	3,400	600 and under 700.....	3	700
4,750 and under 5,000	10	3,300	500 and under 600.....	3	600
4,500 and under 4,750	8	2,900	400 and under 500.....	2	400
4,250 and under 4,500	8	2,900	300 and under 400.....	2	350
4,000 and under 4,250	8	2,800	200 and under 300.....	2	300
3,750 and under 4,000	8	2,700	100 and under 200.....	2	250

NOTE.—Where in ships already fitted the required cubic contents of boats placed under davits is provided, although by a smaller number of boats than the minimum required by this table, such ships shall be regarded as complying with the rules as to boats to be carried under davits.

(d) Not less than half the number of boats placed under davits shall be boats of section (A) or section (B). The remaining boats may also be of such description, or may, in the option of the shipowner, conform to section (C) or section (D), provided that not more than two boats shall be of section (D).

(e) If the boats placed under davits in accordance with the foregoing table (c) do not furnish sufficient accommodation for all persons on board, then additional wood, metal, collapsible, or other boats of approved description (whether placed under davits or otherwise), or approved life-rafts shall be carried. One of these boats may be a steam-launch ; but in that case the space occupied by the engines and boilers is not to be included in the estimated cubic capacity of the boat.

Subject to the provisions contained in paragraph (g) of these rules, such additional boats or rafts shall be of at least such carrying capacity that they and the boats required to be placed under davits by table (c) provide together in the aggregate three-fourths more than the minimum cubic contents required by column 3 of that table. For this purpose 3 cubic feet of air-case in the life-raft is to be estimated as 10 cubic feet of internal capacity. Provided always that the rafts will accommodate all the persons for which they are to be certified under the rules.

All such additional boats or rafts shall be placed as conveniently for being available as the ship's arrangements admit of, having regard to the avoidance of undue encumbrance of the ship's deck, and to the safety of the ship for her voyage.

(f) In addition to the life-saving appliances before mentioned, ships of this Class shall carry not less than one approved life-buoy for every boat placed under davits. They shall also carry approved life-belts or other similar approved articles of equal buoyancy suitable for being worn on the person, so that there may be at least one for each person on board the ship.

(g) Provided, nevertheless, that no ship of this Class shall be required to carry more boats or rafts than will furnish sufficient accommodation for all persons on board.

DIVISION (A).—Class 2.

Rules for foreign-going steamships having passenger certificates under the Merchant Shipping and Navigation Acts.

Ships of this Class shall be subject to the same requirements as those in Division (A), Class 1.

DIVISION (A).—Class 3.

Rules for steamships having passenger certificates under the "Merchant Shipping and Navigation Acts," authorising them to carry passengers anywhere within intercolonial limits.

(a) Ships of this Class shall carry boats placed under davits in accordance with the rules and table provided for ships in Division (A), Class 1.

(b) If the boats placed under davits in accordance with this requirement do not furnish sufficient accommodation for all persons on board, then additional wood, metal, collapsible, or other boats of approved description (whether placed under davits or otherwise), or approved life-rafts, shall be carried, of at least such cubical capacity that they and the boats required to be placed under davits by Table (c) provide together in the aggregate one-half more than the minimum cubic contents provided by column three of that Table.

(c) Provided that if (having regard to the avoidance of undue incumbrance of the ship's deck, and to the safety of the ship for her voyage) it is not practicable for any ship of this Class to carry all the additional approved boats or approved life-rafts required by the preceding subsection (b), the deficiency so caused may be made up by the supply of an equivalent number of approved buoyant deck seats or other approved buoyant deck fittings.

(d) Ships of this Class shall carry not less than six approved life-buoys.

(e) They shall also carry, in addition to the boats and appliances required above, approved life-belts or other similar approved articles of equal buoyancy suitable for being worn on the person, so that there may be at least one for each person on board the ship.

(f) Provided nevertheless that no ship of this Class shall be required to carry more boats, rafts, and other buoyant deck fittings than will furnish sufficient accommodation for all persons on board.

DIVISION (B).—Class 1.

Rules for sailing-ships carrying emigrant passengers subject to all the provisions of the Passengers' Acts.

(a) Ships of Division (B), Class 1, shall carry boats in accordance with the Table (c) provided for Division (A), Class 1, and such boats shall be, as far as practicable, placed under davits, with proper appliances for getting them into the water. All boats not placed under davits are to be so carried that they can be readily got into the water.

(b) If the boats so carried do not furnish sufficient accommodation for all persons on board, then additional life-saving appliances shall be supplied as for ships in Division (A), Class 1.

(c) Provided that no ship in this Class shall be required to carry more boats or rafts than will furnish accommodation for all persons on board.

(d) Approved life-belts or other similar approved articles shall be carried as required for ships of Division (A), Class 1, and one life-buoy for each boat of wood or metal.

DIVISION (B).—Class 2.

Rules for foreign-going sailing-ships carrying passengers, but not subject to all the provisions of the Passengers' Acts.

Ships of this Class shall be subject to the same requirements as those in Division (B), Class 1.

DIVISION (B).—Class 3.

Rules for foreign-going sailing-ships not carrying passengers.

(a) Ships of this Class shall carry a boat or boats of Sections (A) or (B) sufficient for all the persons on board, and, in addition thereto, one good serviceable boat of Section (D). Such boats shall be, as far as practicable, placed under davits, with proper appliances for getting them into the water. All boats not placed under davits are to be so carried that they can readily be got into the water to the satisfaction of the Marine Board Officer.

(b) They shall carry approved life-belts as required for ships in Division (B), Class 1, and also one life-buoy for each boat of wood or metal.

DIVISION (B).—Class 4.

Rules for foreign-going steamships not certified to carry passengers.

(a) Ships of this Class shall carry, on each side, at least so many and such boats of wood or metal placed under davits, of which one on one side shall be a boat of Section (A) or Section (B), and on the other side shall be a boat of Section (A) or Section (B) or Section (C), that the boats on each side of the ship shall be sufficient to accommodate all persons on board. They shall have proper appliances for getting the boats into the water.

(b) They shall carry approved life-belts as required for ships of Division (B), Class 1.

(c) They shall carry not less than six approved life-buoys.

DIVISION (C).—Class 1.

Rules for steamships not certified to carry passengers plying anywhere within intercolonial limits.

(a) Ships of this Class shall carry, on each side, at least so many and such boats of wood or metal placed under davits, of which one on each side shall be a boat of Section (A) or of Section (B) or Section (C), that the boats on each side of the ship shall be sufficient to accommodate all persons on board. They shall have proper appliances for getting the boats into the water.

(b) They shall also carry approved life-belts so that there may be at least one for each person carried on board the ship.

(c) They shall also carry not less than four approved life-buoys.

DIVISION (C).—Class 2.

Rules for sailing-ships in the same trades not carrying passengers.

(a) Ships of this Class shall carry a boat or boats of wood or metal, at least sufficient for all persons on board, and in such a position as to be readily got into the water. Each boat shall be provided with one gallon of vegetable or animal oil, and a vessel of an approved pattern for distributing it in the water in rough weather.

(b) Ships of this Class shall also carry an approved life-belt for each person on board.

(c) They shall also carry at least two approved life-buoys.

DIVISION (D).—Class 1.

Rules for steamships having passenger certificates authorising them to carry passengers within certain specified limits; that is to say, on short specified passages along the coasts of New South Wales.

(a) Ships of this Class shall, according to their tonnage, carry boats placed under davits, as required by the Table for ships in Division (A), Class 1, but all such boats as are not required to be of Sections (A) or (B) must be of Section (C).

(b) If the boats placed under davits in accordance with the above requirements do not furnish sufficient accommodation for all persons on board, then additional wood, metal, collapsible, or other boats of approved description (whether placed under davits or otherwise), or approved life-rafts, shall be carried of at least such cubical capacity that they and the boats required to be placed under davits by Table (c) provide together in the aggregate one-half more than the minimum cubic contents provided by column three of that Table. For this purpose three cubic feet of air-case in the life-raft is to be estimated at ten cubic feet of internal capacity; provided always that the rafts will accommodate the persons for which they are certified under the rules.

(c) Provided that if (having regard to the avoidance of undue incumbrance of the ship's deck, and to the safety of the ship for her voyage) it is not practicable for any ship of this Class to carry all the additional approved boats or approved life-rafts required by the preceding subsection (b), the deficiency so caused may be made up by the supply of an equivalent number of approved buoyant deck seats or other approved buoyant deck fittings.

(d) Ships of this Class shall also carry approved life-belts or other similar approved articles of equal buoyancy suitable for being worn on the person, so that there may be at least one for each person on board the ship.

(r)

(e) At least one approved life-buoy shall also be provided for each boat of wood or metal carried by the ship, but in no case shall less than six approved life-buoys be provided.

(f) Provided nevertheless that no ship of this Class shall be required to carry more boats, rafts, and other buoyant deck fittings than will furnish sufficient accommodation for all persons on board.

DIVISION (D).—Class 2.

Rules for steamships carrying passengers on short excursions or pleasure trips to sea, or in estuaries or mouths of rivers during daylight.

(a) Ships of this Class shall carry at least two boats of Section (A) or Section (B) or Section (C), placed under davits, and with proper appliances for getting them into the water.

(b) They shall also carry other boats, approved buoyant apparatus, and (or) approved life-belts sufficient (with the boats required by paragraph (a)) to keep afloat all the persons on board the ship.

(c) At least four approved life-buoys shall be carried.

DIVISION (D).—Class 3.

Rules for steamships carrying passengers on rivers and (or) lakes, but not going to sea, or into rough waters.

(a) Ships of this Class shall carry one boat in such a position that she can readily be got into the water. They shall also carry approved buoyant apparatus or approved life-belts and approved life-buoys at least sufficient, together with the boat, to keep afloat all persons carried on board.

(b) At least four approved life-buoys shall be carried.

Note.—A discretion may be exercised by the Marine Board to relieve steam-launches, steamers plying in narrow waters, and ferry-boats from the operation of the whole or part of rule (a) of this Class.

GENERAL RULES.

1. Boats.—All boats shall be constructed and properly equipped as provided by these rules, and all boats and other life-saving appliances are to be kept ready for use to the satisfaction of the Marine Board. Internal buoyancy apparatus may be constructed of wood, or of copper or yellow metal of not less than eighteen ounces to the superficial foot, or of other durable material.

Section (A).—A boat of this section shall be a life-boat of whale-boat form, properly constructed of wood or metal, having for every ten cubic feet of her capacity, computed as in Rule 2, at least one cubic foot of strong and serviceable inclosed air-tight compartments, so constructed that water cannot find its way into them.

Section (B).—A boat of this section shall be a life-boat of whale-boat form, properly constructed of wood or metal, having inside and outside buoyancy apparatus together equal in efficiency to the buoyancy apparatus provided for a boat of Section (A). At least one-half of the buoyancy apparatus must be attached to the outside of the boat.

Section (C).—A boat of this section shall be a life-boat properly constructed of wood or metal, having some buoyancy apparatus attached to the inside and (or) outside of the boat equal in efficiency to one-half of the buoyancy apparatus provided for a boat of Section (A) or Section (B). At least one-half of the buoyancy apparatus must be attached to the outside of the boat.

Section (D).—A boat of this section shall be a properly constructed boat of wood or metal.

Section (E).—A boat of this section shall be a boat of approved construction, form, and material, and may be collapsible.

2. Cubic capacity.—The cubic capacity of a boat shall be deemed to be her cubic capacity, ascertained (as in measuring ships for tonnage capacity) by Stirling's rule; but as the application of that rule entails much labour, the following simple plan, which is approximately accurate, may be adopted for general purposes, and when no question requiring absolute correct adjustment is raised:—

Measure the length and breadth outside and the depth inside. Multiply them together and by '6; the product is the capacity of the boat in cubic feet. Thus a boat 23 ft. long, 8 ft. 6 in. broad, and 3 ft. 6 in. deep, will be regarded as having a capacity of $23 \times 8.5 \times 3.5 \times 6 = 499.8$, or 500 cubic feet. If the oars are pulled in rowlocks, the bottom of the rowlock is to be considered the gunwale of the boat for ascertaining her depth.

3. Number of persons for boats. The number of persons a boat of Section (A) shall be deemed fit to carry shall be the number of cubic feet ascertained as in Rule 2, divided by 10.

The number of persons a boat of Sections (B), (C), (D), or (E) shall be deemed fit to carry shall be the number of cubic feet ascertained as in Rule 2, divided by 8. The space in the boat shall be sufficient for the seating of the persons carried in it, and for the proper use of the oars.

4. Appliances for lowering boats.—Appliances for getting a boat into the water must fulfil the following conditions: Means are to be provided for speedily, but not necessarily simultaneously or automatically, detaching the boats from the lower blocks of the davit tackles; the boats placed under davits are to be attached to the davit tackles and kept ready for service; the davits are to be strong enough and so spaced that the boats can be swung out with facility; the points of attachment of the boats to the davits are to be sufficiently away from the ends of the boats to ensure their being easily swung clear of the davits; the boats' chocks are to be such as can be expeditiously removed; the davits, falls, blocks, eye-bolts, rings, and the whole of the tackling are to be of sufficient strength; the boats' falls are to be long enough to lower the boat into the water with safety when the vessel is light. The life-lines shall be fitted to the davits and be long enough to reach the water when the vessel is light; and hooks are not to be attached to the lower tackle blocks.

5. Equipments for collapsible or other boats and for life-rafts.—In order to be properly equipped each boat shall be provided as follows:—

(a) With the full single-banked complement of oars, and two spare oars.

(b) With two plugs for each plug-hole, attached with lanyards or chains, and one set and a half of thole pins or crutches, attached to the boat by sound lanyards.

(c) With a sea anchor, a baler, a rudder and tiller, or yoke and yoke lines, a painter of sufficient length, and a boat-hook. The rudder and bailer to be attached to the boat by sufficiently long lanyards, and kept ready for use. In boats where there may be a difficulty in fitting a rudder a steering oar may be provided instead.

(d) A vessel to be kept filled with fresh water shall be provided for each boat.

(e) Life-rafts shall be fully provided with a suitable approved equipment.

6. Additional equipments for boats of Section (A) and Section (B).—In order to be properly equipped, each boat of Sections (A) and (B), in addition to being provided with all the requisites laid down in Rule (5), shall be equipped as follows, but not more than four boats in any one ship require to have this outfit:—

(a) With two hatchets or tomahawks, one to be kept in each end of the boat, and to be attached to the boat by a lanyard.

(b) With a mast or masts, and with at least one good sail, and proper gear for each.

(c) With a line becketed round the outside of the boat and securely made fast.

(d) With an efficient compass.

(e) With one gallon of vegetable or animal oil, and a vessel of an approved pattern for distributing it in the water in rough weather.

(f) With a lantern trimmed, with oil in its receiver sufficient to burn eight hours.

7. Number of persons for life-rafts.—The number of persons that any approved life-raft for use at sea shall be deemed to be capable of carrying shall be determined with reference to each separate pattern approved by the Marine Board: Provided always, that for every person so carried there shall be at least three cubic feet of strong and serviceable enclosed air-tight compartments, constructed so that water cannot find its way into them. Any approved life-raft of other construction may be used, provided that it has equivalent buoyancy to that hereinbefore described. Every such approved life-raft shall be marked in such a way as to plainly indicate the number of adult persons it can carry.

8. Buoyant apparatus.—Approved buoyant apparatus shall be deemed sufficient, so far as buoyancy is concerned, for a number of persons, to be ascertained by dividing the number of pounds of iron which it is capable of supporting in fresh water by thirty-two. Such buoyant apparatus shall not require to be inflated before use, shall be of approved construction, and marked in such a way as plainly to indicate the number of persons for whom it is sufficient.

9. Life-belts.—An approved life-belt shall mean a belt which does not require to be inflated before use, and which is capable at least of floating in the water for twenty-four hours with fifteen pounds of iron suspended from it. Life-belts are to be cut out two inches under the armpits, and fitted so as to remain securely in their place when put on.

10. Life-buoys.—An approved life-buoy shall mean either—

- (a) A life-buoy built of solid cork, capable of floating in the water for at least twenty-four hours with thirty-two pounds of iron suspended from it; or
- (b) A strong life-buoy of any other approved pattern and material, provided that it is capable of floating in the water for at least twenty-four hours with thirty-two pounds of iron suspended from it, and provided also that it is not stuffed with rushes, cork shavings, or other shavings, or loose granulated cork, or other loose material, and does not require inflation before use.

All life-buoys shall be fitted with beekets securely seized, and not less than two of them shall be fitted with life-lines fifteen fathoms in length.

11. Position of life-buoys and life-belts.—All life-buoys and life-belts shall be so placed as to be readily accessible to all persons on board, and so that their position may be known to those for whom they are intended.

12. Water-tight compartments.—When ships of any Class are divided into efficient water-tight compartments to the satisfaction of the Marine Board, they shall only be required to carry additional boats, rafts, and other life-saving appliances of one-half of the capacity required by these Rules.

C.

[To evidence of *Mr. Samuel Smith, Secretary of the Seamen's Union.*]

PROTECTION FOR SAILORS.

To the Editor, *Evening News.*

SIR,—I would tender the advice to your correspondent, James F. Rowell, that he recommends to "Barnacle," viz., to become better acquainted with some of the practices of our boarding-house masters in Sydney and Newcastle before he attempts to deny that such base methods are adopted to plunder sailors of their hard-earned wages by even some American captains as well as British and Australian ship-masters; also to get a copy of the Statistical Register of Shipping. As a proof of the existence of the practice of blood-money being exacted as alleged by "Barnacle," I had occasion to direct the attention of the shipping authorities to the case of a sailor who had 5s. stopped out of £1 13s. 4d., whilst the legal charge is 1s. The sailor states that the master informed him the 5s. was for having given him the job. I only referred to this single case, but have knowledge of many more, and intend to submit them to the Select Committee now inquiring into shipping abuses of the port. I can also have the statements substantiated by seamen in different capacities, from mates downward. We have a few boarding-masters who are known to be engaged in the vile calling of inducing men to leave their vessels with or without the cognisance of the masters, and then supplying these same men to other vessels, getting the men's advance notes by the usual means resorted to by these scoundrels. In New York the system of blackmailing has become so notorious that some of the fairer-minded boarding-masters—after consultation with the British Consul (Mr. Gilbert Fraser)—forwarded an appeal to the British Board of Trade. The appeal said in part: "We, the undersigned, citizens of the United States, having a thorough knowledge of the methods of shipping British seamen at the port of New York, wish to call the attention of your honorable body to a flagrant outrage that has been perpetrated on British seamen by a class of men known here as middlemen, who stand between the British seaman and captain, and who encourage the captain to deduct from one to two months' pay from each seaman who wishes to be discharged at this port, the captain claiming that the said money is to pay for a substitute. Should such seamen wish to sail from this port in other British vessels, the said agent or middleman will tax him from 10 dol. to 15 dol., and sometimes more, the vessel receiving from said agent at least one-half of that money, known here as "blood-money." The names of the vessels and the officers of the same can be supplied. We likewise positively assert that within the past six months there has been an agent or middleman making a tour of England, Ireland, and Scotland, making contracts with the owners of vessels to supply crews at certain rates, with the understanding that the vessel will receive a certain rebate from each seaman in advance. Such contracts have been made by Robert J. Poynter, of the firm of Williams and Poynter, and John Havernon, of the firm of Havernon and Brennan, the former of whom is now in the British Isles." This appeal should show that certain American and British masters are the bloodsuckers they are alleged to be; but I trust, with your assistance, and that of the authorities, as well as the manly help of honorable and just-minded masters like Captain Rowell, we will be able to destroy such marine excrecences as crimps in this port, and which are such a reproach to the American people who tolerate these vultures who fatten on the simple sailor in every port of the United States, *vide New York Herald and Sun*, cuttings from which papers I enclose. I may inform Captain Rowell that we make no distinction here as to whether a seaman is a Californian Dutchman or a Massachusetts mariner. We recognise that all who sail under the Stars and Stripes—if not natural-born Americans—should at least be accorded that treatment expected by all men who lay claim to be free. In conclusion, I can cite many instances where crews are driven out of ships by mates and bo'suns, specially hired by captains for the purpose of doing so. I will also concede that Captain Rowell may know what happens on the "Great Admiral," but that it is quite impossible for him to know what transpires upon other vessels.

Yours, &c.,

SAMUEL SMITH,
Secretary F. S. Union.

D.

[To Evidence of *Mr. Samuel Smith.*]

Manager,
Dear Sir,

172, Princess-street, Sydney, 21 December, 1893.

Believing that your Directors are not incapable of some compassion for the sufferings of their fellow beings, I am constrained to think that your Board will be generous enough to relax the stringency of regulations now in operation, regarding the shipping or engaging of seamen, particularly those men who left your employment during the strike in July, and who are now being rigorously boycotted. Your Board will surely admit that these men and their unfortunate wives and children have been, even from your standpoint, sufficiently punished already, without carrying your antagonism to the point of vindictiveness.

These men have been guilty of no other crime than exhibiting that spirit of independence so characteristic of our race, and I am certain your Board have no desire to stamp out this quality that has done so much to place the Anglo-Saxon in the fore-front of civilisation.

Your Board are only asked to place these men upon the same footing as all other applicants for employment on your steamers, and that the system of black-listing will cease to operate in prejudicing these men's chances in obtaining employment. You are not asked to discharge any of your present employees.

I appeal to your Board, as humane and Christian fellow-citizens, to be influenced by the spirit of forgiveness expected to be displayed at this particular season, when we are celebrating the birthday of Him who inculcated the precept of "Forgive that ye may be forgiven."

Hoping that the thoughts of the cruel suffering that the wives and children of these men are being subjected to will have some influence, and cause you to decide in favour of these heavily punished men,

I am, &c.,

SAMUEL SMITH,
Secretary, Seamen's Union.

Sir,

We duly received your letter of 21st ultimo, addressed to the writer, concerning the men who left our ships during the strike in July last, and who, by so doing, probably hoped to succeed in preventing us from continuing our operations.

In reply, we desire to say that we repudiate that we are in any way actuated by vindictiveness, or that we are advocates of the system of rigorously boycotting the men in question.

When

When vacancies arise we simply exercise the right of selection of the men who suit us best, irrespective of whether they be Unionists or non-Unionists.

If there be any cruel suffering among the wives and children of those who wilfully deprived themselves of employment, we greatly regret it; but the blame cannot be laid at the door of the steamship-owners.

The Secretary, Seamen's Union,
172, Princes-street, Sydney.

Yours faithfully,
(For the Australasian United Steam Navigation Co., Ltd.),
JAS. MILNE.

Dear Sir,

Your letter of 21st instant (practically unsigned, the signature being type-written) was duly placed before my Board at to-day's meeting; and, in reply, I am directed to write that my Directors regret that you should have thought proper to introduce the elements of boycotting and vindictiveness into your communication, which charges, I need hardly say, are entirely repudiated.

The desire of my Board is to secure a loyal, steady, and able body of men for the Company's steamers, who can be relied on to carry out their engagements with their employers with integrity; and you will, no doubt, agree that this policy is absolutely necessary, in justice both to the travelling public and the shareholders of the Company. Any men possessing the above qualifications will be readily shipped in the steamers belonging to the Adelaide Steamship Company (Limited) as vacancies occur.

Mr. Samuel Smith, Secretary, Seamen's Union, 172, Princes-street, Sydney.

Yours faithfully,
E. NORTHCOTE,
Acting Secretary.

E 1 to 10.

[To Evidence of Mr. Samuel Smith.]

E 1.

IN MELBOURNE.

THE SHIPPING OF SEAMEN—CAPTAIN DYSON FINED.

Melbourne, Tuesday.—Mr. Nicholson, P.M., delivered his decision to-day in the case in which Captain Dyson, manager of the Maritime Labour Bureau, was charged with supplying a seaman to be entered on board the steamer "Innamineka." Mr. Nicholson held that the defendant was not in the constant employment of a shipowner, and that he was not a *bona fide* servant of any one shipowner. The Bench found the case proved, and fined defendant £5, with five guineas costs. Notice of appeal was given.—*Daily Telegraph*, 9th August, 1893.

E 2.

OPINION OF THE CROWN LAW OFFICERS IN ENGLAND AS TO THE LEGALITY OF THE ACTION OF THE SHIPPING FEDERATION.

In the House: Mr. Lockwood asked—"What was the opinion of the Law Officers of the Crown as to the legality of the action of the Shipping Federation?"

Mr. Mundella answered,—“In 1889 the Board of Trade were informed that a local secretary of the National Amalgamated Sailors and Firemen's Union, though he had no license from the Board of Trade to supply seamen under section 146, did supply seamen, being members of the union, to serve on board British ships. Mr. Wright (now Mr. Justice Wright) advised that the local secretary was liable to conviction under section 147. The Board of Trade, though a technical offence had been committed, considered it contrary to the intention and spirit of the Act to extend its provisions to actions arising out of a trade dispute. In 1890 the Shipping Federation was formed, which practically undertook to supply crews to ship-owners. We declined to prosecute them as we had previously in the case of the Seamen's Union. In consequence of a recent debate, I consulted the Law Officers as to whether the action of the Shipping Federation comes within section 147, and if such action amounts to a technical breach of the section, and if the offence is of such a criminal or quasi-criminal nature that the Board of Trade as Public Prosecutor is bound to prosecute the officials of the Federation. I am advised that the first question is of some nicety, but that upon a strict construction of the section the procedure of the Shipping Federation involves an *infringement of the Act*. The Board, however, is not bound to prosecute the officials unless satisfied that the public interests require it. But it must be remembered *it is open to any parties interested to prosecute*. The preamble of the Act of 1845 shows that the object was to put a stop to the system by which persons having no interest in ships supplied seamen and not to interfere with *bona fide* associations of owners or seamen. The Board of Trade decline to make themselves in any way partisans in a trade dispute. It is *open to either party to prosecute* if they consider the Act to be infringed. Everything has been carefully put to the Law Officers of the Crown, including the rules of the Shipping Federation and their own statement as to the way in which they worked those rules.”

E 3.

BREAKING THE SHIPPING LAWS.—FURTHER PROSECUTIONS.

The following letter, from the Secretary of the Seamen's Union to the Colonial Treasurer, speaks for itself:—

Sir, Federated Seamen's Union, Maritime Hall, Princes-street, Sydney, 29 July, 1893.

I am instructed to direct your attention to a further infraction of clauses 16, 17 (section 2), 21, and 22 of the Seamen's Law Consolidation Act, by the masters of the s.s. "Victorian" and "Emu." Information has been laid against the master of the "Victorian," and Captain Edie's attention has been drawn to several cases where men have been taken to sea (without producing discharges or licenses to ship) on both steamers. I trust that after a full inquiry into these cases you will accept as truthful and justifiable the allegations contained in previous letters: also statements made by the deputation which waited upon you from the Union.

To the Hon. John See, Colonial Treasurer.

I am,
Yours respectfully,
SAMUEL SMITH, Secretary.

E 4.

REPORT OF THE PROSECUTION OF CAPTAIN SKYMOUR OF THE S.S. "VICTORIAN."

Federated Seamen's Union of Australasia, (N.S.W. Branch).

Sir, Maritime Hall, 172, Princes-street, Sydney, 22 July, 1893.

Adverting to your communication of 8th July (in reply to my letter of 6th instant) wherein you state that our allegations *re* the indiscriminate issue of permits are without foundation, I beg to enclose for your perusal a copy of the evidence given before Mr. Whittingdale Johnson, S.M., at the Water Police Court on Thursday, 20th July, for a fuller report of which I refer you to the depositions taken at the Court. This, of itself, should be sufficient to show that we had ample ground for directing your attention to the indiscriminate issue of permits. None of the men named had ever been to sea in the capacity of A.B. or fireman, yet each of them was supplied with a license to ship. If further proof be wanted, we can cite many other cases.

Having regard, therefore, to the foregoing facts, we would again respectfully request you to be good enough to name a day and hour on which you could receive a deputation from this Union for the purpose of placing before you some suggestions which, if followed, would have the effect of preventing the abuse of the Shipping Office, which (our members believe) was established for a purpose other than that of shipping incompetent men—a practice which, during the past week, has resulted in the loss of life and property. Hoping for an early reply,

To the Hon. John See, Esq., Colonial Treasurer of N.S.W.

I remain, Sir,
Yours respectfully,
SAM. SMITH.

THE

THE POLICE COURTS.—CHARGE AGAINST A SEA CAPTAIN.

William Stephen Seymour, master of the steamer "Victorian," appeared at the Water Police Court yesterday afternoon, charged by five members of his crew—Henry Page, John Brown, John Willis, William Sheffield, and John Thompson—with having engaged them as seamen without discharges or permits. Mr. J. C. M'Lachlan appeared for the prosecution, and Mr. Osborne, of Messrs. Norton, Smith, and Co., defended. The accused pleaded guilty, and Mr. Osborne pointed out in extenuation that the men were engaged on July 15, the day that the ship was to sail. They were then asked to produce their discharges, and they said they had lost them. Mr. Seymour went ashore to see the Shipping Master to get permits, but the office was closed on account of its being Saturday, so that he was unable to do so. The ship was bound to leave port, and the men were consequently taken. Mr. M'Lachlan said, in reply, that the defence had had plenty of time to see about permits, as the men's pay commenced on July 8, and the vessel did not leave port till the 15th of the same month. Mr. Fisher, S.M., said the accused had clearly made himself responsible for having taken the men to sea, but it was apparent that he had not committed the offence wilfully. He would, therefore, deal as leniently as possible with him. A fine of 20s., with 5s. 6d. costs, was inflicted in each case, and £3 3s. complainant's costs were allowed in one case.—*Daily Telegraph*, 5 August, 1893.

E 5.

IMPORTANT CORRESPONDENCE.

CRIMPING IN GENOA.

Sir,

8 November, 1893.

I am informed by a large number of seamen frequenting the port of Genoa that certain boarding-masters who ship seamen on board of British ships charge them most exorbitant prices—in fact, swindle them in every direction; and it appears to be the opinion of seamen frequenting that port that if a shipping master was appointed, with the sanction of the Board of Trade, it would be much better for the men. There is a captain there, whose name I enclose, who was formerly in the employ of Messrs. Lamport and Holt, and other English shipowners, who would be willing to take the appointment providing the Board of Trade would sanction same. It would be the death-blow to crimping in Genoa.

I am, &c.,
J. H. WILSON.

The Rt. Hon. A. J. Mundella, M.P., Board of Trade.

Dear Sir,

Board of Trade, Whitehall Gardens, S.W., 10 November, 1893.

I am desired by Mr. Mundella to acknowledge receipt of your letter of 8th instant, suggesting that a shipping master should be appointed at Genoa, with the sanction of the Board of Trade.

I am to state that Mr. Mundella has referred the suggestion to the Marine Department and will communicate again with you on the subject.

Yours faithfully,
GARNHAM ROPER.

J. H. Wilson, M.P.

ALLEGED SUPPLY OF SEAMEN BY SHIPPING FEDERATION.

Sir,

Board of Trade (Marine Department), London, S.W., 4 September, 1893.

I am directed by the Board of Trade to state that they have had under consideration your letter to the President, of the 28th ultimo, forwarding a resolution passed by the Council of the Seamen's Union with regard to the proceedings of the Shipping Federation.

The Board of Trade desire me to refer you to the terms of the letter addressed to Sir John Leng on the 11th ultimo, which you state has been laid before your Council, and to call attention to the action taken by the Department in cases in which proceedings under section 148 of the Merchant Shipping Act, 1854, are likely to be successful.

I am at the same time to state that, while the Board of Trade are prepared to consider any specific instances of breach of the law which may be brought to their notice, they are not in possession of any particulars which would justify an inquiry such as that suggested in the resolution.

I am, &c.,
INGRAM B. WALKER.

J. H. Wilson, Esq., M.P.

COMPLAINT AGAINST A CONSUL.

Sir,

I am directed by the Executive Council of the Sailors and Firemen's Union to forward you a statement of W. Lindross, ship's cook, who formerly served on the s.s. "Arthur." We desire particularly to call your attention to the manner in which the British Consul at Antwerp treated this man, and also as to the neglect on the part of the Consul in not seeing that the man's clothes and effects were properly looked after.

Trusting you will cause inquiries to be made,

I am, &c.,
J. H. WILSON.

Sir Edward Grey, Bart, M.P. (Under Secretary), Foreign Office.

Sir,

Foreign Office.

With reference to your letter of the 18th ultimo respecting the case of W. Lindross, a ship's cook, who recently served on board the steamship "Arthur," I am directed by the Earl of Rosebery to inform you that the matter is being investigated.

I am, &c.,
F. A. LISTER.

J. H. Wilson, Esq., M.P., Sailors and Firemen's Union.

NEW PROVISION SCALE.

Sir,

Board of Trade (Marine Department), London, S.W., 7 November, 1893.

I am directed by the Board of Trade to acknowledge the receipt of your letter of the 31st ultimo, and in reply to inform you that on the application of the Shipping Federation they have instructed the Superintendents of Mercantile Marine Offices at certain ports to receive from the Federation printed copies of the Scale of Provisions, drafted by the Merchant Shipping Victualling Scale Committee, with a view to such copies being pasted in the Articles of Agreement when desired, and to state that the Board will raise no objection to copies of the Union Scale being received at their Mercantile Marine Offices in a similar way. The copies or slips should be of a size exactly corresponding with the space allowed on page 2 of the new Form of Agreement, and on hearing from you that they are ready, and receiving from you a list of the ports to which you propose to send them, the Board will issue the necessary instructions.

I am, &c.,
INGRAM B. WALKER.

J. H. Wilson, Esq., M.P., National Amalgamated Sailors and Firemen's Union.

ILLEGAL SUPPLY OF SEAMEN.

Sir,

11 December, 1893.

It is reported to me that there are certain crimps supplying stewards to P. & O. and other steamers, and charging them £5 for each berth. If the statements of the writer of enclosed letter are correct I think it is desirable that the Board of Trade should take steps to prevent such illegal charges being made. I enclose you the letter I have received.

I am, &c.,
J. H. WILSON.

The Assistant Secretary (Marine Department), Board of Trade.

Sir,

Sir, Board of Trade (Marine Department), London, S.W., 22 December, 1893.

I am directed by the Board of Trade to acknowledge the receipt of your letter of the 11th instant, forwarding a letter in which complaints are made of alleged illegal supply of seamen by a crimp.

In reply, I am to state with respect to the alleged supply of a man to the s.s. "Fifeshire" that no person of the name mentioned would appear to have been put on the ship's articles, but that on the vessel's return to the United Kingdom further inquiry will be made.

With regard to the engagement stated to have been procured for a man on board one of the Peninsular and Oriental Company's boats, if full particulars are furnished, the matter will be carefully investigated.

I am to add that the reports received from the Superintendents of the Mercantile Marine Offices at Tower Hill and Victoria Docks do not in any way support the statements made by Mr. Volker.

I am, &c.,
INGRAM B. WALKER.

J. H. Wilson, Esq., M.P., Sailors and Firemen's Union.

E 6.

COPY OF LICENSE ISSUED BY THE SHIPPING MASTER, NEW SOUTH WALES, TO OTTO HERMAN.

Licenses as Issued.

The following is a sample of many of the licenses to ship now being issued by the Shipping Master:—

No. 6,444. [Coat of Arms.] A 12.

License to Ship.

I HEREBY certify that Otto Herman, shore service, has license from me to ship.
Registered at the Shipping Office, Sydney, the 18th day of July, 1893.

J. EDIE,
Shipping Master.

Mr. Herman, to whom this permit was issued, states that he has been twenty years in Australia, during which time he has never been to sea. He has no papers to show that he has ever been to sea at all, and yet had no difficulty at all in obtaining a license to ship.

E 7.

REPORT OF THE SHIPPING MASTER, NEW SOUTH WALES, WITH REGARD TO THE ISSUE OF "LICENSES TO SHIP."

Sir, The Treasury, New South Wales, 25 July, 1893.

I am directed by the Colonial Treasurer to acknowledge the receipt of your letter of 22nd instant, and to hand you, enclosed, copy of the Shipping Master's report thereon.

Mr. See desires me to add, however, that if you can produce any fresh proof or further reliable information, and are still desirous of an interview with him, he will receive a deputation consisting of not more than four persons, on Thursday morning next at 11 o'clock.

I have, &c.,
F. KIRKPATRICK,
Under Secretary.

Samuel Smith, Esq., Secretary, Seamen's Union of Australasia,
New South Wales Branch, Sydney.

Sir, Shipping Master's Office, Sydney, 24 July, 1893.

With reference to the enclosed letter from the Secretary of the Seamen's Union, I have the honor to report:—

The men mentioned in the newspaper clipping came to the office for "Licenses to Ship," stating that they desired to engage as seamen, and as I was satisfied of such desire, licenses were issued to them (each man signing the butt of the License Book), in accordance with section 33 of 27 Victoria No. 13, which reads as follows:—"33. In case any seaman of any ship, of whatever tonnage the same may be, shall have lost his discharge, or from any other cause be unable to produce the same, or if any other person shall be desirous of engaging as a seaman, it shall be lawful for any Shipping Master on being satisfied of the fact of such loss, inability, or desire, as the case may be, to grant and to deliver to such seaman or other person a license to ship, which license shall be in writing and signed by the Shipping Master."

The word "Seaman" in the Act means every person employed in any capacity whatever on board ship, except masters, pilots, and apprentices.

The onus of shipping incompetent men rests with the persons who engage them, as a license to ship does not certify to the competency of the licensee, and the Act does not give power to prevent the master of a ship engaging the holder of a "Certificate of Discharge" or a "License to Ship" in any capacity he, the master, may think proper.

As I am aware of no abuses of this office taking place, I respectfully submit that Mr. Smith can offer no suggestion consistent with the Act which would prevent alleged abuse.

I have, &c.,
J. EDIE,
Shipping Master.

E 8.

PROSECUTION OF A REGISTRY OFFICE KEEPER FOR ALLEGED INFRINGEMENT OF MERCHANT SHIPPING ACT.

BREACH OF THE SHIPPING ACT.—"SIANGHAIING" AT MELBOURNE.

At the District Police Court yesterday, before Mr. C. H. Nicholson, P.M., and a Bench of Magistrates, an information was laid by Mr. J. M. Christie, of the Department of Trade and Customs, against Nathaniel Copeland, a registry office keeper in Little Collins-street, for an alleged infringement of the Merchant Shipping Act.

Mr. Woinarski prosecuted, and Mr. A. E. Jones defended.

The charge, as set forth by the prosecution, was that the defendant did, on the 2nd ultimo, wrongfully supply Thomas Conway, a seaman, to be entered on board the s.s. "Pateena" contrary to the provisions of the Act. The offence was laid under section 147, which states that "no person other than the owner, captain, or mate, or other legally authorised person, is permitted to supply seamen to a vessel under a penalty of £20." Conway, it appears, had no sea training, and had recently been employed as a groom at Marysville. He had applied to Copeland for work as a pick-and-shovel man, and the latter told him if he was a shovel-man he could get him a job as coal-trimmer on board a vessel, and that on payment of 5s. he would give him a note to Captain Dyson, of the Marine Free Labor Bureau. Copeland also said that if Dyson did not engage him his 5s. would be returned. Conway paid him the fee, and Captain Dyson is alleged to have sent him on board the "Pateena" as a fireman. He made a trip to Launceston in the "Pateena," and on arrival there he received a certificate of discharge as an A.B. This was a very irregular proceeding, and it required to be stopped with a firm hand.

As the man Conway failed to appear, although he had been duly served with a summons by Detective Christie, Mr. Woinarski applied for a remand, and he would also ask for a warrant for his arrest, as he has exhibited extreme unwillingness to have anything to do with the case.

Mr. Jones averred that the committee of the Seamen's Union were the real instigators of the prosecution. He should not oppose the application for remand, but he thought he was entitled to costs.

The Bench refused the application for costs then, and the case was postponed until Thursday, the costs to abide the issue of the case.—Melbourne *Argus* of Tuesday.

E 9.

E 9.

SEAMEN'S STRIKE.—DEPUTATION TO MR. SEE.

GRANTING OF PERMITS TO SEAMEN.

THE Colonial Treasurer, Mr. See, was waited upon yesterday morning by Messrs. J. D. FitzGerald, Davis, Black, and Houghton, Ms.L.A., and Messrs. A. Carrol (President), S. Smith (Secretary), J. McLean, and A. McNicoll, representing the Seamen's Union, with regard to the grievances by the Union against the Shipping Office.

Mr. FitzGerald introduced the deputation.

Mr. Smith addressed the Minister at length, and said that he could show that there were men on board the "Emu" who did not possess permits or discharges. They claimed that the greater number of men now employed on the steamers were incompetent. The seamen had been induced to believe, by the statements of the Treasurer in Parliament, that the law would be impartially administered.

Mr. See : I have carried out the law.

Mr. Smith proceeded to refer to the case of the "Hesketh." There was a necessity for amending the law, which could now be interpreted in many different ways. He claimed that, owing to incompetent men having been shipped, accidents had happened, and instanced the cases of the "Hilda," "Elingamite," "Guiding Star," "Franklin," and "Corea." The issue of licenses to incompetent men was altogether too easy.

Mr. See : In a great many cases the men make a declaration that they are seamen. If they afterwards state that they have not been to sea it does not reflect very great credit on them.

Mr. Smith : We assert that a man should not be allowed to obtain a permit by merely saying that he is a seaman.

Mr. See : If a captain takes a man he is responsible, and who is to blame ?

Mr. Davis : The Government, for allowing it.

Mr. See : It is the law. The permit does not say that the man is a seaman.

Mr. Davis : It entitles him to go to sea. Any man who has that document in his possession was licensed to go to sea in any vessel in New South Wales.

Mr. See : In one permit I see that the man is stated to be a shoreman.

Mr. Smith urged that great care ought to be exercised as regarded the issue of permits. The deputation was firmly of opinion that the law was not fairly administered as between the employer and the employee.

Mr. See : Do you know of one case in which a competent sailor, who had not got a discharge, applied for a permit and did not get it ?

Mr. Davis : There was one case in the "Royal Tar." The Marine Board declined to allow any man on board that ship to proceed to sea on a permit. There was one man who was one of the company, and had been a seaman, and they declined to allow him to ship as a sailor.

Mr. Smith said the men were sent away to find a Magistrate in order to make affidavits, and were put to a lot of unnecessary trouble.

Mr. See : For the last twelve months Captain Edie has been appointed a Magistrate in order that he may receive such declarations.

Mr. Smith : There are very few *bonâ-fide* men who lose their discharges. Some people in Sydney get discharges and give them to the men, and tell them to profess to be the men who are named in the discharge.

Mr. See : You never made that statement to me before. Such men ought to be prosecuted.

Mr. Smith : It is very difficult to prosecute a captain, but a captain can easily prosecute the men. We think the shipping officials should take action where they know that the captains are in the wrong.

Mr. See : I know that many shipowners have been summoned for committing breaches of the law.

Mr. McNicoll instanced a number of cases in which he stated there had been breaches of the law. There were, he said, Boards to inquire into the competency of the officers. Why should not seamen who had lost their discharges be subjected to an examination.

Mr. See : The Shipping Master puts them through an examination to a large extent. The present Shipping Master has had thirty years' experience at sea.

Mr. Davis : We do not dispute his capacity at all.

Mr. McNicoll : We come to you as Minister of Marine.

Mr. See : That is a new title. I do not know where you got it from. I have never been called Minister of Marine before.

Mr. Carrol mentioned several cases, and said that one captain on a steamer offered a man £3, after he had got his full crew, to go to Melbourne to steer the vessel, so that he might at least have one competent man on board.

Mr. Smith : We can supply the names afterwards if you wish. There are a large number on men as A.B.s on the coastal boats now who have never been to sea before, except as passengers.

Mr. Davis addressed the Minister at considerable length. He reminded Mr. See that a little time ago he moved the adjournment of the House on this very matter. Mr. See's reply, as reported in *Hansard*, was all that could be expected either from a Minister of Marine or from the most ardent Unionist. Mr. Davis quoted largely from Mr. See's reply, in order to remind him of the fact. But now it had been explained in an official letter that if the owner of a steamer liked to pick up a number of men, and came down to the Shipping Master and said that he wished to engage men, they were given permits to go to sea. The letter explained that only seamen who had lost their discharges had been engaged, or men recommended by the shipowners.

Mr. See : It does not say what the men are shipped as.

Mr. Black : It leaves a large loophole. They may be shipped as anything.

Mr. Davis : I could go on board the steamers in our port and show that 50 per cent. of the men shipped as able seamen are not seamen at all. I have information from officers of vessels on the matter. Many officers are afraid of the risk of losing their certificates owing to the incompetency of the crews. Some of the men who have been shipped as A.B.s do not know the difference between a ship's light and the light of a doctor's shop. The Marine Board were very zealous in the matter of the "Royal Tar." Why are not the authorities equally zealous now ? The Shipping Master's hands are tied. He says in this letter : "Other men produced memorandums from various shipowners." But why should every man be engaged who produces a recommendation from a shipowner.

Mr. See : Captain Edie administers the Act. I have not tied his hands. There has been no interference from me either one way or the other.

Mr. Davis : The position taken up now is quite different from the position you took up in the House.

Mr. See : I am as consistent now as I hope you are.

Mr. Davis : That is a matter of opinion.

Mr. See : I will allow the public to be the judge. Continuing, he said that he noticed that every man who signed articles on the "Emu" gave the name of the ship he had previously been employed in. The deputation could look at the articles if they wished.

Mr. Davis said that he wished to add one thing. There was a person in Sydney who kept a stock of these discharges, and could supply a regiment or two. The establishment of a boarding master was not considered replete unless he had on hand a big stock of discharges. He could prove that forgery had been committed in the case of 30 per cent. of those signed lately.

Mr. See said that the Act designated a sailor to be a person employed in any capacity on a ship, except as master or pilot, and excepting persons employed temporarily on a ship when in port. Amongst the offences provided was one upon the captain if he took men to sea without the signing the articles. All he could say was this : That, as far as the law was concerned, it had been administered with thorough impartiality. As he had stated previously, when this unfortunate dispute began, he told Captain Edie to be careful in the exercise of duty. His own position was one in which he was called on to administer the law, and as long as he did this his responsibility was at an end. The law might be defective, but it was not for him to say so. Whilst it was the law it must be administered. He could take no action which would be contrary to it. If the law provided that a seaman who had lost his certificate might get a permit, that seaman had a perfect right to obtain such a permit. It would be an arbitrary thing to refuse to give a permit to a sailor because he had left the sea for a few years. He maintained that the law had been impartially administered under a most trustworthy, efficient, and capable officer. No pressure had been brought to bear on that officer in any shape or form. Personally, he had only seen him twice during the whole period of the disturbance. As Minister he had been guided entirely by the officer

officer who was appointed to administer the law. It was not because there had been accidents that the system of engaging seamen was to be totally condemned. No doubt some men had said that they were competent seamen, and had thus obtained permits, whilst they had not been such, but if these men deliberately made misstatements the officials were not to blame. Besides, how could a man learn to become competent if he was never to be allowed to have any experience? The deputation spoke from a seaman's point of view, but this matter concerned the officers and the owners, and the public as well. If an accident happened to his vessel the shipowner was a heavy loser. Vessels were not usually covered by insurance for nearly the amount they were worth. It was, therefore, to the interests of the owners to have the vessels properly manned. All the care and the interest was not centered in the gentlemen he saw before him that day. The men whose business it was to own ships and to run them had also an interest in seeing that there were competent men on board, and he noticed from what had appeared in the press that in the majority of cases the seamen who had been engaged were said to be competent men.

Mr. Smith: What is the good of having a Marine Board to see that a vessel has proper boats if the men engaged as sailors are incapable of handling a boat if necessary.

Mr. See: Under the Act if any man makes a false and wilful statement with the view of obtaining a permit he can be fined £5, and the money can be deducted from any wages due to him.

Mr. Davis: Then the Government should deduct a month's salary off about half the men who are running to-day.

Mr. See: It is your duty to see that these men are prosecuted.

Mr. FitzGerald: It is not the duty of the Union officers to do that, but the duty of the police.

Mr. Carrol: Why, a lot of organ-grinders have shipped as A.Bs.

Mr. Davis: Oh, don't run down the profession like that.

Mr. See said that if cases of wrong-doing were brought before him he would take action in the matter.

The deputation then withdrew.

E 10.

SUGGESTED AMENDMENTS IN THE SEAMEN'S LAWS CONSOLIDATION ACT, 1864.

THAT between clauses 6 and 7, Part I, pages 2 and 3, be inserted the following:—

4. Also every Shipping Master, or other person duly authorised in that behalf by the Minister, may, in cases where he has reason to suspect that the provisions of this Act, or the laws for the time being relating to merchant seamen and to navigation, are not complied with, exercise the following powers, that is to say:—

- (1.) He may require the owner, master, or any of the crew of any ship to produce any official log-books or other documents relating to such crew or any member thereof in their respective possession or control.
- (2.) He may require any such master to produce a list of all persons on board his ship at the time of her departure from her first port, and of all persons who have subsequently been received on board at any port of call, distinguishing the passengers according to the classes of saloon, second-class, or steerage passengers, and take copies of such official log-books or documents, or of any part thereof.
- (3.) He may muster the crew of any such ship, and require all persons on board of such ship (other than the crew) to be collected together before him, and, if he finds the said persons to exceed the number of persons (other than as aforesaid) which the ship is authorised to carry, may require all the said persons in excess of such number to leave the ship forthwith.
- (4.) He may summon the master to appear and give any explanation concerning such ship or her crew or the said official log-books or documents; and should such explanation not be deemed satisfactory he may withhold the clearance of such vessel, and, if necessary, prevent her from going to sea for a period not exceeding *sixty* hours from the giving of such explanation.
- (5.) He shall see that every vessel is fully manned in accordance with the provisions of the Seamen's Laws Consolidation Act relating to the manning of vessels.

And if, upon the requisition duly made by any person so authorised in that behalf as aforesaid, any person refuses or neglects to produce any such official log-book or document as he is hereinbefore required to produce, or to allow the same to be inspected or copied as aforesaid, or impedes any such master of a crew as aforesaid, or refuses or neglects to give an explanation which he is hereinbefore required to give, or knowingly misleads or deceives any person hereinbefore authorised to demand any such explanation, he shall for each such offence incur a penalty not exceeding *twenty* pounds.

5. The Minister may from time to time dispense with the transaction before a Superintendent of Mercantile Marine, or in a Mercantile Marine Office, of any matters required by this Act to be so transacted; and thereupon such matters shall, if otherwise duly transacted as required by law, be as valid as if transacted before a Superintendent of Mercantile Marine or in a Mercantile Marine Office:—

That in the last line of subsection 1, section 14, Part III, on page 4, the word "of" be substituted for the words "not exceeding."

That in the fourth line of subsection 2, section 14, Part III, on page 4, the word "of" be substituted for the words "not exceeding"

That in the last line of subsection 3, section 14, Part III, page 5, the word "of" be substituted for the words "not exceeding"

That the word "either" in line 2, clause 16, Part III, on page 5, be omitted; and in the next line, the words "or on board the ship in which they are to be employed" be omitted; and in the tenth line of the same clause, all the words after the word "and" to the end of the clause inclusive to be omitted.

That all words in subsections 1, 2, 3, and 4, of clause 17, Part III, page 5, be omitted or varied if necessary, to conform to the sections 15 or 16, or to any other sections.

That clause 20, Part III, page 6, be repealed.

That in addition to the requisites provided by section 15, Part III, page 5, every agreement entered into by any master with any seaman shall contain the following:—

- i. The nature, and, as far as practicable, the duration of the intended voyage or engagement, or the maximum period of the voyage or engagement, and the places or parts of the world (if any) to which the voyage or engagement is not to extend.
- ii. The number and description of the crew, specifying how many are engaged as sailors.
- iii. The time at which each seaman is to be on board to begin work.

That in section 47, on page 12, be inserted after the tenth line the following clauses:—

In all cases where vessels are owned in or trading in the Colony, and where vessels are engaged on time agreement, all wages earned shall be paid monthly, on the first day of the month, and on vessels trading to ports within the Colony, weekly, or as soon thereafter as the vessel arrives at any port where there is a branch of any bank.

That there be inserted after subsection 4, section 66, on page 19, the following clause:—

That for the purposes of this section any seaman working on a wharf or otherwise on shore, under the instructions of his superior officer, or in pursuance of the shipping agreement entered into by him, shall be considered as in the service of his ship, and shall be entitled in case of illness or accident to the same medical attendance and subsistence as if on board ship at the time of such illness or accident.

That section 72, page 20, be repealed, except as affecting foreign-going ships on the high seas.

That the following clause be inserted after section 72, page 20:—

That any seaman desiring to leave any vessel in any Australasian port may do so on giving to the master of his ship twenty-four hours notice of his intention, and on procuring a duly qualified substitute to take his place, whereupon the master of the said ship shall give to such seaman so desiring to be discharged a proper discharge.

That between sections 76 and 77 be inserted the following clause:—

That in the event of any seaman prosecuting any master under whom he has served for any penalty or wages or otherwise, the Court may, irrespective of the success of the said seaman's prosecution or claim, make an order on the said master for the immediate payment out of the wages owing to such seaman of any such sum as the Court may deem just, such sum to be applied to the payment of any solicitor or barrister acting on behalf of such seaman in the said prosecution.

That

That between sections 32 and 33, Part IV, page 9, and immediately before any other clause there proposed to be inserted, be inserted the following :—

73. Any document authorising or promising, or purporting to authorise or promise, the future payment of money on account of a seaman's wages, conditionally on his going to sea from any port within the province, and made before those wages have been actually earned, shall be void. No moneys paid in satisfaction or in respect of any such document shall be deducted from a seaman's wages, and no person shall have any right of action, suit, or set-off against the seaman or his assignee in respect of any moneys so paid, or purporting to have been so paid : Provided that—

1. Nothing in this section shall invalidate or affect any allotment-note duly made under this Act.

Discharge and Payment of Wages.

74. In the case of all foreign-going ships and intercolonial ships all seamen shall be discharged and receive their wages in the presence of the said Board, or of a Superintendent of Mercantile Marine duly appointed under this Act, except in cases where some competent Court otherwise directs; and any master or owner of any such ship who discharges any seaman belonging thereto or, except as aforesaid, pays his wages within the province in any other manner, shall incur a penalty not exceeding ten pounds; and, in the case of coast-trade ships, seamen may, if the owner or master so desires, be discharged and receive their wages in like manner.

And the owner or master of the ship shall pay to each seaman on account, at the time when he lawfully leaves the ship, at the end of his engagement, two pounds, or one-fourth of the balance due to him, whichever is least, and shall pay him the remainder of his wages within two clear days (exclusive of any Sunday or public holiday) after he so leaves the ship.

That immediately after clause 35, Part IV, page 9, be inserted the following clause :—

That every master of every vessel of 80 tons burden or upwards trading from any port in this Colony to any of the Australasian colonies or the South Pacific Islands shall keep or cause to be kept an official log-book, either separate from or in conjunction with the ordinary ship's diary, such log-book to be kept in the manner and in the form as provided by law for the keeping of the official log-books of vessels trading to foreign ports.

That in the first line of section 42, page 11, the words "foreign going" be omitted, and in the first line, after the word "ship," the following words be inserted "belonging to or trading with the Colony"

That in the second line of section 31 the word "either" be omitted and all the words after "shipping master" in the sixth line down to the word "him" in the twelfth line inclusive be omitted, and the following section be substituted for it :—

That any notice of dismissal given to any seaman on any vessel trading to any port or parts in the colonies of Australasia or the South Pacific Islands shall not take effect till the expiration of forty-eight hours from the time such seaman commenced his duties on board any such vessel.

That between sections 32 and 33, Part IV, page 9, be inserted the following clause :—

That any seaman serving on board any vessel trading to any port or parts within the colonies of Australasia or the South Pacific Islands shall be entitled to have provided for him a free passage back to the port in which he engaged himself in case the vessel on which he is serving is unfitted to, or is not intended in due course to return to such port, and such seaman shall be entitled to wages in any such event till he actually arrive at the port of engagement.

Ratings.

That after Part 1, page 2, be inserted the following :—

6. From and after the commencement of this Act all vessels engaged in the home or intercolonial trade shall carry the number of seamen, and if a steam-vessel, the number of firemen and trimmers, specified in the *First* Schedule hereto annexed. The master and owner of every vessel proceeding on a voyage, or attempting so to proceed, without a full crew as herein specified shall be liable to a penalty not exceeding one hundred pounds.

7. A seaman shall not be entitled to the rating of A.B.—that is to say, of an able-bodied seaman—unless he has served at sea for four years before the mast; but the employment of fishermen in registered decked fishing-vessels or men employed in registered decked cutters shall only count as sea-service up to the period of three years of such employment; and the rating of A.B. shall only be granted after at least one year's sea-service in a trading-vessel in addition to three or more years' sea-service on board of registered decked fishing-vessels or registered decked cutter.

Such service may be proved by certificate of discharge or by other satisfactory proof.

Nothing in this section shall affect a seaman who has been rated and has served as A.B. before the passing of this Act.

8. No person shall be entitled to the rating of fireman who has not served for at least six months as trimmer in a steam-vessel engaged in the home or foreign trade, or who has served for at least six months as fireman in a registered steam-vessel plying within restricted limits, or who has served for at least six months on land as an engine-driver or fireman. Any master giving a certificate of discharge as an A.B. or fireman to any person who has not duly served in that capacity shall be liable to a penalty not exceeding fifty pounds.

FIRST SCHEDULE REFERRED TO ABOVE.

SEAMEN TO BE CARRIED IN SQUARE-RIGGED SAILING-VESSELS.

Under 100 tons register, not less than 4 certificated able seamen.				
Over 100	"	and under 300 tons register, not less than 6		} certificated able seamen.
" 300	"	" 600	" 8	
" 600	"	" 1,000	" 10	
" 1,000	"	" 1,500	" 12	
Two able seamen extra for every 500 tons or fraction of 500 tons that the vessel is above 1,500 tons.				

SEAMEN TO BE CARRIED IN SEA-GOING STEAM-VESSELS.

Under 50 tons register, not less than 2 certificated able seamen.				
Over 50	"	and under 100 tons register, not less than 4		} certificated able seamen.
" 100	"	" 400	" 6	
" 400	"	" 800	" 8	
" 800	"	" 1,200	" 10	
" 1,200	"	" 1,600	" 12	
" 1,600	"	" 2,000	" 14	
One able seaman extra for every additional 400 tons or fraction of 400 tons above 2,000 tons.				

FIREMEN.

Under 30 h.p., not less than 2 certificated firemen.				
Over 30	"	and under 100 h.p., not less than 3 certificated firemen.		
" 100	"	" 200	" 6	
" 250	"	" 400	" 9	
" 480	"	" 600	" 12	
One extra fireman for every 200 h.p. over 600.				
Vessels over 100 h.p. shall carry 1 trimmer for every 2 firemen.				

DRAFT BILL TO AMEND THE MERCHANT SHIPPING ACT, 1867.

BE it enacted by the Queen's Most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal and Commons, in this present Parliament assembled, and by the authority of the same, as follows:—

1. (1) Subsection (1) of section 9 of the Merchant Shipping Act, 1867, shall be construed as if the minimum space thereby required for every seaman and apprentice in every place in any ship occupied by seamen or apprentices, and appropriated to their use, were 140 (instead of 72) cubic feet, and 18 (instead of 12) superficial feet, measured on the deck or floor of such place. Amendments relating to places appropriated to seamen. 30 & 31 Vic. c. 124, s. 9 (1).
- (2) Such place shall be deemed not to be as far as practicable shut off and protected from effluvia, as required by subsection (2) of section 9 of the Merchant Shipping Act, 1867, if any hatchway or other opening or means of approach leading to the hold or peak of the ship is made, opened, or left open in such place. 30 & 31 Vic. c. 124, s. 9 (2).
- (3) Such place shall be deemed not to be kept free from stores or goods, as required by subsection (6) of section 9 of the Merchant Shipping Act, 1867, if any paint locker or oil store is kept inside such place, or in close proximity thereto, unless partitioned off therefrom by a permanent bulkhead, airtight and watertight. 30 & 31 Vic. c. 124, s. 9 (6).
2. This Act shall come into operation on the first day of September, 1893, and shall not apply to any ship which has not since that date been in some port in the United Kingdom. Commencement of Act and limitation of its operation.
3. This Act may be cited as the Merchant Seamen (Accommodation) Act, 1893, and shall be construed as one with the Merchant Shipping Acts, 1854 to 1890, and the Acts amending the same. Short title and construction.

DRAFT BILL TO AMEND THE MERCHANT SHIPPING ACT, 1854.

BE it enacted by the Queen's Most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal and Commons, in this present Parliament assembled, and by the authority of the same, as follows:—

1. Every seaman and apprentice on any British ship or fishing-boat shall be supplied with provisions and water according to the scale contained in the schedule hereto, and, save so far as is by this Act expressly provided, any stipulation whereby any seaman or apprentice agrees to deprive himself of the benefit of this Act or any part thereof shall be void. Fixed scale of seamen's provisions.
2. (1) Notwithstanding anything contained in section 149 of the Merchant Shipping Act, 1854, or in section 13 of the Merchant Shipping (Fishing Boats) Act, 1883, every agreement entered into under either of those sections shall contain a statement of the scale of provisions and water contained in the schedule hereto, as well as a scale of any additional provisions or water which may in any case be specially agreed on. Scale to be inserted in Seamen's agreements. 17 and 18 Vic., c. 104, 46 and 47 Vic., c. 41.
- (2) Whenever the officer making or directing such examination finds that the provisions or water are of bad quality or unfit for use, or are of less quantity than is necessary to satisfy the requirements of this Act, then
 - (a) if such deficiency in quality or quantity is due to the neglect or default of the master or of the owner of the ship, the master or owner guilty of such neglect or default shall be liable to a penalty not exceeding £50;
 - (b) if after signification in writing to the master of the result of the examination the master does not thereupon provide other proper provisions or water in lieu of any so signified to be of bad quality or unfit for use, or does not procure the requisite quantity of any so signified to be deficient in quantity, or uses any provisions or water in lieu of any so signified to be of bad quality or unfit for use, he shall in every such case incur a penalty not exceeding £50.
- (3) If the officer to whom complaint is made certifies in his statement of the result of the examination that there was no reasonable ground for such complaint, each of the parties so complaining shall be liable to forfeit to the owner out of his wages a sum not exceeding one week's wages. 17 and 18 Vic., c. 104, s. 222.
3. Section 223 of the Merchant Shipping Act, 1854, so far as it relates to the provisions which any seaman has by his agreement stipulated for, and the quantity specified in the agreement, shall be construed to include the provisions required by this Act to be supplied, and the quantity hereby fixed. Application of enactment relating to allowance for short or bad provisions. 17 and 18 Vic., c. 104.
4. (1) Any three or more of the crew of any British ship or fishing-boat may complain to any officer in command of Her Majesty's ships, or any Consular Officer, or any Superintendent of a Mercantile Marine Office, or any Chief Officer of Customs, that the provisions or water for the use of the crew are of bad quality, or of less quantity than necessary to satisfy the requirements of this Act, and such officer may thereupon examine the said provisions or water, or cause them to be examined; and after making such examination, such officer shall enter a statement of the result of the examination in the official log, and shall send a report thereof to the Board of Trade, and such report, if produced out of the custody of the Board or its officers, shall be received in evidence in any legal proceeding. Examination of provisions on complaint, and penalties in case of deficiency. 17 and 18 Vic., c. 104, s. 221.
5. Sections 221 and 222 of the Merchant Shipping Act, 1854, are hereby repealed. Repeal. 17 and 18 Vic., c. 104.
6. This Act may be cited as the Merchant Seamen (Provisions) Act, 1893, and shall be construed as one with the Merchant Shipping Acts, 1854 to 1890, and Acts amending the same. Short title and construction.

SCHEDULE.

Daily provisions per man:—

- 1 lb. cooked meat (salt beef, pork or fresh beef) exclusive of bone.
- 1 lb. potatoes (or substitute from time to time agreed on).
- 1 lb. bread.
- $\frac{1}{2}$ lb. flour.
- $\frac{1}{2}$ oz. tea.
- 1 oz. coffee and 2 oz. cocoa on alternate days.
- 3 oz. sugar.
- 1 gallon of water.

Weekly provisions per man:—

- | | | |
|---------------------------------------|---------------------------------|--------------------------------------|
| 2 oz. table salt | $\frac{1}{2}$ pint vinegar | 1 lb. currants or raisins |
| $\frac{1}{2}$ oz. ground black pepper | $\frac{1}{2}$ lb. peas or beans | $\frac{1}{2}$ pint bottle of pickles |
| 1 oz. mustard | 1 lb. onions | 1 lb. tin condensed milk |
| 2 oz. currie powder | $\frac{1}{2}$ lb. rice | 1 $\frac{1}{2}$ oz. butter |
| $\frac{1}{2}$ oz. pudding spices | $\frac{1}{2}$ lb. oatmeal | $\frac{1}{2}$ lb. marmalade or jam |

Additional provisions per man:—

- 1 lb. salt or fresh fish twice a week.
- Fresh soup, with vegetables, whenever practicable.

F1.

[To Evidence of Mr. Samuel Smith.]

ON THE "CORINNA"—POOR SEAMEN—TO BE BLAMED OR PITIED—THE TORTURES OF THE DAMNED.

A MAN who made a passage from Davenport to Sydney in the s.s. "Corinna," the week before last, gives the following account of the experiences of himself and his mate:—

He says—"My mate and I were 'on the rocks' at Hobart, and as we had to get away by hook or by crook, we began to cruise around the shipping office. Mr. Hawthorn, shipping master, called us in, and asked us to ship in the 'Corinna,' which he said was about to leave for Sydney. We consented, and were referred to Mr. Holdsworth, manager of the Union Shipping Company, whose cordial reception of us was in marked contrast to his manner a few days before, when we had applied for a free passage.

We

We all left that night with three other fellows by the 8 o'clock train to join the ship at Davenport, and when we arrived were at once interviewed by the skipper and engineer, who inquired whether we had firemen's discharges. We all replied in the negative, with the exception of my mate. In fact some of us looked more like farmers than firemen, and one man volunteered the information that he was a gamekeeper. We could not go to sea with the clothes we had, and with some difficulty we got £1 in advance.

The 'Corinna' left Davenport the next day. I was told off to the first watch below in the stokehole, being luckily paired with my mate, who was a fireman, and we did fairly well; but on the next watch, when we turned to to relieve the raw hands, we found only 40 lb. of steam when there should have been 95. The stokehole presented a peculiar appearance with the new hands rolling all over her from bunker to bunker, sick, miserable, and helpless, as in Gustave Doré's picture of the damned in Dante's *Inferno*.

This simile is rather rough on the damned, but let it pass!

Joe and I set to work, and after a hard struggle got up steam again towards the middle of our four hours.

As for the deck hands, only two of them could steer, and they, with the officers, had the deck to themselves during the whole of the passage, the others being snugly stowed away in their bunks, paying the usual tribute to Neptune. When we arrived off Twofold Bay, where two passengers were to be landed, the skipper wisely decided not to attempt to enter with such a crew, and the unlucky passengers, much to their disgust, were brought on to Sydney. All efforts to persuade the raw deck hands to turn to were useless. The chief mate would yell 'Where's that gamekeeper? Fetch the _____ out!' But when he was out he could only cling to the grating of the stokehole and—well—behave as most people do when they are seasick.

We left on Friday, 14th July, at 1 p.m., and arrived in Sydney on Sunday night at 8:30—about twelve hours behind time."

F2.

Melbourne, 25 July, 1893.

Dear Friend,

I promised I should send you some of the particulars about the passage of the "Elingamite." The first thing that I heard before leaving the wharf in Sydney was the captain consulting with the chief officer as to who was to undertake the job of steering her down the harbour; well they came to the conclusion it would be the third officer, as none of the black-leg sailors could manage it, and I must say that the third officer was not a very competent helmsman, as the captain was at him all the time. Well we got out of the heads somehow, and the officer was relieved from the wheel by one of the crew, and I must say that a drunken man with a wheelbarrow could have got along straighter than we did; in fact not one man out of the whole crew could steer to suit any captain during the time of peace.

I disguised myself as much as possible and went in the vicinity of the fore-castle and had a conversation with one of the crew, and I told him I would like a billet on a steamer, and I said I had no discharge; he said it did not matter as they could get me one at the Labour Bureau, and also get me a ship. Well this particular fellow was sent to splice an eye into a small piece of two and a half manilla rope and could not do it; this was on Saturday forenoon, so they had to give the job to one of the others, and he called himself an A.B., or rather the ship-owners did; in fact the whole lot of the sailors were as green to ship's work as a lot of bushmen.

Now I turned my attention to the engine-room and stokehole, and such a sight met my eyes. There were five firemen and an engineer trying to clean a fire, each one taking his turn at it; they put me in mind of a picture I saw once of the Darktown Fire Brigade; during this operation they only lost 15 lb. of steam, and I may also state this was supposed to be the best watch of firemen, as they were lucky enough to secure two young fellows who had been in the Orient boats. During a conversation I had with the captain I remarked how slow we were steaming along, and he told me that there was only 100 lb. of steam on here; well I know for a fact when she had union men she could always be found with not less than 150, and that was kept with two men in each watch; now there are six; no wonder she made such a long passage; in fact the six could not have kept 100 if it had not been for the engineers; they worked like gravediggers the whole of the time. I almost forgot about placing a man on the look out; well one of the scabs was placed on the fore-castle head; he was there about half an hour when I heard the officer on the bridge sing out to him: "Do you see that light on the port bow?" and he did not answer, so he called a man and asked him to go and draw the man on the look out's attention on the look out to the light; well I had seen the light from the saloon deck then at least fifteen minutes; no wonder they run that vessel down when they have such people on the look out. There is one thing I must say in favour of the captain; he does not like these fellows and he sees that they are kept at it from daylight to dark; they get no rest from him. If all the ships in the colonies are carrying two and three blacklegs in the room of one union man, and paying them at reduced rates, I think it would be a saving to them to have union men and give them higher wages than they formerly got, and from what I have seen they would save on it. The weather was splendid all the way down till we got as far as the Promontory, and then we had a fresh breeze to the heads. I might also state I have been this way a good many times, but I never saw such fine weather before, and we did not arrive in Melbourne until half-past 12 Sunday night. You might mention to Sam Smith the receipt of this, and oblige me with a copy of the *Workman*.

If I see anything that will be useful I will send you particulars of it; I am about the shipping a lot.

Yours, &c.,

W. HENRY,

12, Tiffcott-street, West Melbourne.

G.

[To Evidence of Mr. Samuel Smith.]

Herald, 27 September, 1893.

SHIPPING SEAMEN—THE CASE OF CAPTAIN DYSON—APPLICATION TO REVIEW—THE JUSTICES' DECISION UPHOLD BY THE SUPREME COURT.

IN Chambers, before Mr. Justice Williams, this afternoon, Mr. Finlayson applied for an order *nisi* to review the decision of the City Court Justices in fining Captain Dyson, manager of the Maritime Free Labour Bureau, £5, for engaging a crew to serve on the ship "Inamincka," in contravention of the Merchants' Shipping Act.

Mr. C. A. Smyth appeared to show cause, and after arguments by counsel,

His Honor said: In this case Captain Dyson had been appointed manager of the Maritime Free Labour Bureau by a certain number of steamship-owners, who subscribed amongst themselves to keep the institution going. It was part of Captain Dyson's duty to collect the subscriptions and hand them over to the secretary of the Steamship Owners' Association. Then the secretary drew a cheque and paid Captain Dyson for managing the bureau. The Adelaide Steamship Company wanted men for the "Inamincka," and at their instance Captain Dyson engaged four seamen for the vessel. The question is whether on those facts he could be said to be "a person who is the *bona-fide* servant and in the constant employment of the Adelaide Steamship Company." The magistrates thought he was not, and I agree with them. He was the manager of the bureau for half a dozen different companies, and he could not be said to be in the constant employment of the Adelaide Steamship Company, when one part of the day he was employed by them, another part by another owner, and so on. Only portion of his time was devoted to the requirements of one owner, and then only when the occasion arose. I think the word "constant" in that connection is almost equivalent to the word "exclusive," and that he must be a person to whose services the owner has the absolute right. As to the point about the receipt of the log-book in evidence, I think it is perfectly immaterial. I should say as to this particular case that the log-book was not evidence, but the evidence was not necessary to prove that the seaman was entered, but only that he was engaged. On both grounds the order would be discharged, with costs.

1894.

—
 LEGISLATIVE ASSEMBLY.
 NEW SOUTH WALES.

—
 SEAMEN PAID OFF IN THE PORT OF SYDNEY.
 (RETURN RESPECTING.)

—
Ordered by the Legislative Assembly to be printed, 21 February, 1894.
 —

RETURN to an *Order* made by the Honorable the Legislative Assembly of New South Wales, dated 6th December, 1893, That there be laid upon the Table of this House,—

“ A Return showing the number of seamen paid off in the Port of Sydney
 “ at the rate of one shilling per month during the years 1890, 1891 and
 “ 1892, respectively.”

(*Mr. J. D. FitzGerald, for Mr. Davis.*)

—
 RETURN showing the number of Seamen paid off in the port of Sydney at the rate of one shilling per month, during the years 1890, 1891, and 1892, respectively.

	1890.	1891.	1892.
Foreign Vessels	210	186	201
Intercolonial Vessels	2	48	6
Total... ..	212	234	207

Shipping Office,
 Sydney, 17th January, 1894.

J. EDIE,
 Shipping Master.

FOREIGN-GOING.

RETURN showing the number of persons discharged at the port of Sydney, New South Wales, during the year 1890, who appeared on the Articles of Agreement as having engaged at the rate of 1s. per month, to be discharged at this port.

Name of Vessel.	Date.	Number of Persons.	Name of Vessel.	Date.	Number of Persons.
Australasian Steamer	4 Feb., 1890	4	Orontes Ship	8 Aug., 1890	1
" "	4 July, 1890	5	Port Augusta Steamer	16 Dec., 1890	1
Aberdeen "	14 April, 1890	4	" "	30 " 1890	4
" "	3 July, 1890	1	Port Adelaide "	14 Aug., 1890	3
" "	13 Oct., 1890	3	Port Carline "	14 " 1890	1
" "	13 " 1890	3	" "	25 Jan., 1890	4
Aristides Ship	6 Aug., 1890	1	" "	18 June, 1890	4
" "	1 Sept., 1890	1	" "	1 Dec., 1890	6
Anaurus "	12 " 1890	1	Port Darwin "	28 Feb., 1890	1
Angerton Steamer	4 " 1890	2	" "	11 Nov., 1890	3
Bayley "	3 Feb., 1890	1	Port Denison "	10 Mar., 1890	4
Bungaree "	11 Nov., 1890	6	" "	1 Sept., 1890	3
Colwyn "	8 July, 1890	2	" "	26 " 1890	1
" "	28 Aug., 1890	1	Port Pine "	9 April, 1890	1
Cairnbulg Ship	6 " 1890	3	" "	25 Nov., 1890	6
Culgoa Steamer	18 Mar., 1890	4	Port Phillip "	16 May, 1890	1
Damascus "	18 " 1890	5	Port Victor "	19 Nov., 1890	4
" "	9 April, 1890	1	Patriarch "	20 Aug., 1890	3
" "	16 Aug., 1890	10	" "	6 Sept., 1890	1
Dynomene Ship	2 May, 1890	1	Pericles "	14 June, 1890	2
Echuca Steamer	22 Feb., 1890	2	Proudano "	25 Nov., 1890	1
" "	22 July, 1890	6	Riverina "	24 Jan., 1890	1
" "	17 Dec., 1890	4	" "	5 Feb., 1890	1
Gulf of Martaban... .. "	18 Mar., 1890	5	" "	7 " 1890	1
" "	17 Nov., 1890	1	Rodney Ship	11 Aug., 1890	2
Gulf of Venice "	30 Aug., 1890	1	Sophocles "	26 July, 1890	6
Hubbuck "	13 May, 1890	7	Southesk "	7 Dec., 1890	2
" "	4 Oct., 1890	7	Theophane "	28 Mar., 1890	3
Illawarra Ship	7 Nov., 1890	14	Thomas Stephens "	11 Sept., 1890	2
Micronesia "	10 Feb., 1890	1	Torridon "	31 Oct., 1890	2
Morayshire Steamer	10 June, 1890	1	Trafalgar "	6 Sept., 1890	4
" "	10 Dec., 1890	2	Wilcannia Steamer	3 Jan., 1890	2
Murrumbidgee "	16 Sept., 1890	6	" "	13 Nov., 1890	1
Nairnshire "	17 Nov., 1890	5	West Lothian "	28 Aug., 1890	3
Oakland "	8 Aug., 1890	3			
Orontes Ship	21 June, 1890	1			
				Total ...	210

FOREIGN.

RETURN showing the number of persons discharged at the port of Sydney, New South Wales, during the year 1891, who appeared on the Articles of Agreement as having engaged at the rate of 1s. per month, to be discharged at this port.

Name of Vessel.	Date.	Number of Persons.	Name of Vessel.	Date.	Number of Persons.
Aberdeen Steamer	31 Mar., 1891	1	Murrumbidgee Steamer	17 Feb., 1891	3
" "	21 Nov., 1891	5	" "	10 Aug., 1891	4
Algoma Ship	23 Jan., 1891	1	Nith Ship	28 Jan., 1891	1
Andrado "	6 Feb., 1891	1	Orontes "	25 Sept., 1891	2
Angerton Steamer	29 June, 1891	1	Pakeha "	27 Jan., 1891	4
Aroie "	16 Nov., 1891	2	Patriarch "	18 July, 1891	2
Aristides Ship	17 Aug., 1891	2	Port Adelaide Steamer	1 May, 1891	1
Australasian Steamer	17 April, 1891	4	" "	1 Sept., 1891	3
" "	21 Aug., 1891	2	Port Albert "	30 Oct., 1891	7
Bardowie Ship	15 Sept., 1891	1	Port Chalmers "	9 Dec., 1891	6
Bungaree Steamer	12 May, 1891	1	Port Caroline "	14 July, 1891	8
" "	19 Oct., 1891	1	Port Denison "	30 Jan., 1891	6
Bute-hire "	8 June, 1891	1	" "	4 Sept., 1891	8
Celtic King "	29 April, 1891	1	" "	19 Dec., 1891	3
Culgoa "	16 July, 1891	2	Port Pirie "	31 Mar., 1891	3
" "	15 Feb., 1891	6	" "	2 Sept., 1891	1
Damascus "	9 " 1891	6	Port Phillip "	24 Mar., 1891	4
" "	25 Sept., 1891	11	" "	8 Oct., 1891	3
Derwent Ship	23 June, 1891	9	Port Victor "	24 April, 1891	1
Echuca Steamer	20 " 1891	5	" "	6 Oct., 1891	5
" "	5 Nov., 1891	3	Rodney Ship	14 Aug., 1891	2
Fifeshire "	16 June, 1891	1	Sobraon "	25 Jan., 1891	1
Guthrie "	13 " 1891	1	Swathead "	13 " 1891	1
Gulf of Martaban "	27 Oct., 1891	5	" "	4 April, 1891	2
Hankow "	21 Jan., 1891	6	Southesk "	17 Dec., 1891	2
Hesperus Ship	10 Dec., 1891	2	Talavera "	3 Jan., 1891	2
Hereward "	24 Mar., 1891	1	Torridon "	2 " 1891	3
Hubbuck Steamer	31 " 1891	3	Wilcannia Steamer	27 April, 1891	4
Illawarra Ship	12 Sept., 1891	1	Woolloomooloo "	15 Sept., 1891	3
Inchape Rock "	9 Dec., 1891	1			
Macquarie "	31 Jan., 1891	2			
Morayshire Steamer	18 June, 1891	2			
				Total ...	186

FOREIGN.

RETURN showing the number of persons discharged at the port of Sydney, New South Wales, during the year 1892, who appeared on the Articles of Agreement as having engaged at the rate of 1s. per month, to be discharged at this port.

Name of Vessel.	Date.	Number of Persons.	Name of Vessel.	Date.	Number of Persons.
Aberdeen Steamer	13 July, 1892	6	Miowera Steamer	13 Dec., 1892	9
Aristides Ship	18 Sept., 1892	1	Mount Stewart Ship	27 Oct., 1892	7
Australasian Steamer	16 Aug., 1892	4	Nairnshire "	31 May, 1892	3
Balmore Ship	22 Sept., 1892	1	Port Caroline Steamer	30 Aug., 1892	4
Bannockburn "	24 June, 1892	3	Port Pirie "	23 Feb., 1892	4
Brahmin "	2 Nov., 1892	1	Port Douglas "	5 Jan., 1892	1
Bungareo Steamer	8 Apl., 1892	1	Port Denison "	9 Feb., 1892	6
Bernicia Ship	5 July, 1892	1	Port Chalmers "	23 May, 1892	3
Catterthun Steamer	25 Mar., 1892	1	" "	17 Nov., 1892	5
Chelydra "	17 Dec., 1892	2	Port Albert "	19 Apl., 1892	2
Chunaral "	29 Nov., 1892	1	Port Victor "	21 " 1892	1
Cromdale Ship	29 " 1892	1	Port Denison "	5 Aug., 1892	6
Culgoa Steamer	29 " 1892	2	Port Pine "	29 Nov., 1892	2
Cloneurry "	11 Jan., 1892	3	Peleus Ship	31 Aug., 1892	1
Damascus "	12 Sept., 1892	4	Pyrenees "	12 Dec., 1892	2
Derwent Ship	28 June, 1892	12	Port Albert Steamer	25 Oct., 1892	3
Dunsyro "	20 Jan., 1892	1	Patriarch Ship	6 July, 1892	4
Echuca Steamer	21 Apl., 1892	3	Rodney "	27 " 1892	1
Elderslie Ship	3 Mar., 1892	1	Ruabine Steamer	23 Mar., 1892	1
Elcomere "	10 June, 1892	1	Southern Cross "	9 Dec., 1892	6
Earl Cadogan "	15 Dec., 1892	1	Talavera Ship	5 Feb., 1892	1
Fifeshire Steamer	4 Jan., 1892	1	Trafalgar "	15 Jan., 1892	4
" "	19 July, 1892	1	" "	10 Oct., 1892	4
Gulf of Taranto "	29 Aug., 1892	2	Thermopylae Steamer	20 June, 1892	7
Gulf of Guinea "	24 " 1892	1	" "	15 Nov., 1892	8
Gulf of Siam "	30 May, 1892	4	Tamar Ship	6 Dec., 1892	11
Gulf of Genoa "	2 Sept., 1892	2	Woolahra "	6 May, 1892	1
Guthrie "	4 July, 1892	2	Woolloomooloo Steamer	3 Feb., 1892	3
Hero "	12 Dec., 1892	1	" "	2 Aug., 1892	2
Hollinwood Ship	23 May, 1892	1	Warrinoo "	30 Dec., 1892	2
Hubbuck Steamer	12 Sept., 1892	1	Wilcannia "	27 Sept., 1892	2
Liverpool Ship	5 Jan., 1892	3	Warrnambool "	25 Nov., 1892	2
Macquarie "	11 " 1892	6	Yarrawonga "	8 Jan., 1892	3
Meinwen "	29 Nov., 1892	2			
Murrumbidgee Steamer	28 July, 1892	2			
				Total	201

INTERCOLONIAL VESSELS.

RETURN showing the number of persons discharged at the port of Sydney, New South Wales, during the years 1890, 1891, and 1892, who appeared on the Articles of Agreement as having engaged at the rate of 1s. per month, to be discharged at this port.

Name of Vessel.	Date.	Number of Persons.	Name of Vessel.	Date.	Number of Persons.
Cuthona Sch'ner	3 Apl., 1890	1	Pendle Hill Sch'ner	17 Sept., 1891	1
Pendle Hill "	3 Nov., 1890	1	Santon Steamer	2 July, 1891	34
Bulimba Steamer	26 " 1891	2	Silver Cloud Sch'ner	10 Dec., 1891	1
Circe Sch'ner	31 Aug., 1891	1	Waroonga Steamer	15 " 1891	1
Elizabeth Graham "	6 Dec., 1892	1	Karaweera "	14 July, 1892	2
Glenelg "	2 May, 1891	4	Monowai "	27 Apl., 1892	1
Killarney "	11 June, 1891	1	" "	20 July, 1892	1
Monowai Steamer	8 Feb., 1891	1	" "	12 Oct., 1892	1
" "	1 June, 1891	1			
Northern Chief Sch'ner	2 Dec., 1891	1			
				Total for 3 years	56

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

VESSELS ARRIVING AT AND LEAVING PORTS OF
NEW SOUTH WALES.

(RETURNS RESPECTING, FOR 1893.)

Ordered by the Legislative Assembly to be printed, 22 February, 1894.

The Secretary of the Board of Health to The Under Secretary for Finance and Trade.

Sir,

Offices, 127, Macquarie-street, Sydney, 19 February, 1894.

I have the honor to forward you herewith the following returns respecting action taken by this Department with regard to vessels arriving at and leaving the ports of New South Wales during the year 1893:—

- (A) Return of vessels boarded and examined under the provisions of the Quarantine Acts, by the Health Officers, showing a decrease for the year of 42 vessels, and an increase of 3,603 passengers, and 6,055 crew examined;
- (B) Return of vessels quarantined and specially dealt with at Port Jackson, showing an increase for the year of 14 vessels;
- (C) Return of vessels quarantined and specially dealt with at Newcastle, showing an increase for the year of 13 vessels;
- (D) Proclamations in force under the Quarantine Acts;
- (E) Bills of health issued to outward-bound vessels at Port Jackson and Newcastle, showing an increase for the year of 125; and
- (F) Vessels cleared under the Imperial Passenger Acts.

I have, &c.,
EDMUND SAGER,
Secretary.

A.

RETURN of Vessels boarded and examined under the provisions of the Quarantine Acts, by the Assistant Health Officer at Port Jackson and the Health Officer at Newcastle, during the year 1893.

Port.	Number of Vessels.	Number of Passengers.	Number of Crew.	Number of Vessels detained for special action.
Port Jackson	427	11,068	30,950	121
Newcastle	113	84	3,015	71
Total.....	540	11,752	33,974	*192

* Full particulars respecting these vessels are given in Returns B and C.

NOTE.—Dr. J. C. Sibley and Dr. Chisholm Ross have continued to perform the duties of Assistant Health Officer for Port Jackson and Health Officer for Newcastle, respectively, during the year 1893.

B.

RETURN of Vessels Quarantined and specially dealt with at the Quarantine Station, Port Jackson, during the year 1893.

No.	Name of Vessel	Arrived.	Released.	Where from.	Master.	Surgeon.	Owners or Agents.	Cause of Detention.	Souls on board on arrival.				Landed and Detained.	Action taken.
									Nationality.	Passengers.	Crew.	Total.		
1	Melpomene, barque, German.	1893. 3 Jan., 8 a.m.	1893. 3 Jan., 4 p.m.	Hamburg (direct).	— Hobs.....	None	Hoffnung & Co...	Cholera in Hamburg.	European..	...	17	17	...	Effects of crew brought on shore and disinfected by dry or moist heat in Lyons' Patent. All parts of the ship fumigated with sulphur for six hours. All fresh water discharged, and tanks cleaned and lime-washed; bilges pumped out and disinfected with a solution of perchloride of mercury; no sand, loam, or earth ballast; one wooden water-cask burnt. All parts of the vessel in good sanitary condition.
2	Clitus, s.s. ...	3 Jan., 9.45 a.m.	3 Jan., 11 a.m.	Calcutta, via Singapore and Melbourne.	W. Fridt	None	Cowlishaw Bros.	Cholera in India.	European..	8	8	...	...	All fresh water discharged, and tanks cleaned and lime-washed; bilges pumped out, and sea-water let in until the discharge therefrom was perfectly clear. All parts of the vessel in good sanitary condition.
									Asiatic ..	1	50	...	...
3	Ocampo, s.s. ...	9 Jan., 6.30 a.m.	9 Jan., 7.30 a.m.	Hakodati, via Hong Kong and Queensland ports.	H. F. C. Price	M. F. Kirkman	Gibbs' Line; Burns, Philp, & Co.	Cholera in Japan & China.	European..	3	30	...	...	Same as above.
									Asiatic ..	...	11	...	...
4	Chingtu, s.s. ...	10 Jan., 8.20 a.m.	10 Jan., 9.20 a.m.	Hong Kong, via Queensland ports.	R. Innes	C. G. Fitzgerald	China S. N. Co.; Lorimer, Rome, & Co.	Cholera in China.	European..	10	11	...	...	Same as above.
									Asiatic ..	...	80	...	...
5	Calteithun, s.s.	6 Feb., 2.20 p.m.	6 Feb., 3.10 p.m.	Japan, via Hong Kong and Queensland ports.	Neil Shannon	None	E. & A.S.N. Co.; Gibbs, Bright, & Co.	Cholera in Japan & China.	European..	17	9	...	...	Same as above.
									Asiatic ..	...	66	...	...
6	Taiyuan, s.s.....	7 Feb., 7.10 a.m.	7 Feb., 6 p.m.	Japan, via Hong Kong and Queensland ports.	Robert Nelson	W. W. Hope...	China S. N. Co.; Lorimer, Rome, & Co.	Small-pox during voyage.	European..	9	11	...	...	Same as above. In addition.—All articles of wearing apparel and similar goods were disinfected by dry or moist heat or other process. All compartments were fumigated for five consecutive hours, with all beds, bedding, &c., openly exposed to the sulphur fumes. The ship's papers and all mail matter were disinfected on shore and then returned to ship. Captain reported—Between the 23rd December and the 7th January eight cases of small-pox occurred amongst the Japanese passengers. Two cases were landed at Nagasaki on 31st December. Two cases landed at Hong Kong on 1st January, one case on 6th January, and three cases on 7th January. All Japanese passengers left the vessel at Hong Kong on 9th January, and no sickness of a suspicious nature occurred since that date. The quarters vacated by the Japanese, also those of the crew were thoroughly fumigated and cleaned immediately after the discharge of the Japanese passengers.
									Asiatic ..	1	72	...	...
7	Himalaya, R.M.S.	16 Feb., 6 a.m.	16 Feb., 10.30 a.m.	London, via ports.	J. Orman	D. W. Williams	P. & O. S. N. Co.; G. Douglas Michie.	Measles on board.	European	133	121	...	11	This vessel was quarantined on arrival in consequence of an outbreak of measles during the voyage. Five convalescent saloon passengers and three members of the crew with the rash well developed landed, and were accommodated in the 1st class quarters. The berths, cabin, and hospital used by them during the voyage were disinfected by washing with a solution of corrosive sublimate, all beds, bedding, cushions, carpets, hangings, &c., having been previously sent on shore and there disinfected. Pratique was granted on the disinfection of the ship being completed. At 2.30 p.m., four of the passengers were released, their effects having been disinfected on shore by dry or moist heat. On 17th February, the remaining passengers with effects were conveyed to ship at Neutral Bay. All beds, bedding, &c., for disinfection were returned at same time. On 17th February, one cook and two waiters were discharged and returned to ship. On 4th March, the remainder of measles cases (three of crew) having completely recovered were transferred to ship at 9 a.m.
									Asiatic ...	1	174	
										134	295	429		

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RETURN of Vessels Quarantined, &c., during the year 1893—continued.

No.	Name of Vessel.	Arrived.	Released.	Where from.	Master.	Surgeon.	Owners or Agents.	Cause of Detention.	Souls on board on arrival.				Landed and Detained.	Action taken.
									Nationality.	Passen- gers.	Crew.	Total.		
8	Tsinan, s.s.	1893. 23 Feb., 8 a.m.	1893. 23 Feb., 2:30 p.m.	Hong Kong, via Queens- land ports.	George Ramsay	James Crane ...	China S. N. Co.; Lorimer Rome & Co.	Smallpox on board during voyage.	European Asiatic ...	4 1	11 83	...	...	All fresh water discharged, and iron tanks cleansed and limewashed; bilges pumped out and disinfected. Effects of passengers and crew disinfected by dry or moist heat, and vessel fumigated with sulphur for four hours with all beds, bedding, &c., openly exposed to the sulphur fumes. The following is a copy of the ship's official log:— 21st January, 1893, Hong Kong. Found two Japanese passengers suffering from smallpox. At 10 a.m. hoisted the yellow flag and sent all coolies on shore; stopped work and sent for Health Officer. At 5 p.m. Health Officer arrived, and ordered the ship into quarantine to be fumigated, and the two Japanese removed to hospital hulk. 22nd January, 7 a.m., left for Quarantine Station and arrived there at 7:40 a.m. At 11 a.m. the Health Officer arrived and saw the patients removed, and ship washed down with carbolic acid, and fumigated from 10:30 a.m. till 4 p.m., when pratique was granted and ship steamed to her berth.
9	Mcnamuir, s.s. ...	25 Feb., 7 30 a.m.	25 Feb., 9 30 a.m.	Hong Kong, via Timor.	Hugh Craig ...	None	E. & A.S.N. Co.; Gibbs, Bright, & Co.	Cholera in China.	European. Asiatic	3 18	10 74	...	...	All fresh water discharged, and iron tanks cleansed and limewashed; bilges pumped out, and sea-water let in until the discharge therefrom was perfectly clear. Vessel in a cleanly condition on arrival.
10	Argus, s.s.	5 March, 8 a.m.	5 March, 8 40 a.m.	Calcutta, via Melbourne.	E. Johnson ...	None	Cowlshaw Bros.	Cholera in India.	European. Asiatic ..	18 ...	8 60	...	...	Same as above.
11	Airlie, s.s.	9 March, 5 30 p.m.	9 March, 6 30 a.m.	Hong Kong, via Queensland ports.	W. Ellis	None	E. & A.S.N. Co.; Gibbs, Bright, & Co.	Cholera in China.	European. Asiatic ...	15 2	10 60	...	...	Same as above.
12	Bulimba, s.s. ...	11 March, 7 25 a.m.	11 March, 9 a.m.	Calcutta, via Melbourne.	Jas. Higgins ...	None	B. I. S. N. Co.; Burns, Philp, & Co.	Cholera in India.	European.	2	46	48	...	Same as above.
13	Samona, ship...	23 March, 11 10 a.m.	23 March, 2 30 p.m.	Buenos Ayres, S.A.	John L. Boyce	None	Bremner & Jack	Cholera, &c., in South America.	European..	...	26	26	...	All fresh water discharged, and iron tanks cleansed and limewashed; wooten water casks burned; bilges pumped out and disinfected with corrosive sublimate. Seven hundred tons of sand ballast on board which could not be discharged in quarantine with safety to the ship. The master gave a written promise not to have it discharged without a permit from the Board of Health.
14	Banklands, barque.	23 March, 8 a.m.	23 March, 1 p.m.	Mauritius	J. S. Pierrepont	None	Montefiore, Joseph, & Co.	Cholera in St. Louis.	European..	...	23	23	...	All fresh water on board discharged, and tanks cleansed and limewashed. Wooden casks burned; bilges pumped out and disinfected with corrosive sublimate. All parts of vessel in good sanitary condition.
15	Changsha, s.s. ...	25 March, 6 50 a.m.	25 March, 7 30 a.m.	Hong Kong, via Queensland ports.	J. E. Williams	W. Carter	China S. N. Co.; Lorimer, Rome, & Co.	Cholera in China.	European. Asiatic ...	10 ...	11 89	...	...	Same as above.
16	Guthrie, e.s. ...	6 April, 7 45 a.m.	6 April, 8 15 a.m.	Kobe, via Hong Kong and Queensland ports.	P. J. Helms ...	None	E. & A.S.N. Co. Gibbs, Bright & Co.	Cholera in Japan and China.	European. Asiatic ...	7 ...	10 90	...	...	All fresh water discharged, and iron tanks cleansed and limewashed. Bilges pumped out and sea water let in until the discharge therefrom was perfectly clear. All parts of the vessel in good sanitary condition.

RETURN of Vessels Quarantined, &c, during the year 1893—continued.

No.	Name of Vessel.	Arrived.	Released.	Where from.	Master.	Surgeon.	Owners or Agents.	Cause of Detention.	Souls on board on arrival				Landed and Detained.	Action taken.
									Nationality.	Passen- gers.	Crew.	Total.		
17	Boreas, Norwe- gian barque.	1893. 30 April, 1:45 p.m.	1893. 30 April, 4 p.m.	Hamburg	C. Jensen	None	Justus Scharff ..	Cholera at Hamburg	European..	...	10	10	...	All fresh water discharged, and iron tanks cleansed and lime- washed; bilges pumped out and disinfected with a solution of corrosive sublimate. Vessel in good sanitary condition.
18	Chingtu, s.s. ...	30 April, 4:20 p.m.	30 April, 5 p.m.	Hong Kong, via Queensland ports.	R. Innes	Baron Von Berg	China S.N. Co. Lorimer, Rome, & Co.	Small-pox in Hong Kong.	European. Asiatic ..	7 ...	11 128	...	...	All fresh water discharged, and iron tanks cleansed and lime- washed; bilges pumped out and sea water let in until the discharge therefrom was perfectly clear. All parts of vessel in good sanitary condition.
19	Yarrana, ship...	10 May, 9:45 a.m.	10 May, 10:30 a.m.	Rio Janiero ..	R. Robinson ...	None ...	Brennan and Jack	Cholera in South America.	European..	...	29	29	...	All fresh water discharged and iron tanks cleansed and lime- washed. Bilges pumped out and disinfected with solution of corrosive sublimate. Vessel in good sanitary condition.
20	Conference, barque	10 May, 12:55 p.m.	10 May, 2 p.m.	Amoy, China.	Thos. Davis ...	None ...	G. Chambers.....	Small-pox in China.	European..	...	12	12	...	Same as above. Had 140 tons sand ballast, which the Master undertook not to discharge without a permit from the Board of Health.
21	Taiyuan, s.s. ...	12 May, 7:45 p.m.	12 May, 9 a.m.	Hong Kong, via Queensland ports.	R. Nelson	H. Holmes.....	China S.N. Co Lorimer, Rome, & Co.	Cholera in China.	European.. Asiatic ...	2 ...	11 119	...	...	All fresh water discharged; and iron tanks cleansed and lime- washed. Bilges pumped out and sea water let in until the discharge was perfectly clear. Vessel in a good sanitary condition.
22	Colgoa, s.s.	17 May, 10:25 a.m.	17 May, 3 p.m.	London, via Las Palmas, Adelaide, and Melbourne.	J. Fankhurst..	Wm. Boyes ..	"Lund's" Line; Gibberis', Watt, & Co.	Passenger with sus- picious or- uption.	European..	21	48	69	2	On arrival in Quarantine the patient and an attendant were, together with all their effects, transferred to the hospital ship "Faraway." The compartment in which the patient was isolated on board ship was thoroughly disinfected by washing with a solution of corrosive sublimate and fumigating with sulphur. All beds, bedding, &c., used by patient during the voyage were sent on shore and disin- fected. The compartment having been disinfected, the passengers, crew, and ship were granted pratique and proceeded to Sydney. The patient, J. Gordon, whose case was diagnosed as one of chicken-pox, was transferred to the Coast Hospital on 19th May. The attendant released same time and returned to ship. All their effects were thoroughly disinfected prior to leaving station. All parts of vessel in good sanitary condition.
23	Catterthun, s.s.	18 May, 12:20 p.m.	18 May, 1:30 p.m.	Hong Kong, via Queensland ports.	N. Shannon ..	W. N. Griffiths	E. & A. S. N. Co. Gibbs, Bright, & Co.	Cholera in China.	European. Asiatic ...	4 ...	12 72	...	...	All fresh water discharged and iron tanks cleansed and lime- washed; bilges pumped out and sea water let in until the discharge was perfectly clear. All parts of vessel in good sanitary condition.
24	Tsiran, s.s.	3 June, 8:30 a.m.	3 June, 9:20 a.m.	Hong Kong, via Queensland ports.	G. Ramsay ...	Ed. Fyfe	China S. N. Co., Lorimer, Rome, & Co.	Cholera in China.	European. Asiatic ...	7 ...	11 118	...	...	Same as above.
25	Queen Eliza- beth, s.s.	4 June, 11:30 a.m.	4 June, 1 p.m.	Mauritius	C. E. Fulton...	None ...	Wallace & Co., Newcastle.	Cholera in Mauritius	European..	2	21	23	...	All fresh water discharged and tanks cleansed and lime- washed; bilges pumped out and disinfected with a solu- tion of corrosive sublimate. All parts of the vessel in good sanitary condition.
26	Menmuir, s.s. ...	7 June, 8:30 a.m.	7 June, 9:30 a.m.	Hong Kong, via Queensland ports.	H. Craig	None	E. & A. S. N. Co., Gibbs, Bright, & Co.	Cholera in China.	European. Asiatic ...	9 21	13 70	...	...	All fresh water discharged and iron tanks cleansed and lime- washed; all parts of vessel in good sanitary condition; bilges pumped out and sea water let in until the discharge was perfectly clear.
										30	83	113		

RETURN of Vessels Quarantined, &c., during the year 1893—*continued.*

No.	Name of Vessel.	Arrived.	Released.	Where from.	Ma-ter.	Surgeon.	Owners or Agents.	Cause of Detention.	Souls on board on Arrival.				Landed and Detained.	Action taken.
									Nationality.	Passen- gers.	Crew.	Total.		
27	New Guinea, s.s.	1893. 9 June, 9 a.m.	1893. 9 June, 1:30 p.m.	Calcutta, via Adelaide, and Melbourne.	— M'Eachran..	None	Burns, Philp, & Co.	Cholera in India.	European..	5	12	...	All fresh water discharged and iron tanks cleansed and lime- washed; all parts of vessel in good sanitary condition; bilges pumped out and sea water let in until the discharge was perfectly clear	
									Asiatic ..	2	52	...		
										7	64	71		
28	Sagami Maru, s.s.	22 June, 2 10 p.m.	22 June, 3:15 p.m.	Japan, via Queensland ports.	W. Creighton.	W. Sato and M. Fakusman.	Japan Co., Burns, Philp, & Co.	Cholera in Japan.	European..	2	6	...	Same as above.	
									Asiatic ..	1	70	...		
										3	76	79		
29	Changsha, s.s....	23 June, 8 a.m.	23 June, 9 a.m.	Kobe, via Hong Kong and Queensland ports.	J. E. William.	Lawson	China S. N. Co.; Lorimer, Rome, & Co.	Cholera in Japan & China.	European..	16	15	...	Same as above.	
									Asiatic ..	...	122	...	
										16	137	153		
30	Airlie, s.s.	2 July, 9:15 a.m.	2 July, 10 a.m.	Japan, via Hong Kong and Queensland ports.	W. Ellis	Eager	E. & A. S. N. Co.; Gibbs, Bright, & Co.	Cholera in Japan & China.	European..	15	12	...	Same as above.	
									Asiatic ..	...	93	...	
										15	105	120		
31	Woolloomooloo, s.s.	7 July, 12:30 p.m.	8 July, 2 p.m.	London, via Adelaide and Melbourne.	A. B. Pilkington	W.H.Bracewell	Lund's Line; Gil- christ, Watt, & Co.	Landed two cases of small- pox at the Sema- phore on 10 June	European..	7	49	...	Immediately after arrival all parts of the vessel were put under fumiga- tion with sulphur for eight consecutive hours. The beds, bedding, clothing, &c., having been sent on shore and disinfected by dry or moist heat at a temperature of not less than 250° Fahrenheit. After this all articles that could be washed or boiled without injury to the fabric were dealt with in this manner. On completion of fumigation all parts of the ship were thoroughly cleansed with a solution of perchloride of mercury and when dry washed with clean fresh water. Bilges were pumped out and sea water let in until the dis- charge therefrom was perfectly clear. Fresh water was discharged and iron tanks cleansed and lime-washed. At 2 p.m., 8th July, disinfection having been completed and the vessel being in a good sanitary condition, pratique was granted and ship left quarantine waters	
									Pilot ..	1	...	...
										8	49	57		
32	Clitus, s.s.	8 July, 11 a.m.	8 July, noon.	Calcutta, via Adelaide and Melbourne.	— Frith	None	Cowlshaw Bros..	Cholera in India.	European..	11	8	...	All fresh water discharged and iron tanks cleansed and lime- washed; bilges pumped out and sea water let in until the discharge was perfectly clear. All parts of the vessel in good sanitary condition.	
									Asiatic ..	9	50	...		
										20	58	78		
33	Darius, s.s.	14 July, 11 a.m.	14 July, noon.	Calcutta, via Java, Adelaide & Melbourne.	Wm. Curry ...	None	Cowlshaw Bros..	Cholera in India.	European..	4	8	...	Same as above.	
									Asiatic ..	...	57	...	
										4	65	69		
34	Taiwan, s.s. ...	31 July, 8 a.m.	31 July, 10:30 a.m.	Foochow, via Hong Kong.	R. Nelson	H. H. Orr	China S. N. Co.; Lorimer, Rome, & Co.	Cholera in China.	European..	4	11	...	Same as above.	
									Asiatic ..	...	91	...	
										4	102	106		
35	Guthrie, s.s. ...	4 Aug. 7:45 a.m.	4 Aug. 8:25 a.m.	Foochow, via Hong Kong.	P. T. He'ems ...	None	E. & A. S. N. Co.; Gibbs, Bright, & Co.	Cholera in China.	European..	4	10	...	Same as above.	
									Asiatic ..	20	80	...		
										24	90	114		

RETURN of Vessels Quarantined, &c., during the year 1893—continued.

No.	Name of Vessel	Arrived.	Released.	Where from.	Master.	Surgeon.	Owners or Agents.	Cause of Detention.	Souls on board on arrival.				Landed and Detained.	Action taken.
									Nationality.	Passengers.	Crew.	Total.		
36	Chingtu, s.s. ...	1893. 8 Aug. 1 p.m.	1893. 14 Aug. 11.20 a.m.	Hong Kong, Port Darwin, Thursday Is- land, and Townsville.	Robt. Innes ...	Gerald Weigall	China S. N. Co. ; Lorimer, Rome, & Co.	Landing one case of small- pox at Thursday Island and hav- ing one case on board on arrival.	European.. Asiatic ... Customs Officers ..	26 9 2	11 102 ...	... ... ...	37 111 2	This vessel came direct into Quarantine and was at once boarded by the Assistant Health Officer and Superintendent. At 3 p.m. a Chinaman named Ah Hee and a Japanese named Gamornolo Takijou, both members of the crew, were transferred to hospital ship "Faraway," showing suspicious symptoms. On 9th all persons landed with the exception of the crew, and were accommodated on shore for observa- tion. On 10th the Chief Medical Inspector and the Assistant Health Officer diagnosed the Chinaman's case (small pox), and the Japanese (acme). At 11.20 a.m. on 14th, the vessel having been thoroughly cleansed and disinfected, was allowed to be towed to Sydney, the crew and passengers, with all their effects, being detained in quaran- tine. The Japanese acme case was on this day removed to the shore hospital. All the effects of the crew and passengers were thoroughly disinfected on shore. At 5 p.m. on 23th August the crew and passengers, with the exception of Ah Hee, were released from quaran- tine. On 30th Ah Hee was removed to the shore hospital, and the "Faraway" disinfected. 31st August, all parts of the station being clean and free from infection, with the exception of the hospital, was released from quarantine. On 16th September, Ah Hee, being clean and free from infection, was handed over to the ship's agents. The hospital was then thoroughly disinfected and placed out of quarantine.
37	Catterthun, s.s. ...	29 Aug., 1893.	29 Aug., 1893.	Hong Kong, via Queensl'd ports.	M. Shaanon ...	None	E. & A.S.N. Co. ; Gibbs, Bright, & Co.	Cholera in China.	European Asiatic ...	... ...	9 66	... ...	... 75 75	All fresh water discharged and tanks cleansed and lime- washed ; bilges pumped out and sea-water let in until the discharge therefrom was perfectly clear. All parts of the vessel in good sanitary condition.
38	Sikh, s.s.	29 Aug., 1893.	29 Aug., 1893.	Foochow, via Queensland ports.	— Rowley ...	None	Mogul Line ; Burns, Philp, & Co.	Cholera in China.	European Asiatic ...	... ...	10 41	... ...	... 51 51	Same as above.
39	Erin's Isle, ship..	1 Sept., 1893, 9.30 a.m.	1 Sept., 1893, 1 p.m.	Rio de Janeiro	R. Y. Dixon ...	None	Captain	Cholera in Rio.	European	...	22	22	...	All fresh water tanks cleansed and lime washed ; wooden water casks burned ; bilges pumped out and disinfected with a solution of cor- rosive sublimate. All parts of the vessel in good sanitary condition.
40	Tsinan, s.s.	2 Sept., 1893, 10.30 a.m.	2 Sept., 1893, 11.45 a.m.	Kobe, via Hong Kong and Queensland ports.	Geo. Ramsay ...	Geo. F. Reid ...	China S.N. Co. ; Lorimer, Rome, & Co.	Cholera in Japan and China.	European Asiatic ..	8 ...	11 102	... ...	... 8 113 121	All fresh water discharged and tanks cleansed and lime- washed ; bilges pumped out and sea-water let in until the discharge was perfectly clear. All parts of the vessel in good sanitary condition.
41	Ingomar, Nor- wegian barque.	2 Sept., 12.45 p.m.	2 Sept., 8.45 p.m.	Santos, South America.	J. F. Tomsted..	None	Williams & Pauss	Yellow fever in Santos.	European.	...	16	16	...	All fresh water discharged, and iron tanks cleansed and lime-washed ; bilges pumped out and disinfected with a solution of corrosive sub- limate ; wooden water-casks burned ; fore-castle, holds, &c., fumigated with sulphur. All parts of the vessel in good sanitary condition.
42	Bucephalus, s.s.	4 Sept., 8 a.m.	4 Sept., 9 a.m.	Calcutta, via Adelaide and Melbourne.	— Forrester ...	None	Cowlishaw Bros.	Cholera in India.	European. Asiatic ...	5 ...	7 54	... ...	... 5 61 66	All fresh water discharged and tanks cleansed and lime- washed ; bilges pumped out and sea water let in until the discharge was perfectly clear. All parts of the vessel in good sanitary condition.
43	Changsha, s.s. ...	12 Sept., 7.10 a.m.	12 Sept., 8 a.m.	Hong Kong, direct.	J. E. Williams..	— Lawson	China S. N. Co. ; Lorimer, Rome, & Co.	Cholera in China.	European.. Asiatic ...	3 14	11 59	... ...	... 17 70 87	Same as above.
44	Capo Comorin, s.s.	16 Sept., 7.30 a.m.	16 Sept., 8.30 a.m.	Hong Kong, direct.	S. Partridge ...	None	Harold Bros.	Cholera in China.	European.. Asiatic ...	... ...	16 13	... ...	... ... 29 29	Same as above.

RETURN of Vessels Quarantined, &c., during the year 1893--continued.

No.	Name of Vessel.	Arrived.	Released.	Where from.	Master.	Surgeon.	Owners or Agents.	Cause of Detention.	Souls on board on arrival.				Landed and Detained.	Action taken.
									Nationality.	Passen- gers.	Crew.	Total.		
45	Aristides, ship...	16 Sept., 8:45 a.m.	16 Sept., 11:30 a.m.	London, direct.	N. Allan	W. Rogers	White Star Line; Dalgety & Co.	Cholera in London.	European..	9	34	43	...	Cholera regulations carried out; had two hundred (200) tons of sand ballast stowed under general cargo; such ballast not to be removed without the authority of the Board of Health.
46	Ballaarat, R.M.S.	18 Sept., 11:30 a.m.	18 Sept., 12:50 p.m.	London, via ports.	T. Angus	R. F. Gravely...	P. & O.S.N. Co.; G. Douglas Michie.	Cholera in Europe.	European..	27	71	...	...	Cholera regulations carried out at Melbourne under supervision of Health Officer, who granted certificate to that effect; mails and parcels post disinfected on arrival here. All parts of the vessel in good sanitary condition.
									Asiatic ...	1	122	...	...
										28	193	221		
47	Blundara, s.s....	23 Sept., 7:20 a.m.	23 Sept., 8 a.m.	Calcutta, via Adelaide and Melbourne.	F. Harrington..	None	B.I.S.N. Co ; Burns, Philp, & Co.	Cholera in India.	European..	11	10	...	...	Cholera regulations carried out in Melbourne; holds and quarters were under sulphur on arrival here, and had been burning for six hours. All parts of the vessel in good sanitary condition.
									Asiatic ...	5	82	...	...
										16	92	108		
48	Austral, R.M.S	25 Sept., 11:15 a.m.	25 Sept., 11:45 a.m.	London, via ports.	Thos. Tukes ...	— Black	Orient S.N. Co.; D. Anderson.	Cholera in Europe.	European..	130	150	...	...	Cholera regulations carried out in Melbourne under supervision of Health Officer, who granted certificate to that effect. All parts of the vessel in a good sanitary condition.
									Asiatic ...	2	...	...	...
										132	150	282		
49	Saher, s.s.	27 Sept., 11:30 a.m.	27 Sept., 12:15 p.m.	Bremen, via ports.	A. Konemann	None	N.G.L.'s.; J. Mergell.	Cholera in Europe.	European..	32	93	...	...	Same as above.
									Asiatic ...	3	...	...	...
										35	93	128		
50	Angers, s.s.	27 Sept., 7 p.m.	28 Sept., 6:30 a.m.	Nagasaki	J. Pinkham ...	None	Angers Brothers.	Cholera in Japan.	European..	...	28	...	...	All fresh water discharged, and tanks cleansed and lime-washed. Bilges pumped out, and sea water let in until the discharge was perfectly clean. All parts of the vessel in good sanitary condition.
									Asiatic ...	...	5	...	...
										...	33	33		
51	Mcnamuir, s.s. ...	29 Sept., 3:45 p.m.	29 Sept., 4:45 p.m.	Hong Kong, via Queensland ports.	H. Craig	— Duncan.....	E. & A.S.N. Co.; Gibbs, Bright, & Co.	Cholera in China.	European..	8	11	...	...	Same as above.
									Asiatic ...	...	65	...	...
										8	76	84		
52	Parramatta, R.M.S	2 Oct., 12:10 p.m.	2 Oct., 1 p.m.	London, via ports.	P. Harris	W. G. Thorpe.	P. & O.S.N. Co.; G. D. Michie.	Cholera in Europe.	European..	29	71	...	...	Cholera regulations carried out in Melbourne. Captain Harris held a certificate of disinfection from the Port Health Officer there. All parts of the vessel in good sanitary condition.
									Asiatic ...	...	125	...	...
										29	196	225		
53	Polynesion, s.s.	6 Oct., 12:30 p.m.	6 Oct., 1:5 p.m.	Marseilles, via ports.	L. Boulard ...	H. Blanc	M.M.; E. Blanc	Cholera in Europe.	European..	97	113	...	...	Same as above.
									Asiatic ...	...	83	...	...
										97	196	293		
54	Airlie, s.s.	7 Oct., 1 p.m.	7 Oct., 1:45 p.m.	Foochow, via Hong Kong and Queens- land ports.	W. Ellis... ..	None	E. & A.S.N. Co.; Gibbs, Bright, & Co.	Cholera in China.	European..	3	11	...	...	All fresh water discharged, and tanks cleansed and lime-washed. Bilges pumped out, and sea water let in until the discharge was perfectly clear. All parts of the vessel in good sanitary condition.
									Asiatic ...	21	47	...	...
										24	58	82		

RETURN of Vessels Quarantined, &c., during the year 1893—continued.

No	Name of Vessel.	Arrived.	Released	Where from.	Master.	Surgeon.	Owners or Agents.	Cause of Detention.	Souls on board on arrival.				Landed and Detained.	Action taken.
									Nationality.	Passengers.	Crew.	Total.		
55	Cuzco, s.s.	9 Oct., 9:10 a.m.	9 Oct., 10 a.m.	London, via ports.	— Anderson ...	— Cook	Orient S.N. Co.; D. Anderson.	Cholera in Europe.	European..	53	110	163	...	Cholera regulations carried out in Melbourne. Certificate to this effect from Dr. Maclean, Health Officer there. All parts of the vessel in good sanitary condition.
56	Britannia, R.M.S.	14 Oct., 9:15 a.m.	14 Oct., 10 a.m.	London, via ports.	C. F. Preston	T. A. M. Forde	P. & O.S.N. Co.; G. D. Michie.	Cholera in Europe	European..	47	97	...	...
									Asiatic ...	...	154	...	...
										47	251	298		
57	Booldana, s.s. ...	16 Oct., 7 a.m.	16 Oct., 7:45 a.m.	Calcutta, via Singapore, Adelaide, and Melbourne.	J. Wilson ...	None	B.I.S.N. Co.; Burns, Philp, & Co.	Cholera in India.	European..	10	8	...	...	All fresh water discharged, and tanks cleansed and lime-washed. Bilges pumped out, and sea water let in until the discharge was perfectly clear. All parts of vessel in good sanitary condition.
									Asiatic ..	6	32	...	...
										16	90	106		
58	Oberon, s.s.	17 Oct., 6:40 a.m.	17 Oct., 10 a.m.	Calcutta, via Java, Ade- laide, and Melbourne.	Alexr. Grate ...	None	Gilchrist, Watt, & Co.	Cholera in India.	European..	...	27	...	...	Same as above.
									Asiatic ..	..	5	...	...
										..	32	32		
59	Port Phillip, s.s.	18 Oct., 8 a.m.	18 Oct., 3:15 p.m.	London, via Las Palmas and Fre- mantle.	C. Grey	None	Parbury, Henty, & Co.	Cholera in London.	European..	6	36	42	...	All fresh water discharged, and tanks cleansed and lime-washed. Bilges pumped out and disinfected with a solution of corrosive sublimate. All parts of vessel in good sanitary condition.
60	Darius, s.s.	19 Oct., 6:30 a.m.	19 Oct., 7:30 a.m.	Calcutta, via Singapore, Adelaide, and Melbourne.	— Curry	None	Cowlishaw Bros.	Cholera in India.	European..	19	7	...	...
									Asiatic ...	3	74	...	...	Same as above.
										22	81	103		
61	Neotsfield, ship	18 Oct., 6:15 p.m.	19 Oct., 10:30 a.m.	London direct.	J. B. Rugg ...	None	Dangar, Gedye, & Co.	Cholera in London.	European..	..	35	35	...	All fresh water discharged, and tanks cleansed and lime-washed; bilges pumped out, and disinfected with a solution of corrosive sublimate. All parts of vessel in good sanitary condition.
62	Warnambool, s.s.	20 Oct., 12:45 p.m.	20 Oct., 3 p.m.	Southampton...	F. H. Ekins ...	None	Gilchrist, Watt, & Co.	Cholera in England	European..	...	52	52	...	
63	Hohenstaufen, s.s.	21 Oct., 7:25 a.m.	21 Oct., 8 a.m.	Bremen	— Robin	— Gunther ...	N.G.L.'s; J. Mer- gell.	Cholera in Bremen.	European..	61	105	166	...	Same as above.
64	Bay of Bengal, ship.	20 Oct., 2:20 p.m.	21 Oct., 8:5 a.m.	Rio de Janeiro	E. D. Campbell	None	J. S. Mailler & Co.	Cholera in Rio.	European..	...	27	27	...	All fresh water discharged, and tanks cleansed and lime-washed; bilges pumped out, and disinfected with a solution of corrosive sublimate. All parts of vessel in good sanitary condition.
65	Adour, s.s.	21 Oct., 9:10 a.m.	21 Oct., 9:30 a.m.	Dunkirk ...	— Flotte	D. Tellegully...	M.M.; E. Blanc.	Cholera in France	European..	...	50	50	...	
66	Westmeath, s.s.	21 Oct., 3 p.m.	21 Oct., 3:40 p.m.	Sunderland ...	Stonehouse	None	Balchin, John- stone, & Co.	Cholera in England.	European..	1	53	54	...	Same as above.
67	Port Hunter, s.s.	23 Oct., 1 a.m.	23 Oct., 6:30 a.m.	London	S. M. Orr	None	Gibbs, Bright, & Co.	Cholera in England.	European..	3	67	70	...	Same as above.
68	Ophir, s.s.	23 Oct., 1 p.m.	23 Oct., 1:55 p.m.	London	J. F. Ruthven.	T. W. Bagshaw.	Orient S.N. Co.; D. Anderson.	Cholera in England.	European..	177	199	376	...	Same as above.
69	Celestial Empire, ship.	25 Oct., 7:10 a.m.	25 Oct.,	Mauritius ...	John Duncan...	None	Balchin, John- stone & Co.	Cholera in Mauritius	European..	1	30	31	...	All fresh water discharged, and tanks cleansed and lime-washed; bilges pumped out and disinfected with a solution of corrosive sublimate. All parts of the vessel in good sanitary condition.

RETURN of Vessels Quarantined, &c., during the year 1893—continued.

No	Name of Vessel.	Arrived.	Released.	Where from.	Master.	Surgeon.	Owners or Agents.	Cause of Detention.	Souls on board on arrival.				Landed and Detained.	Action taken.
									Nationality.	Passen- gers.	Crew.	Total.		
8-118 70	Wairigal, s.s. ...	25 Oct., 1:15 p.m.	25 Oct., 1:45 p.m.	London	J. E. Albery ...	None	Gilchrist, Watt, & Co.	Cholera in London.	European..	11	53	64	...	All fresh water discharged, and tanks cleansed and linewashed; bilges pumped out and sea-water let in until the discharge was perfectly clear. All parts of vessel in good sanitary condition.
71	Glazee, s.s.	25 Oct., 12:30 p.m.	25 Oct., 1 p.m.	Hong Kong ...	— Scotland ...	None	Burns, Philp, & Co.	Cholera in China.	European..	11	53	64	...	Same as above.
72	Hazel Branch, s.s.	25 Oct., 9 p.m.	26 Oct., 6:15 a.m.	London	John Lee ...	None	Gilchrist, Watt, & Co.	Cholera in London.	European..	...	28	28	...	Same as above.
73	Chemnitz, s.s. ...	27 Oct., 5:35 a.m.	27 Oct., 6:10 a.m.	Hamburg	— Hellerich ..	Otto Bohrs- mann.	H. W. Henderson	Cholera in Hamburg	European..	16	35	51	...	Same as above.
74	Sophocles, ship	27 Oct., 2:15 p.m.	27 Oct., 4:50 p.m.	London	Alex. Smith ..	None	Daigety & Co. ...	Cholera in London.	European..	3	29	32	...	All fresh water discharged, and tanks cleansed and linewashed; bilges pumped out and disinfected with a solution of corrosive sublimate. All parts of vessel in good sanitary condition.
75	Taiyuan, s.s.	27 Oct., 3:30 p.m.	27 Oct., 4:25 p.m.	Foochow	Robt. Nelson...	None	China S. N. Co.; Lorimer, Rome, & Co.	Cholera in China.	European..	5	82	87	...	All fresh water discharged, and tanks cleansed and linewashed; bilges pumped out and sea-water let in until the discharge was perfectly clear. All parts of vessel in good sanitary condition.
76	Star of Victoria, s.s.	28 Oct., 10 p.m.	29 Oct., 7 a.m.	London	— Shaw	None	Balchin, John- stone, & Co.	Cholera in China.	European..	2	46	48	...	Same as above.
77	Cutty Sark, ship	29 Oct., 4 a.m.	29 Oct., 7:30 a.m.	Antwerp	R. Woodget ..	None	Parbury, Henty, & Co.	Cholera in Antwerp.	European..	...	21	21	...	All fresh water discharged, and tanks cleansed and linewashed; bilges pumped out and disinfected with a solution of corrosive sublimate. All parts of vessel in good sanitary condition.
78	Gulf of Siam, s s	29 Oct., 10:40 a.m.	29 Oct., 12:20 p.m.	Simonsaki (Japan)	— Sanderson ..	None	A. Macarthur & Co.	Cholera in Japan.	European..	...	37	37	...	All fresh water discharged, and tanks cleansed and linewashed; bilges pumped out and sea-water let in until the discharge was perfectly clear. All parts of vessel in good sanitary condition.
79	Masilia, R.M.S.	30 Oct., 7 a.m.	30 Oct., 7:30 a.m.	London	Chas. Fraser ..	— Duncan ...	P. & O. S. N. Co.; G. D. Michie.	Cholera in London.	European..	34	195	229	...	Same as above.
80	Taiwan, s.s.	2 Nov., 2:45 p.m.	2 Nov., 3:27 p.m.	Kobe	— Anderson ...	None	Gibbs, Bright, & Co.	Cholera in Japan.	European..	10	76	86	...	Same as above.
81	Orizaba, R.M.S.	5 Nov., 5:55 a.m.	5 Nov., 6:30 a.m.	London	A. W. Clarke ..	J. E. Cruize ...	Orient S. N. Co.; D. Anderson.	Cholera in London.	European..	161	165	326	..	Same as above.
82	Argus, s.s.	5 Nov., 8:40 a.m.	5 Nov., 9:5 a.m.	Calcutta	E. Johnson ..	None	Cowlishaw Bros	Cholera in India.	European..	13	65	78	...	Same as above.
83	Port Melbourne, s.s.	5 Nov., 8:30 a.m.	5 Nov., 9:50 a.m.	Algon Bay	James R. Smith	None	Gibbs, Bright, & Co.	Cholera in London.	European..	7	66	73	...	Same as above.
84	Armand Behic, s.s.	6 Nov., 12:30 a.m.	6 Nov., 6:15 a.m.	Marseilles	E. Delacroix ..	— Victim	M.M.'s; E. Blanc	Cholera in France.	European..	70	194	264	...	Same as above.
85	Australia, R.M.S.	6 Nov., 6:20 a.m.	6 Nov., 8:5 a.m.	London	Isaac Reeves ..	F. B. Farley ...	P. & O. S. N. Co.; G. D. Michie.	Cholera in London.	European..	80	278	358	...	Same as above.
86	Solingen, s.s. ...	6 Nov., 11 p.m.	7 Nov., 6:15 a.m.	Hamburg	N. Toulson	None	G.A.'s; H. W. Henderson.	Cholera in Hamburg.	European..	...	32	32	...	Same as above.
87	Arawa, s.s.	7 Nov., noon.	7 Nov., 12:30 p.m.	London	— Stewart	J. Macdonald...	Burns, Philp, & Co.	Cholera in London.	European..	6	121	127	...	Same as above.
88	Yarrowdale, s.s.	7 Nov., 7:40 p.m.	8 Nov., 7:20 a.m.	Cardiff	W. M. John- stone.	None	Gilchrist, Watt, & Co.	Cholera in England.	European..	...	27	27	..	Same as above.

RETURN of Vessels Quarantined, &c., during the year 1893—continued.

No.	Name of Vessel.	Arrived.	Released.	Where from.	Master.	Surgeon.	Owners or Agents.	Cause of Detention.	Souls on board on arrival.			Landed and Detained.	Action taken.	
									Nationality.	Passen- gers.	Crew.			Total.
89	Mimi, barque ...	8 Nov., 11:45 a.m.	8 Nov., 12:45 p.m.	Hamburg ...	E. J. Bruhn ..	None	M. Moss & Co. ...	Cholera in Hamburg	European..	...	18	18	...	All fresh water discharged, and tanks cleansed and limewashed; bilges pumped out, and disinfected with a solution of corrosive sublimate. All parts of vessel in good sanitary condition.
90	Guthrie, s s	9 Nov., 8:30 a.m.	9 Nov., 6:30 a.m.	Hisojo	P. T. Helms ...	D. Knaggs... ..	E. & A.S.N. Co.; Gibbs, Bright, & Co.	Cholera in Japan.	European..	31	76	107	...	All fresh water discharged, and tanks cleansed and limewashed; bilges pumped out, and sea-water let in until the discharge was perfectly clear. All parts of vessel in good sanitary condition.
91	Afrikander, s.s...	9 Nov., 11 30 p.m.	10 Nov., 7:15 a.m.	London	T. C. Hubback	None	Dalgety & Co.	Cholera in London.	European..	...	31	31	...	Same as above.
92	Vaening, barquentine	10 Nov., 7 15 a.m.	10 Nov., 8 a.m.	London	O. P. Larsen ..	None	Rabone, Feeze, & Co.	Cholera in London.	European..	...	9	9	...	All fresh water discharged, and tanks cleansed and limewashed; bilges pumped out and disinfected with a solution of corrosive sublimate. All parts of vessel in good sanitary condition.
93	Cairnbulg, ship..	10 Nov., 8:15 a.m.	10 Nov., 9:15 a.m.	Barry	A. Robertson... None	None	Burns, Philp, & Co.	Cholera in England.	European..	2	25	27	...	Same as above.
94	Glencona, ship..	11 Nov., 5:30 a.m.	11 Nov., 8 a.m.	Mauritius and Madras.	J. Webster ...	None	J. S. Mailler & Co.	Cholera in Mauritius	European..	...	33	33	...	Same as above.
95	Thermopylae, s.s.	12 Nov., 12:15 p.m.	12 Nov., 1:20 p.m.	London	— Simpson ..	R. Laughter ..	Dalgety & Co. .	Cholera in London.	European..	23	66	89	...	All fresh water discharged, and tanks cleansed and limewashed; bilges pumped out and sea-water let in until the discharge was perfectly clear. All parts of vessel in good sanitary condition.
96	Echuca, s.s.....	12 Nov., 2:50 p.m.	12 Nov., 3:40 p.m.	London	A. W. Bond ...	None	Gilchrist, Watt, & Co.	Cholera in London.	European..	3	40	43	...	Same as above.
97	Lord Erne, s.s...	13 Nov., 6 a.m.	13 Nov., 7:45 a.m.	Hull	James Dunn ...	None	Balchin, John stone, & Co.	Cholera in England.	European..	7	45	52	...	Same as above.
98	Cape Colonna, s.s.	14 Nov., 11 p.m.	15 Nov., 6:30 a.m.	Hong Kong ...	— Alston	None	Dalgety & Co. ...	Cholera in China.	European..	...	39	39	...	Same as above.
99	Essen, s.s.	16 Nov., 5 a.m.	16 Nov., 5:50 a.m.	Hamburg	J. Bouhn	None	H. W. Henderson	Cholera in Hamburg	European..	...	35	35	...	Same as above.
100	Elberfeld, s s. ..	16 Nov., 7:30 p.m.	17 Nov., 6:30 a.m.	Hamburg	C. Sass	None	H. W. Henderson	Cholera in Hamburg	European..	11	37	48	...	Same as above.
101	Oroya, R.M.S. ..	18 Nov., 4 p.m.	18 Nov., 4:50 p.m.	London	E. E. Lavington	Harvey M'Pherson.	Orient S. N. Co.; D. Anderson.	Cholera in London.	European..	186	162	348	...	Same as above.
102	Hohenzollern, s.s.	19 Nov., 4:40 p.m.	19 Nov., 5:30 p.m.	Bremen	— Eichel	— Frohur	N.G.L.'s; J. Mergill.	Cholera in Bremen.	European..	65	103	168	...	Same as above.
103	Strathelyde, s.s.	21 Nov., 4:40 p.m.	21 Nov., 6:35 p.m.	Kobe and Mogi	J. White	None	A. Macarthur & Co.	Cholera in Japan.	European..	...	30	30	...	Same as above.
104	Cromdale, ship	22 Nov., 1:30 a.m.	22 Nov., 6:25 a.m.	London	— Andrews ..	None	J. Sanderson & Co.	Cholera in London.	European..	1	30	31	...	All fresh water discharged, and tanks cleansed and limewashed; bilges pumped out and disinfected with a solution of corrosive sublimate. All parts of the vessel in good sanitary condition.
105	Oceana, R.M.S.	22 Nov., 5:30 p.m.	22 Nov., 6:30 p.m.	London	E. Stewart.....	D. James	P. & O. S N Co., G. D. Michie.	Cholera in London	European..	101	256	357	...	All fresh water discharged, and tanks cleansed and limewashed; bilges pumped out and sea-water let in until the discharge was perfectly clear. All parts of vessel in good sanitary condition.
106	Charente, s.s. . .	23 Nov., 5:45 a.m.	23 Nov., 7 a.m.	Bordeaux	— Bouis	Duploymcloy... M.M.'s; E. Blanc	Cholera in France.	European..	...	50	50	...	Same as above.	
107	Bloemfontein, s.s.	23 Nov., 4:35 p.m.	23 Nov., 5 15 p.m.	London	T. L. Salmon... None	None	Balchin, John- stone, & Co.	Cholera in London.	European..	...	31	31	...	Same as above.
108	Caiterthun, s.s.	23 Nov., 5:45 p.m.	23 Nov., 6:20 p.m.	Foochow	Neil Shannon... None	None	E. & A. S. N. Co.; Gibbs, Bright, & Co.	Cholera in China.	European..	4	69	73	...	Same as above.
109	Ramore Head, s s.	24 Nov., 6:5 a.m.	24 Nov., 7 a.m.	Barry	Thos. M'Cal- mont.	None	Balchin, John- stone, & Co.	Cholera in England.	European..	...	44	44	...	Same as above.

RETURN of Vessels Quarantined, &c., during the year 1893—continued.

No	Name of Vessel.	Arrived.	Released	Where from.	Master.	Surgeon.	Owners or Agents.	Cause of Detention.	Souls on board on arrival.				Landed and Detained.	Action taken.
									Nationality.	Passen- gers.	Crew.	Total.		
110	Chingtu, s.s. ...	25 Nov., 3:45 p.m.	25 Nov., 4:30 p.m.	Japan, via Hong Kong and Queensland ports.	Robt. Innes ...	W. Meeke ...	China S. N. Co.; Lorimer, Rome, & Co.	Cholera in Japan and China.	European.. Asiatic ...	11 ...	11 80	...	...	All fresh water discharged, and tanks cleansed and limewashed; bilges pumped out, and sea-water let in until the discharge was perfectly clear. All parts of vessel in good sanitary condition.
111	Bancoora, s.s. ...	26 Nov., 5:30 a.m.	26 Nov., 6:30 a.m.	Calcutta, via Adelaide and Melbourne.	A. Langton ...	None	B. I. S. N. Co.; Burns, Philp, & Co.	Cholera in India.	European.. Asiatic ...	14 ..	11 80	...	...	Same as above.
112	Asloun, s.s.	27 Nov., 1 p.m.	27 Nov., 2 5 p.m.	Java, via Adelaide and Melbourne.	Jas. Murray ...	None	Gilchrist, Watt, & Co.	Cholera in Java.	European..	...	30 30	...	...	Same as above.
113	Fortuna, barque (Norwegian).	9 Dec., 8:15 a.m.	9 Dec., 10:15 a.m.	Santos (South America).	L. Hansen ...	None	Dangar, Gedye, & Co.	Yellow fever in Santos.	European..	...	16 16	...	...	All fresh water discharged, and tanks cleansed and limewashed; bilges pumped out and disinfected with solution of corrosive sublimate. Captain reports that all parts of the vessel, including the holds, were fumigated with sulphur for twelve hours after leaving Santos, and then cleansed with a solution of carbolic acid.
114	Gulf of Taranto, s.s.	9 Dec., 9:10 a.m.	9 Dec., 10:15 a.m.	Biogo	R. Hudson ...	None	A. Macarthur & Co.	Cholera in Japan.	European	1	38 39	...	...	All fresh water discharged, and tanks cleansed and limewashed; bilges pumped out, and sea-water let in until the discharge was perfectly clear. All parts of the vessel in good sanitary condition.
115	Alberta, s.s.	10 Dec., 1:30 p.m.	10 Dec., 2:30 p.m.	Tehio, N.C. (from London)	G. W. Davies...	None	H. W. Henderson	Cholera in London.	European..	1	35 36	...	...	Same as above.
116	Tsinan, s.s.	11 Dec., 6 a.m.	11 Dec., 7 a.m.	Kobe, via Foo- chow, Hong Kong, and Queensland ports.	Geo. Ramsay...	G. Reid	China Steam Navigation Co.; Lorimer, Rome & Co.	Cholera in Japan & China.	European.. Asiatic ..	10 ...	11 109	...	...	Same as above.
117	Willow Branch, s.s.	18 Dec., 9:15 a.m.	18 Dec., 10 a.m.	Sourabaya, via Adelaide.	A. Anderson ...	None	Gilchrist, Watt, & Co.	Cholera in Java.	European.. Coasting pilot.	.. ..	28 1	...	...	Cholera regulations carried out at the port of Adelaide. The Superintendent satisfied on inspection that these regulations had been carried. All parts of the vessel in good sanitary condition.
118	Tartar, s.s.	22 Dec., 6:30 a.m.	22 Dec., 9 5 a.m.	Japan, via Hong Kong and Queensland ports.	D. E. Bailey ...	None	Mogul Line; Burns, Philp, & Co.	Cholera in Japan & China.	European. Asiatic ...	4 ...	9 37	...	...	All fresh water discharged and tanks cleansed and limewashed; bilges pumped out and sea-water let in until the discharge was perfectly clear. All parts of vessel in good sanitary condition.
119	Bucephalus, s.s.	26 Dec., 6:35 a.m.	26 Dec., 7:40 a.m.	Calcutta, via Adelaide and Melbourne.	J. M. Hay	None	Cowlshaw Bros.	Cholera in India.	European.. Asiatic ..	2 ..	7 45	...	...	Same as above.
120	Menmuir, s.s. ...	30 Dec., 10:25 a.m.	30 Dec., 11:15 a.m.	Hong Kong, via Queens- land ports.	H. Craig	None	E. & A.S.N. Co.; Gibbs, Bright, & Co.	Cholera in China.	European.. Asiatic ...	3 2	10 65	...	...	Same as above.
121	Changaha, s.s. ...	30 Dec., 11:30 a.m.	30 Dec., 12:30 p.m.	Hong Kong, via Queensland ports.	J. E. Williams	W.F.C. Lawson	China S.N. Co.; Lorimer, Rome, & Co.	Cholera in China.	European. Asiatic ...	17 10	11 83	...	...	Same as above.
										27	94	121		

C.

RETURN of Vessels Quarantined and specially dealt with at Newcastle during the year 1893.

No.	Name of Vessel.	Arrived.	Released	Where from.	Master.	Surgeon.	Agents.	Cause of Detention	Souls on board on arrival.				Landed and Detained.	Action taken.
									Nationality.	Passen- gers.	Crew.	Total.		
1	Brussels, barque	6 Jan., 2 a.m.	6 Jan., 2 30 p.m.	Santos	J. J. Alsop ...	None	Dalgety & Co. ...	Yellow fever at Santos.	European..	...	19	19	..	Fresh water discharged, tanks fumigated, limowashed, vessel disinfected, and sand ballast discharged at sea.
2	Orellana, barque	16 Jan., 6 45 p.m.	16 Jan., 10 30 p.m.	Santos	Fulton Gibb ...	None	J. & A. Brown ...	Yellow fever at Santos	European..	...	17	17	...	Vessel in stone ballast; otherwise same as last.
3	Alexander Black, barque.	22 Jan., 1 p.m.	23 Jan., 5 30 a.m.	Monte Video...	R. McGeo	None	R. B. Wallace ...	Monte Video a proclaimed port.	European..	...	23	23	...	Sand ballast lightered to sea; otherwise same as last.
4	Aboulir Bay, barque.	24 Jan., 1 p.m.	24 Jan., 5 15 p.m.	Sourabaya ...	C. Wakcham...	None	J. & A. Brown ...	Sourabaya a proclaimed port.	European..	...	19	19	...	Same as last.
5	Caradog, barque	25 Jan., 6 a.m.	25 Jan., 1 15 p.m.	Buenos Ayres...	D. James	None	J. & A. Brown ...	Buenos Ayres a proclaimed port.	European..	...	23	23	...	Same as last.
6	Earl of Dun- more, 4-masted barque.	25 Jan., 5 30 p.m.	25 Jan., 10 p.m.	Rio de Janeiro	Thos. Kay	None	J. & A. Brown ...	Yellow fever at Rio de Janeiro.	European..	1	32	33	...	Vessel in stone ballast; otherwise same as last.
7	Robert S. Bes- nard, barque.	30 Jan., 5 45 p.m.	30 Jan., 10 p.m.	Buenos Ayres...	M. J. C. Andrews	None	J. & A. Brown ...	Buenos Ayres a proclaimed port.	European..	1	15	16	...	Sand ballast lightered to sea; otherwise same as last.
8	Norma, German barque.	31 Jan., 8 30 a.m.	31 Jan., 6 p.m.	Santos	Wm. Ahrens...	None	J. & A. Brown ...	Yellow fever at Santos.	European..	1	11	12	...	Vessel in stone ballast; otherwise same as last.
9	Lamorna, barque.	31 Jan., 9 a.m.	31 Jan., 4 p.m.	Mauritius	D. King	None	J. & A. Brown ...	Small-pox at Mauritius.	European..	1	20	21	...	Same as last.
10	Beacon Rock, ship.	31 Jan., 9 30 a.m.	31 Jan., 3 p.m.	Rio de Janeiro	A. J. Kain ...	None	Dalgety & Co. ...	Yellow fever at Rio de Janeiro.	European..	...	27	27	...	Same as last.
11	Abercarne, ship	31 Jan., 10 30 a.m.	31 Jan., 2 p.m.	Monte Video...	Wm. Brown ...	None	Earp, Gillam, & Co.	Monte Video a proclaimed port.	European..	...	20	20	...	Sand ballast lightered to sea; otherwise same as last.
12	Eivion, barque...	31 Jan., 12 45 p.m.	31 Jan., 5 45 p.m.	Buenos Ayres...	Wm. Davies ...	None	R. B. Wallace ...	Buenos Ayres a proclaimed port.	European..	...	20	20	...	Same as last.
13	Mobile Bay, barque.	7 Feb., 3 40 p.m.	7 Feb., 7 30 p.m.	Santos	H. L. Tozer ...	None	J. & A. Brown ...	Yellow fever at Santos.	European..	...	18	18	...	Vessel in stone ballast; otherwise same as last.
14	British Empire ship.	12 Feb., 7 a.m.	12 Feb., 10 a.m.	Rio de Janeiro	Wm. Kydd ...	None	J. & A. Brown ...	Yellow fever at Rio de Janeiro.	European..	...	29	29	...	Same as last.
15	CoJarbank, four- masted barque	14 Feb., 12 45 p.m.	14 Feb., 4 30 p.m.	La Plata.....	A. W. Moody..	None	R. B. Wallace ...	La Plata a proclaimed port.	European..	...	35	35	...	Sand ballast lightered to sea; otherwise same as last.
16	Glennalvon, ship	14 Feb., 10 p.m.	15 Feb., noon.	Rio de Janeiro	F. Andrews ...	None	J. & A. Brown ...	Yellow fever at Rio de Janeiro.	European..	...	31	31	..	Same as last.
17	Tuieri, s.s.	7 March, 10 45 a.m.	7 March, 1 p.m.	Batavia	C. Spink.....	None	Dalgety & Co. ...	Batavia a proclaimed port.	European..	...	28	28	...	Salt-water ballast; otherwise same as last.

RETURN of Vessels Quarantined, &c., at Port of Newcastle during the year 1893—continued.

No.	Name of Vessel.	Arrived.	Released.	Where from.	Master.	Surgeon.	Agents.	Cause of Detention.	Souls on board on arrival.				Landed and Detained	Action taken.
									Nationality.	Passen-ger.	Crew.	Total.		
18	Stockbridge, ship.	8 March 7 a.m.	8 March, 2 30 p.m.	Rio de Janeiro	P. J. Paynter ..	None	R. B. Wallace ...	Yellow fever at Rio de Janeiro.	European..	...	29	20	...	Fresh water discharged, tanks fumigated, lime-washed, vessel disinfected; vessel in stone ballast.
19	Gateacre, ship ..	10 March, 12 30 p.m.	10 March, 5 15 p.m.	Santos	T. C. Carlton...	None	J. & A. Brown ...	Yellow fever at Santos.	European..	...	21	21	...	Sand ballast lightered to sea; otherwise same as last.
20	King-port, ship	13 March, 1 30 p.m.	13 March, 6 p.m.	Rio de Janeiro	J. W. Knox ..	None	J. & A. Brown ..	Yellow fever at Rio de Janeiro.	European..	3	17	20	...	Vessel in stone ballast; otherwise same as last.
21	Scottish Isles, ship.	13 March, 2 30 p.m.	13 March, 6 p.m.	Rio de Janeiro	D. Nicoll	None	R. B. Wallace ...	Yellow fever at Rio de Janeiro.	European..	...	28	28	...	Same as last.
22	Duntrane, ship.	18 March, 11 30 a.m.	18 March, 5 30 p.m.	Colombo	J. C. B. Jarvis	None	J. & A. Brown ..	Colombo a proclaimed port.	European..	...	23	23	...	Sand ballast lightered to sea; otherwise same as last.
23	Clitus, s.s.	5 April, 10 15 a.m.	5 April, 10 30 a.m.	Karachi	W. Frith	None	J. M. Hyde	Karachi a proclaimed port.	European..	...	57	57	...	Same as last.
24	Monrovia, ship.	6 April, 1 p.m.	6 April, 6 30 p.m.	Rio de Janeiro	J. M. Perry ...	None	J. & A. Brown ...	Yellow fever at Rio de Janeiro	European..	3	23	26	...	Vessel in stone ballast; otherwise same as last.
25	Lodestar, ship...	19 April, 12 30 p.m.	19 April, 3 30 p.m.	Buenos Ayres..	P. Nowlan.....	None	J. & A. Brown ...	Buenos Ayres a proclaimed port.	European..	1	26	27	...	Sand ballast lightered to sea; otherwise same as last.
26	Earl of Hope- toun, ship.	24 April, 10 45 a.m.	24 April, 3 p.m.	Rio de Janeiro	J. Hall	None	J. & A. Brown ...	Yellow fever at Rio de Janeiro.	European..	1	27	28	...	Vessel in stone ballast; otherwise same as last.
17	Olivebank, 4-masted barque.	24 April, 9 p.m.	25 April, 11 30 a.m.	Rio de Janeiro	J. N. Petrie ...	None	R. B. Wallace ...	Yellow fever at Rio de Janeiro.	European..	...	36	36	...	Same as last.
28	Morna, ship.....	28 April, 12 15 p.m.	28 April, 7 p.m.	Rio de Janeiro	W. Menmuir...	None	D. Williams	Yellow fever at Rio de Janeiro.	European..	...	26	26	...	Same as last.
29	Houghton Tower, ship	29 April, 12 45 p.m.	29 April, 6 p.m.	Mauritius	R. G. Robinson	None	J. & A. Brown ...	Mauritius a proclaimed port.	European..	1	30	31	...	Same as last.
30	William Mitchell, ship.	30 April, 9 30 a.m.	30 April, 2 p.m.	Rio de Janeiro	J. T. Cutting...	None	J. & A. Brown ...	Yellow fever at Rio de Janeiro.	European..	...	29	29	...	Same as last.
31	Fusadale, 4-masted barque.	30 April, 2 30 p.m.	30 April, 5 p.m.	Monte Video...	J. H. Stiven ...	None	J. & A. Brown ...	Monte Video a proclaimed port.	European..	...	30	30	...	Sand ballast lightered to sea; otherwise same as last.
32	Harvia, ship ...	1 May, 6 30 a.m.	1 May, noon.	Rio de Janeiro	C. O. Allen ...	None	J. & A. Brown ...	Yellow fever at Rio de Janeiro.	European..	...	22	22	...	Vessel in stone ballast; otherwise same as last.
33	Nicosia, barque	1 May, 10 a.m.	1 May, 1 p.m.	Rio de Janeiro	W. R. Cole ...	None	R. B. Wallace ..	Yellow fever at Rio de Janeiro.	European..	2	15	17	...	Same as last.
34	Glenafton, barque.	1 May, 11 30 a.m.	1 May, noon.	Mauritius	W. Kilgour ...	None	R. B. Wallace ...	Mauritius a proclaimed port.	European..	...	21	21	...	This vessel called off the port for supplies, but the Customs would not permit bonded stores to be placed on board until inspected by the Health Officer.
35	St. Mirren, ship	3 May, 2 p.m.	3 May, 6 p.m.	Rio de Janeiro	R. Ramsay.....	None	J. & A. Brown ..	Yellow fever at Rio de Janeiro.	European..	...	24	24	...	Vessel in stone ballast; vessel disinfected, all fresh water discharged and tanks fumigated and lime-washed.

RETURN of Vessels Quarantined, &c., at Port of Newcastle during the year 1893—continued.

No.	Name of Vessel.	Arrived.	Released.	Where from.	Master.	Surgeon.	Agents.	Cause of Detention.	Souls on board on arrival.				Landed and Detained.	Action taken.
									Nationality.	Passen- gers.	Crew.	Total.		
36	Blackbraes, ship	5 May, 11:15 a.m.	6 May, 3:30 p.m.	Rio de Janeiro	D. M'Leod.....	None	J. & A. Brown ...	Yellow fever at Rio de Janeiro.	Mixed ...		31	31	...	Vessel in stone ballast; vessel disinfected; all fresh water discharged; tanks fumigated and limewashed.
37	Speke, ship	6 May, 2 p.m.	6 May, 6:15 p.m.	Rio de Janeiro	E. Wainwright	None	R. B. Wallace ...	Yellow fever at Rio de Janeiro.	European..		29	29	...	Same as last.
38	Duleep Singh, barque.	7 May, 7 a.m.	7 May, 3 p.m.	Rio de Janeiro	J. Prideaux ...	None	Dalgety & Co. ...	Yellow fever at Rio de Janeiro	European..		22	22	...	Same as last.
39	Rothiemay, barque.	12 May, 2:15 p.m.	12 May, 6:30 p.m.	Rio de Janeiro	D. S. Mills.....	None	R. B. Wallace ...	Yellow fever at Rio de Janeiro.	European..	3	16	19	...	Same as last.
40	Nemesis, steamer.	12 May, 3 p.m.	12 May, 6 p.m.	Western Aus- tralia.	J. F. Morrison	None	Huddart, Parker, & Co.	Western Aus- tralian ports proclaimed	European ..		32	32	...	Vessel in salt water ballast; the crew's quarters, &c., disinfected.
41	Soudan, ship ...	1 June, 10 p.m.	2 June, 3 p.m.	Rio de Janeiro.	J. Donald	None	J. & A. Brown ...	Yellow fever at Rio de Janeiro.	European..		24	24	...	Vessel in stone ballast; vessel disinfected; fresh water discharged; tanks fumigated and limewashed.
42	Lonsdale, ship...	2 June, 12:30 p.m.	2 June, 6 p.m.	Western Aus- tralia.	J. Fraser	None	J. & A. Brown ...	Western Australian ports proclaimed.	European..		27	27	...	Vessel in stone ballast; the crew's quarters, &c., and disinfected.
43	Philemene, ship	20 June, 10 a.m.	20 June, 2 p.m.	Rio de Janeiro.	J. D. Haswell..	None	J. & A. Brown ..	Yellow fever at Rio de Janeiro.	European..	1	25	26	...	Vessel in stone ballast; vessel disinfected; fresh water discharged, and tanks fumigated and limewashed.
44	Margaret A. B. Carswell, bq.	24 June, 2:45 p.m.	24 June, 6 p.m.	Santos	C. C. Planck ..	None	J. & A. Brown ...	Yellow fever at Santos	European..	1	20	21	...	Sand ballast lightered to sea; otherwise same as last.
45	Eddystone, steamer.	26 June, 7 a.m.	28 June, 11 a.m.	Melbourne.....	H. Stron	None	M'Ilwraith & Co.	Small-pox en route from Western Australia.	European..		31	31	...	This vessel was not granted pratique, but was permitted to load under the supervision of the Quarantine Officer and the Water Police.
46	Cambuskenneth, ship.	3 July, 8 p.m.	4 July, 9 a.m.	Rio de Janeiro.	D. S. Cromarty	None	R. B. Wallace ...	Yellow fever at Rio de Janeiro.	European..		29	29	...	Vessel in stone ballast; vessel disinfected; fresh water discharged, and tanks fumigated and limewashed.
47	Firth of Clyde, barque.	24 July, 9 p.m.	25 July, 12:30 p.m.	Rio de Janeiro.	R. M'Aulay ...	None	R. B. Wallace ...	Yellow fever at Rio de Janeiro.	European..		22	22	...	Same as last.
48	Metropolis, 4-m. barque.	23 Aug., 10 a.m.	23 Aug., 5 p.m.	Rio de Janeiro.	W. Richards...	None	Gibbs, Bright, & Co.	Yellow fever at Rio de Janeiro	European..		25	25	...	Same as last.
49	Marlborough Hill, 4-m. bq.	27 Aug., 9:30 p.m.	28 Aug., 3 p.m.	Mauritius	W. Lang	None	J. & A. Brown ..	Mauritius a proclaimed port.	European..		30	30	...	Same as last, except that the fresh water was not dealt with.
50	Pythomene, ship	17 Oct., 8 a.m.	17 Oct., noon.	Mauritius	A. M'Ausland..	None	J. & A. Brown ...	Mauritius a proclaimed port.	European..		29	29	...	Same as last.
51	Spirit of the Morning, barque.	19 Oct., 4:30 p.m.	20 Oct., 9 a.m.	Rio de Janeiro	C. H. Paige ...	None	R. B. Wallace ...	Yellow fever at Rio de Janeiro.	European..	2	14	16	...	Sand ballast lightered to sea; vessel disinfected; fresh water discharged, and tanks fumigated and limewashed.
52	Jessonda, German barque.	21 Oct., 1:30 a.m.	21 Oct., 9:30 a.m.	Hamburg	A. Oesselmann	None	R. B. Wallace ...	European ports proclaimed.	European..		17	17	...	Vessel in stone ballast; otherwise same as last.
53	Kirkloch, barque	21 Oct., 1 a.m.	21 Oct., 11 a.m.	Mauritius	W. B. Casson...	None	R. B. Wallace ...	Mauritius a proclaimed port.	European..	2	17	19	...	Same as last.

RETURN of Vessels Quarantined, &c., at Port of Newcastle during the year 1893—continued.

No	Name of Vessel.	Arrived.	Released.	Where from.	Master.	Surgeon.	Agents.	Cause of Detention.	Souls on board on arrival.				Landed and Detained.	Action taken.
									Nationality.	Passen- gers.	Crew	Total.		
54	Terpsichora, German ship.	21 Oct., 6:30 a.m.	21 Oct., 6 p.m.	Colombo.....	W. Keppel ...	None	Dalgety & Co.	Colombo a proclaimed port.	European..	...	26	26	..	Sand ballast lightered to sea; vessel disinfected; fresh water discharged, and tanks fumigated and limewashed.
55	Glenbreck, four-masted barque.	26 Oct., 2:30 p.m.	26 Oct., 7 p.m.	Rio de Janeiro	A. Burd	None	J. & A. Brown.	Yellow fever at Rio de Janeiro.	European ..	...	29	29	..	Vessel in stone ballast; otherwise same as last.
56	Easteroft, ship...	6 Nov., 5:45 p.m.	7 Nov., 7:30 a.m.	Barrow, Eng-land.	J. T. Rimmer...	None	J. & A. Brown.	European ports proclaimed.	European..	...	23	23	..	Sand ballast lightered to sea; otherwise same as last.
57	Eskdale, ship ...	11 Nov., 11:15 a.m.	11 Nov., 5 p.m.	Monte Video...	J. Howatson ...	None	J. & A. Brown ...	Monte Video a proclaimed port.	European..	...	24	24	..	Same as last.
58	Era, steamer ...	20 Nov., 4:30 p.m.	20 Nov., 5:30 p.m.	Probolinggo (Java).	T. Moore	None	Howard Smith & Co.	Ports of Java proclaimed.	European..	...	29	29	..	Crew's quarters, &c., disinfected; no fresh water on board.
59	Lindores Abbey, barque.	22 Nov., 7 a.m.	22 Nov., noon.	Mauritius	A. G. Miller ...	None	J. & A. Brown ...	Mauritius a proclaimed port.	European..	...	18	18	..	Vessel in stone ballast; crew's quarters, &c., disinfected.
60	Quillota, barque	29 Nov., 8:30 a.m.	29 Nov., 2 p.m.	Mauritius	A. G. Hitchins	None	R. B. Wallace .	Mauritius a proclaimed port.	European..	...	16	16	..	Same as last, except that the sand ballast was lightered to sea.
61	River Falloch, ship.	2 Dec., 6 a.m.	2 Dec., noon.	Macassar	D. Young	None	R. B. Wallace .	Macassar a proclaimed port.	European..	...	22	23	..	Fresh water discharged, and tanks fumigated and limewashed; crew's quarters, &c., disinfected.
62	Culmore, ship ..	13 Dec., 9:30 a.m.	13 Dec., 11:30 a.m.	La Plata	J. Reid	None	Dalgety & Co. .	La Plata a proclaimed port.	European..	1	26	27	..	Crew's quarters, &c., disinfected.
63	Abercarne, barque.	13 Dec., 12:15 p.m.	13 Dec. ...	Campana	W. Lewis	None	J. & A. Brown ...	Campana a proclaimed port.	European..	...	15	15	..	Same as last.
64	Jennie Parker, barque.	13 Dec., 5:45 p.m.	13 Dec., 10 p.m.	Buenos Ayres..	W. J. Foster ..	None	J. & A. Brown ...	Buenos Ayres a proclaimed port.	European..	2	14	16	..	Same as last.
65	River Nith	14 Dec., 7:30 a.m.	14 Dec., 1 p.m.	Santos	D. Morgan.....	None	Dalgety & Co. .	Yellow fever at Santos	European..	..	19	19	..	Vessel in stone ballast; vessel disinfected; fresh water discharged, and tanks fumigated and limewashed.
66	Arnamurchan, ship.	14 Dec., 9 a.m.	14 Dec., 1 p.m.	Buenos Ayres .	G. W. Crosby.	None	Dalgety & Co. .	Buenos Ayres a proclaimed port.	European..	...	26	26	..	Crew's quarters, &c., disinfected.
67	Savona, ship ...	19 Dec., 6:30 a.m.	19 Dec., noon.	Buenos Ayres..	G. W. Starling	None	J. & A. Brown ...	Buenos Ayres a proclaimed port.	European..	...	19	19	..	Same as last.
68	Gudrun, German barque.	19 Dec., 4:45 p.m.	19 Dec., 10 p.m.	La Plata	F. Schönwandt	None	Gibbs, Bright, & Co.	La Plata a proclaimed port.	European..	1	22	23	..	Same as last.
69	King Arthur, ship.	26 Dec., 6:20 p.m.	26 Dec., 11 p.m.	Sourabaya	D. M'Pherson..	None	J. & A. Brown ...	Sourabaya a proclaimed port.	European..	...	27	27	..	Same as last.
70	Osseo, barque ...	31 Dec., 2:30 p.m.	31 Dec., 7 p.m.	Rio de Janeiro	R. Eoggs	None	J. & A. Brown ...	Yellow fever at Rio.	European..	...	20	20	..	Vessel in stone ballast; vessel disinfected; fresh water discharged, and tanks fumigated and limewashed.
71	Helenslea, barque.	31 Dec., 2:30 p.m.	31 Dec., 6:30 p.m.	Buenos Ayres..	R. J. Milne ...	None	J. & A. Brown ...	Buenos Ayres a proclaimed port.	European..	...	23	23	..	Crew's quarters, &c., disinfected.

D.

RETURN of Proclamations under the Quarantine Acts in force and rescinded during the year 1893.

Date of Proclamation.	Against vessels arriving from—	Date of Rescission.
17 June, 1891.....	The Empire of China, the British Possession of Hongkong, and other ports or places in the East	} Still in force.
15 October, 1891	The Colony of Mauritius	
8 April, 1892	The East Coast of South America.....	
6 July, 1892 ..	Colombo	} 7 February, 1893.
9 September, 1892 ..	Europe	
26 April, 1893	Western Australia	20 July, 1893.
12 July, 1893 ..	France	19 December, 1893.
22 August, 1893.....	Mediterranean Ports	27 December, 1893.
9 October, 1893	Europe	27 December, 1893.

E.

RETURN of Bills of Health issued to Outward-bound Vessels from the Ports of New South Wales, during the year 1893 :—

Port of—	Number of Bills of Health Issued.
Sydney	*1,003
Newcastle	175
Total	1,178

* Of this number 63 were "black" or "foul" Bills of Health, issued from October 24th to November 14th, 1893, in consequence of the occurrence of a case of smallpox in the city.

F.

RETURN of Vessels Cleared under the provisions of the Imperial Passengers' Acts, 18 and 19 Vic. No. 119, from the Ports of New South Wales, during the year 1893 :—

Port of—	Number of Vessels Cleared.
Sydney	40
Newcastle .....	...
Total	40

NOTE.—Captain J. Vine Hall performed the duties of Marine Surveyor during the year 1893. Up to March 22nd, 1893, the duties of Inspecting Medical Officer were, in the absence on leave of Dr. A. Watson Munro, attended to by Dr. Sydney Jamieson; after that date by Dr. Munro himself.

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

APPOINTMENT OF MR. W. J. GUNNING TO THE WOLLONGONG
HARBOUR TRUST.

(CORRESPONDENCE IN CONNECTION THEREWITH.)

Ordered by the Legislative Assembly to be printed, 11 April, 1894.

RETURN to an *Order* of the Legislative Assembly, dated 28th March, 1894, That there be laid upon the Table of this House,—

“Copies of all Papers and Correspondence in connection with the appointment of Mr. W. J. Gunning as representative of the North Illawarra Municipality, on the Wollongong Harbour Trust.”

(*Mr. Nicholson.*)

SCHEDULE.

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No. 1.

The Mayor of North Illawarra to The Colonial Treasurer.

Hon. Sir, Council Chamber, North Illawarra, 1 December, 1893.

I take the liberty of addressing you on a matter which will be brought under your notice, I presume, within the course of a few days, in respect of a vacancy to be filled on the Board of Commissioners of the Wollongong Harbour Trust, in consequence of the North Illawarra Municipal Council having failed to elect such Commissioner, through one of the Aldermen declining to record his vote at the election, the votes recorded being equal, viz., four for each candidate, the candidates being Alderman P. Lahiff and myself.

Two years ago, when this Council was called upon to elect a Commissioner to the Harbour Trust, Alderman Lahiff and myself were then candidates for the office, and notwithstanding that I was the Mayor at that time (which office, I maintain, gave me a precedence), I voluntarily, though very much against the wishes of my supporters, retired, and gave my support to Alderman Lahiff. The

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[770 copies—Approximate Cost of Printing (labour and material), £3 16s. 0d.]

The grounds which I base my appeal to you now against Alderman Lahiff *re* appointment are as follows:—I claim to have the majority of votes of the whole Council in my favour. Allow me to explain so that you may be the better able to grasp the situation. Mr. C. J. Byrnes, the present Chairman of the Harbour Trust, is the proprietor and managing director of the Mount Pleasant Coal-mine. Alderman Lahiff is the nominal manager under Mr. Byrnes. Alderman R. J. Thorne, the only Alderman who did not vote at this election, although in the Council Chamber during the hours of the election, is an employe under Messrs. Byrnes and Lahiff, but he (Alderman Thorne) could not be induced to vote for Mr. Lahiff, and was evidently afraid to vote for myself; yet he (Alderman Thorne) did all that he could to secure my election. I therefore, with every feeling of confidence, respectfully request that you will give to this, my appeal for justice and fair play, your favourable consideration.

I have, &c.,
JOHN PAYNE,
Mayor.

No. 2.

Telegram from Mr. A. Campbell to The Colonial Treasurer.

Wollongong, 4 December, 1893.

MR. JNO. PAYNE, Mayor of North Illawarra, is forwarding letter to you through me, showing cause why he should be appointed Commissioner of Wollongong Harbour Trust to fill vacancy existing owing to deadlock in voting.

A. CAMPBELL.

No. 3.

Memorial to The Honorable John See, M.L.A., Colonial Treasurer.

The humble Memorial of the undersigned,

RESTEECTFULLY SHOWETH,—

That they are Aldermen of the Borough Council of North Illawarra.

That Mr. John Payne is Mayor of the said Council.

That Mr. Payne and Mr. Patrick Lahiff (also an Alderman of the same Council) were candidates at the recent election for the return of a Commissioner to represent that Council on the Wollongong Harbour Trust.

That they voted for Mr. Payne on that occasion.

That the number of votes polled by the two candidates were four each, the ninth member of the Council, Alderman Robert J. Thorne, having declined to record his vote.

That neither of the candidates having polled a majority of the full Council (of nine members), in accordance with the Wollongong Harbour Trust Act, it now devolves upon the Government therefore to fill the vacancy.

That Mr. C. J. Byrnes, the Chairman of the Harbour Trust, is the head of the Mount Pleasant Coal Company, whose working operations are within the Borough of North Illawarra.

That Mr. Patrick Lahiff is the local manager of the said colliery and is also a reputed part owner of the same.

That Mr. John Caldwell, one of the Aldermen who recorded his vote in favour of Mr. Patrick Lahiff, is a contractor in connection with the said colliery.

That Alderman Thorne, who refrained from voting as stated, is also a contractor in connection with the Mount Pleasant Colliery.

That he (Alderman Thorne) was avowedly favourable to the election of Mr. Payne as a Commissioner.

That he was not favourable to the election of Mr. Lahiff as such.

That his (Mr. Thorne's) business connection with the Mount Pleasant Coal Company influenced him not to record his vote for Mr. Payne, which otherwise he would readily have done.

That morally, therefore, a clear majority of five members of the Council, namely, Aldermen Payne, Mackie, Cornford, Bode, and Thorne were in favour of the election of Mr. Payne, and against the election of Mr. Lahiff, who, in addition to himself, had only three other Aldermen (or four in all) to support him.

That the appointment of Mr. Lahiff by the Government to fill the vacancy now existing would be a wrong to the Council of which a minority only is in that gentleman's favour.

That under the circumstances here set forth, Mr. Lahiff, if appointed by the Government, would represent the Borough Council of North Illawarra only in name, while, in fact, he would be a representative of the Mount Pleasant Coal Company in a most objectionable sense—a state of things which your memorialists feel quite assured neither yourself or your Government would knowingly approve or sanction.

That by the appointment of Mr. Lahiff, in view of the facts here stated, the North Illawarra Council would be disfranchised on the Wollongong Harbour Trust.

That by the appointment of Mr. Payne the majority of the Council would be represented, five of the members being favourable to his election as stated, whilst only four favour Mr. Lahiff.

That in every respect Mr. Payne is a most eligible man for the office of a Commissioner of the Wollongong Harbour Trust, he being one of the leading public men of Illawarra for upward of thirty years.

That among the many public services rendered by him he was mainly instrumental in securing the establishment of this very Borough of North Illawarra.

That he was also one of the very foremost members of the Executive Committee of the Wollongong Harbour Trust League that brought the Trust into existence.

Your memorialists, in view of all the important facts here set forth, urge most respectfully, but with all the earnestness of which they are capable, that you will take the premises into your consideration, and having done so, that you will appoint Mr. John Payne to fill the vacancy alluded to in connection with the Wollongong Harbour Trust.

Alderman JOHN D. MACKIE.
Alderman JAMES CORNFORD.
Alderman THEODORE BODE.

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No. 4.

Mr. A. Lysaght to The Colonial Treasurer.

Dear Sir,

Annandale-street, Annandale, 4 December, 1893.

Failing to see you to-day when I called, I take the liberty of leaving this note for you, as my business is important, and one which calls for your immediate attention. It refers to the election of a Commissioner for the Wollongong Harbour Trust. At the polling last Thursday there were two candidates (Messrs. Lahiff and Payne), and each had an equal share of votes. The appointment, I am informed, rests entirely with you. Therefore, if you will give the retiring Commissioner, Mr. Lahiff, the position, I shall esteem it a great favour. No man in the Trust understands the work better. Over twenty years ago he was contractor for Belmore Basin, Wollongong, which he carried out successfully.

Trusting you will be pleased to comply with my request,

I remain, &c.,

ANDREW LYSAGHT.

No. 5.

Henry Clarke, Esq., M.P., to The Colonial Treasurer.

Dear Sir,

Sydney, 5 December, 1893.

I am informed that there is a vacancy in the Wollongong Harbour Trust in consequence of the North Illawarra Council failing to appoint a Commissioner, and have much pleasure in recommending Mr. Wm. John Gunning to fill the vacancy. I may mention that he has been a Commissioner since the foundation of the Trust, but retires on the 16th instant.

I have, &c.,

HENRY CLARKE.

No. 6.

J. B. Nicholson, Esq., M.P., to The Colonial Secretary.

Hon. Sir,

Legislative Assembly, N.S.W., Sydney, 5 December, 1893.

Seeing that the election of a Harbour Trust Commissioner has resulted in a tie-vote, the appointment of said Commissioner devolves upon the Government. The candidates for the position are Mr. P. Lahiff, part owner and manager of Mount Pleasant Colliery, and Mr. John Payne, Mayor of North Illawarra. Believing that Mr. Lahiff is best qualified for the position, without further comment I have much pleasure in recommending his appointment.

I have, &c.,

J. B. NICHOLSON, M.L.A.

No. 7.

The Secretary, Wollongong Harbour Trust, to The Under Secretary for Finance and Trade.

Sir,

Town Hall, Wollongong, 5 December, 1893.

I have the honor to inform you that the Council of the Municipal District of North Illawarra have failed to return a representative on this Board, the vacancy having been created by the retirement of Mr. Patrick Lahiff, by effluxion of time, in terms of the Act.

The Returning Officer reports that there were two candidates nominated, viz.,—

Patrick Lahiff, Esquire, J.P.,

John Payne, Esquire.

The number of candidates exceeding the number of Commissioners to be elected, a ballot took place on the 30th November, with the result that each candidate received four votes, neither having received a majority of votes of the whole of the members of the Council, pursuant to clause 6 of the Act.

I am directed to respectfully draw your attention to clause 17 of the "Wollongong Harbour Trust Act of 1889," which provides for the appointment of a Commissioner by His Excellency the Governor caused by such failure.

I have, &c.,

C. E. EGGLESE,

Secretary.

No. 8.

Mr. C. W. Marshall to The Under Secretary for Finance and Trade.

Dear Sir,

Savings Bank of New South Wales, Sydney, 16 December, 1893.

My friend Mr. Gunning, of Wollongong, informs me there is a vacancy in the Wollongong Harbour Trust, and that he is a candidate for such vacancy. I should be glad if you could bear his name in mind.

He is a son-in-law of Mr. Henry Clarke, M.P., is a good business man, is one of our local trustees at Wollongong and has been on the Trust already, and is a popular man locally. If there is anything you can do for him I shall esteem it a great favour. The vacancy mentioned is the representation of the North Illawarra Municipal Council on the Trust.

I am, &c.,

C. W. MARSHALL.

No. 9.

No. 9.

Mr. A. Campbell to The Colonial Treasurer.

Sir,

Wollongong, 20 December, 1893.

Re the vacancy in connection with the North Illawarra Council on the Wollongong Harbour Trust, I desire (as already intimated through your Under Secretary) to recommend Mr. John Archibald Beatson, J.P., Mayor of Wollongong, as a most suitable and generally acceptable person, for the said position.

Should you decide, however, not to appoint that gentleman, I would strongly recommend Mr. William John Gunning as the next most eligible man for the office. He has been a Commissioner of the Trust from the outset until to-day, when he lost his seat by one vote only, although every vote polled here (at Wollongong) was recorded in his favour.

Under the circumstances, and failing the appointment of Mr. Beatson, than whom I could recommend no other any stronger, the appointment of Mr. Gunning would give entire and even special satisfaction at this juncture.

I am, &c.,

A. CAMPBELL.

No. 10.

Minute Paper for the Executive Council.

Subject:—Appointment of a Commissioner to the Wollongong Harbour Trust Board to represent the Council of the Municipal District of North Illawarra.

The Treasury, New South Wales, Sydney, 27 December, 1893.

A VACANCY having occurred on the Wollongong Harbour Trust Board through the retirement, by effluxion of time, of Patrick Labiff, Esq., J.P., representative of the Council of the Municipal District of North Illawarra, and that Council having failed to elect a Commissioner in his place,—neither of the two candidates for the vacant position being able to secure a majority of votes of the whole of the Council as required by section 6 of the “Wollongong Harbour Trust Act of 1889,” it devolves upon the Colonial Treasurer, under the provisions of the 17th section of the said Act, to recommend a fit and proper person to fill the vacancy, and I therefore recommend, for the approval of His Excellency the Governor and the Executive Council, that such vacancy be filled by the appointment of William John Gunning, Esquire

JOHN SEE.

The Executive Council approve of the appointment herein recommended.—ALEX. C. BUDGE, Clerk of the Council. Min 93/66, 29/12/93. Approved.—R. W. DUFF, 29/12/93. Confirmed, 2/1/94.

No. 11.

J. B. Nicholson, Esq., M.P., to The Colonial Secretary.

Dear Sir,

Legislative Assembly, N.S.W., Sydney, 3 January, 1894.

I beg most respectfully to remind you that a vacancy still exists on the Wollongong Harbour Trust, and that, according to the provisions of the Act, the appointment rests with the Government. I also beg most respectfully to remind you of a certain recommendation I forwarded you some time ago in connection therewith, and again solicit for it your favourable consideration.

I have, &c.,

J. B. NICHOLSON, M.L.A.

No. 12.

The Under Secretary for Finance and Trade to W. J. Gunning, Esq.

Sir,

The Treasury, New South Wales, Sydney, 5 January, 1894.

I am directed to inform you that His Excellency the Governor-in-Council has been pleased to appoint you a Commissioner to the Wollongong Harbour Trust Board, under the provisions of the 17th section of the “Wollongong Harbour Trust Act of 1889,” to represent the Council of the Municipal District of North Illawarra.

Copy of *Gazette* notice of such appointment is enclosed herewith.

I have, &c.,

F. KIRKPATRICK,

Under Secretary for Finance and Trade.

No. 13.

W. J. Gunning, Esq., to The Under Secretary for Finance and Trade.

Sir,

Wollongong, 8 January, 1894.

I have the honor to acknowledge having received your letter, dated 5th instant, in which you inform me that His Excellency the Governor-in-Council has been pleased to appoint me a Commissioner to the Wollongong Harbour Trust Board to represent the Council of the Municipal District of North Illawarra, and I beg to express my gratefulness for the confidence thus reposed in me.

I remain, &c.,

W. J. GUNNING.

No. 14.

The Council Clerk, Borough of North Illawarra, to The Colonial Treasurer.

Sir, Borough of North Illawarra, Council Chambers, North Illawarra, 19 January, 1894.

I have the honor to forward copy of resolution passed by the North Illawarra Municipal Council, having reference to the appointment of Mr. W. J. Gunning as its representative on the Wollongong Harbour Trust (members present: Aldermen Lahiff, Williams, O'Neil, Caldwell, and Thorne), viz.:—

“That this meeting of the North Illawarra Council strongly protests against the appointment of Mr. W. J. Gunning, as Commissioner, to represent them on the Wollongong Harbour Trust, he, Mr. Gunning, not being one of their body or a ratepayer.”

I am further to respectfully request that you would annul the said appointment of Mr. Gunning, and appoint in his stead one of the aldermen belonging to the Council.

I have, &c.,
HENRY STUMBLES,
Council Clerk.

No. 15.

J. B. Nicholson, Esq., M.P., to The Colonial Treasurer.

Dear Sir, Legislative Assembly, N.S.W., Sydney, 25 January, 1894.

In case I cannot see you to-day, as yesterday, I desire to say the appointment alluded to in the enclosure is most unfair and unjust to the ratepayers of North Illawarra. Mr. Gunning is not a resident of that municipality, and consequently has not the slightest claim to the position. Your action, or that of the Ministry, is most unpopular, and is generally censured by ratepayers of North Illawarra. I trust, therefore, that you will reconsider the matter, and give the commissionership to one of the Council's nominees. This I consider to be the only fair way to do.

I have, &c.,
J. B. NICHOLSON, M.L.A.

No. 16.

The Under Secretary for Finance and Trade to J. B. Nicholson, Esq., M.P.

Sir, The Treasury, New South Wales, Sydney, 29 January, 1894.

I am directed by the Colonial Treasurer to acknowledge receipt of your letter of the 25th instant, with reference to the appointment of Mr. W. J. Gunning to the Wollongong Harbour Trust Board to represent the Council of the Municipal District of North Illawarra, and to inform you in reply that such appointment cannot now be interfered with. Mr. See desires me to add, however, that the appointment in question was made before your letter (addressed to the Colonial Secretary) reached him.

I have, &c.,
F. KIRKPATRICK,
Under Secretary for Finance and Trade.

No. 17.

J. B. Nicholson, Esq., M.P., to The Under Secretary for Finance and Trade.

Sir, Parliament House, Sydney, 30 January, 1894.

In your communication just now to hand, *re* Government appointment of Commissioner for the representation of North Illawarra on the Wollongong Harbour Trust, you state that the appointment was made prior to my letter being received by the Premier. I certainly don't know when my letter was received, but I do know that it was written here at the House, and forwarded in the usual manner several days before Mr. Gunning contested the seat he held before, so that it is scarcely likely that Mr. Gunning would have contested a seat had he already got an appointment. The statement is simply ridiculous, and, I think, the appointment ought yet to be cancelled.

Yours, &c.,
J. B. NICHOLSON, M.L.A.

1894.

NEW SOUTH WALES.

FISHERIES ACT, 1881.

(AMENDED REGULATION UNDER.)

Presented to Parliament pursuant to Act 44 Vic. No. 26, sec. 9.

Chief Secretary's Office, Sydney, 15th March, 1894.

His Excellency the Governor, with the advice of the Executive Council, has been pleased, in accordance with the provisions of the "Fisheries Act, 1881," to make the subjoined amended Regulation relating to priority among netters.

GEORGE R. DIBBS.

PRIORITY AMONG NETTERS.

14. The right of first shooting and hauling a net on any fishing-ground shall belong to the licensed fisherman who first arrived on the ground with his boat and net ready for shooting; and the next turn shall belong to the licensed fisherman who arrived next after such first-mentioned person, and so on in order of arrival. An unlicensed fisherman shall not be entitled to shoot a net on any fishing-ground until every licensed fisherman, then being on the ground with boat and gear ready for shooting, shall have had his turn. Two or more turns may be taken at the same time if the water to be fished permits of double-banking, but no net shall be shot round an inner net within a boat's length of the cork-line of such net.

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

AUSTRALIAN HARDWOOD BLOCKS.
(PAPERS RESPECTING.)

Ordered by the Legislative Assembly to be printed, 7 June, 1894.

[Laid upon the Table of the House in answer to Question No. 10, of 6th June, 1894.]

Question.

(10.) AUSTRALIAN HARDWOOD BLOCKS:—MR. STEVENSON asked THE SECRETARY FOR PUBLIC WORKS,—

(1.) Has his attention been called to a paragraph in the *Sydney Morning Herald* of the 18th May, giving an account of a paper read at the Royal Society by Mr. Walter A. Smith, M.I.C.E., which states that if Australian hard woods were used in London street pavements, instead of soft woods, a saving of about £11,000 would result in every mile of road, during a period of twenty-one years, besides providing a better pavement than that now in use?

(2) With a view of bringing our Australian hardwood blocks, for street-paving at home, before the authorities in England, would he have a copy of the paper laid upon the Table of this House?

ANSWER.

SCHEDULE.

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No. 1.

R. Hickson, Esq., to The Under Secretary for Public Works.

Dear Sir,

The Society's House, Sydney, 7 June, 1894.

Referring to the question put by Mr. Stevenson, M.L.A., in the House of Assembly, asking that a copy of a paper on wood-blocking, read by Mr. W. A. Smith before the Engineering Section of the Royal Society, be laid on the Table of the House, I have the honor to forward herewith this paper, and place the same at the disposal of the Honorable the Minister for Works, to make whatever use of he may think fit.

I also forward a paper sent by Mr. Smith to the Institute of Civil Engineers, London, on the same subject.

As Mr. Smith makes some strong adverse comments on laying wood-blocks with cement joints (comments with which, I may add, I entirely concur), I forward herewith copy of report from the Government Analyst, Mr. Hamlet, on the subject.

I have, &c.,

ROBT. HICKSON,
Chairman, Engineering Section of the Royal Society.

Paper by Mr. W. A. Smith, read before the Royal Society of New South Wales, on Australian Hard Woods for London Pavements.

THE recent depression, so severely felt in every form of commercial enterprise throughout the Australian Colonies, has made every colonist who has the welfare of Australia at heart to consider in what manner the export trade of the colonies can be strengthened and increased.

Without touching on the question of freetrade and protection, it is evident that the future stability of the colonies will depend, in a great measure, on the establishment of foreign markets for Australian products, and not least in importance among these products for export should be the different Australian hard woods for structural purposes. Some efforts have been made to bring these timbers under notice in England and America, but so far these efforts have produced very poor results. The object of this short paper is to compare the paved-wearing surfaces of roads and streets constructed of yellow deal or pine, which are the timbers generally used in England, with those constructed of Australian hard woods, and if these comparisons could only be brought under the notice of European engineers, and ratepayers, it is highly probable that the result would be beneficial to Australia.

It is assumed that the paving of roads and streets with wood blocks is the best and most economical system known to engineers at the present time for providing a durable wearing surface that will withstand, for a lengthened period, the heavy traffic of cities and towns; and in support of this assumption, the following is a description of the more recent pavements laid down in London and elsewhere, and criticism thereon by English engineers.

In a paper read by Mr. L. H. Isaacs, F.R.I.B.A., before the Society of Arts, on the 15th December last, Sir Benjamin Baker being in the chair, it was stated that the present system of constructing wood pavements in many of the London districts, consisted of laying a concrete foundation 6 inches thick, composed of one part Portland cement to six parts clean sharp river ballast, with a rendered surface on which to lay the blocks. The blocks are of Baltic red-wood or Swedish yellow deal, 5 inches deep, and pickled in creosote. They are laid in transverse courses, with a $\frac{1}{4}$ -inch joint, which is run in with asphalt to a depth of 1 inch, while the remainder of the joint is made up with cement run in flush with the surface of the blocks. On completion of this the whole surface is tarred and sanded, after which the traffic is turned on. This description agrees with others which have been written within the last four years on the present London system, with the exception that in some recent cases a close joint has been adopted.

Mr. Isaacs quotes from a letter received by him from the "Improved Wood Pavement Company"—which states that during the past four years the increase in the area of wood-paving is very remarkable. From 1872 to 1889 inclusive, this Company laid 1,030,000 square yards, equal to an average of 58,000 square yards per annum; while from 1890 to 1893 inclusive, 520,000 square yards were laid, equal to an average of 130,000 square yards per annum. This year (1893) the Company is paving upwards of 130,000 square yards in the city and surrounding districts of London. In concluding his remarks on wood-paving for London, Mr. Isaacs states that the advantages of wood pavements are:—

1. It is, as yet, absolutely the least noisy of all pavements.
2. It gives the minimum of traction, with the exception of asphalt.
3. It is comparatively clean, as, if properly formed, it should make little or no dirt.
4. In the event of a horse falling on it, he can rise more easily than on a granite or asphalt pavement.

In discussing the above-mentioned paper, Mr. Stevenson remarked that he wished to record his opinion in favour of wood. At South Kensington a census had been taken among drivers of different vehicles upon the subject, when between 80 per cent. to 90 per cent. voted in favour of wood.

The fact that the use of wood was increasing to an immense extent, showed that there was some practical benefit in it.

Mr. Deacon, M.I.C.E., remarked that "wood pavement, if properly gravelled, was delightful in all senses except one, viz., a sanitary sense."

In discussing a paper read by Mr. Strachan, of Chelsea, before the Society of Engineers, in 1890, Mr. Joseph Gordon remarked that the tendency in London was towards silent pavements, for which wood, as a material, was undoubtedly the best.

The foregoing quotations show plainly that wood pavements are fast coming into favour, but as the object of this paper will be served by comparing the London wood pavements, the total length of which is approximately 65 miles, with those of Sydney, the total length of which is 12 miles, in which latter city Australian hard woods have been used, and in order to avoid a one-sided view of the subject, it will be as well to consider, in conjunction with the more favourable criticisms, the following remarks made by English engineers on the demerits of wood as a paving material.

With regard to soft wood, there are two strong objections to its use, viz.:—Its short life under heavy traffic, and its power of absorption. To demonstrate these objections, the following quotations from the two papers before referred to will be of value (soft woods only being considered). Mr. Strachan in his paper recommended the total renewal of blocks every eight years. Mr. Gordon, in discussing Mr. Strachan's paper, gave the life of blocks at Leicester at seven years. Mr. Barber stated that the life of blocks in Hanover Square, London, was eight years. Mr. Lowe said he had a mile of wood-paving in the Edgeware Road which had been down three years, but he did

did not think he could calculate on the pavement being in anything like good condition at the end of the eighth year. From these and numerous other statements by London engineers, it would appear that not more than seven years' life should be calculated upon as the effective life of these pavements.

Looking at the hygienic aspect of a softwood pavement, the following extract from Mr. Isaacs' paper should serve as a warning to the Sydney Council against the introduction of soft woods for the Sydney streets.* Mr. Isaacs remarked that wood pavement has one most serious disadvantage. It offends more than any other pavement against public hygiene. If time would permit, I could quote the opinions given by authorities, both at home and abroad, in proof of this assertion. But I will content myself by asking you to rely on the evidence afforded by my own sense of smell as to this. Let anyone dwell, say, for twenty-four hours by the sea-side, or in the pure air of a rural district, and then travel to town, alighting, for example, at the Victoria Station, the roadways of which, as you know, are paved with wood. What greets him on arrival? The most sickening odour given off by the pavement in question.

You will say this is mainly or entirely due to the circumstance that the wood pavement is under a glass roof on which the rays of the sun at times fall fiercely. But step across the Station yard, and traverse Victoria-street. The same sickening odour follows you. And this leads me to say: "Avoid using wood pavements in narrow streets, or even in comparatively wide streets, when the height of the buildings which abut on the same prevents the free passage of air." Mr. Edmeston, of Paddington, London, had some old blocks tested by Dr. Sedgwick Saunders, who reported them to be saturated with organic matter, chiefly of urine and horse dung, and some blocks had the appearance of a growth of fungi.

After reviewing the conditions under which softwood pavements are constructed in London, the comparative short life of the timbers used, the resulting inconvenience to traffic of a total renewal of blocks every seven or eight years, and the necessary uneven surface and bad condition of the roadway for a year or perhaps two years previous to each renewal, it is a real pleasure to turn to the close-jointed hardwood Sydney pavements, the equal to which we are constantly told by visitors to Sydney is not to be found in any city of the world. It would indeed be a difficult matter to imagine any better pavements than those which have been laid within the last five years, in Macquarie-place, Martin-place, Castlereagh-street, Queen-street, and the southern portion of Newtown Road.

The system of laying these pavements in and around Sydney is very similar to that of other places. If the roadway is being constructed over solid ground, 6 inches of concrete, composed of one part cement to seven parts of Nepean gravel, is laid as a foundation,† but when the roadway passes over made or uncertain ground, it is the practice of the Roads and Bridges Department to put in 9 inches of concrete. The surface of this concrete foundation is rendered with mortar, composed of one part cement to three of clean sharp sand, on which the blocks are laid. The blocks, which are generally of 9 in. x 6 in. x 3 in., are laid, after being tarred, in transverse courses at right angles to the line of traffic, with butt joints.‡ The expansion of blocks is provided against by leaving on each side of the roadway a 2-inch joint between the kerbing and the outer gutter course, and an additional 1-inch joint between two of the other gutter courses. These joints are filled with mastic, and, so far, have given every satisfaction, especially at the broad paving of Queen-street, which, after being open for traffic for eighteen months, has not caused the slightest movement in any one of the kerb-stones through expansion of the wood, whereas in the adjoining pavement at Circular Quay, which was laid with a $\frac{3}{4}$ -inch cement joint between courses and clay expansion joints, not only have the kerb-stones on either side been pushed out of place by the expansion of the blocks, but the footpaths themselves have been partly destroyed. The pavements laid in Sydney during the last five years seem to be as near perfection as it is possible to get them. They are, generally speaking, well designed, well kept, silent, clean, give good foothold for horses, and, as hardwood blocks when laid in these close-jointed pavements will absorb little or no moisture, there are no bad odours to throw off.

The older pavements of Sydney, *i.e.*, those laid prior to 1839, were carried out most religiously on English lines. They were constructed with lateral joints from $\frac{3}{4}$ inch to 1 inch wide, the mistake of which has been discovered and rectified in England as well as here. In some cases cement grouting was used in the joints, which had the effect of dry rotting the blocks, particularly those at Circular Quay. The injurious effect of cement being in contact with timber is very marked after a few years. The author has made many observations in this matter, and in all cases when timber has been embedded in cement concrete for some years dry rot has invariably been found next to the cement. At the Circular Quay pavement every block appears to be more or less affected, while many are almost in a state of collapse. In Gwylt's "Encyclopædia of Architecture" the chemical action setting in between the cement and timber is attributed to the oxygen in cement combining with the carbon in the wood to form carbonic acid gas.

It can be readily understood that this slow chemical action would scarcely be observed in English pavements, even if it existed, to the same degree as it does in Sydney, owing to the short life of the timbers used; for, assuming that the destruction of the timber had fairly commenced in, say, five years after being laid, the pavement at that period of its existence would have lost its regular and smooth surface, and the roadway

* In reporting favourably on the close-jointed system of wood-paving in October last, Mr. Richards, the City Surveyor, stated:—"I am also inclined to think that softer timbers laid in this manner would give good results, and shall, at the first opportunity, put them to the test."

† London experience has shown that this thickness is capable of withstanding a daily yard tonnage of 600 tons, without deterioration.

roadway would not be in a good state of repair, from the ordinary wear and tear of traffic, while the engineer would have arranged in his mind to discard the blocks in two or three years' time, and to relay a new pavement.

(1.) COST OF CONSTRUCTION.

The chief point for comparison in the two systems of street-paving adopted in London and Sydney will therefore resolve into the following:—

To construct a softwood pavement in London at the present time would cost per superficial yard as under:—

	s.	d.
Excavation of Macadam roadway, removal of material, and forming roadway to proposed section	1	2
The supply and laying of 6-inch concrete, rendered on surface with $\frac{1}{2}$ -inch of cement mortar	2	2
The supply and laying of 5-inch yellow deal blocks, including grouting, tarring and sanding	5	6
Supervision and contingencies	0	2
Total cost of 1 sup. yd. softwood pavement	*9	0

To construct a hardwood pavement in Sydney, taking the contract prices at which the wood pavement of Enmore Road has recently been undertaken, the cost would be per superficial yard as follows:—

	s.	d.
Excavation of Macadam roadway and forming road to required section	1	0
Concrete foundation 6 inches thick, with rendered surface... ..	4	5
Supply and laying blocks, including tarring and sanding	7	4
Total cost in Sydney of 1 sup. yd. hardwood pavement	12	9

To construct a hardwood pavement in London would cost per superficial yard as follows:—

	s.	d.	s.	d.
Concrete foundation, including excavation, &c.... ..	3	6		
Forty-eight hardwood blocks (9 in. x 6 in. x 3 in. F.O.B.) in Sydney at £6 15s. per 1,000	6	6		
Freight Sydney to London on 1/7 of a ton at 17s. 6d.... ..	2	6		
Cartage or tramage from Docks to site at, say, 8s. 6d.... ..	3	6		
			12	6
Total cost in London of 1 sup. yd. hardwood pavement			16	0

(2.) COST OF MAINTENANCE.

The maintenance of the London softwood pavements, exclusive of total renewal of blocks, costs, say, $4\frac{1}{2}$ d. per superficial yard per annum,† while maintenance and sanding of the hardwood pavements in Sydney costs 1d. per superficial yard per annum.

(3.) TOTAL COST OF PAVEMENT IN TWENTY-ONE YEARS.

The total cost of a superficial yard of softwood pavement in London for a period of twenty-one years would be:—

	£	s.	d.
First cost	0	9	0
Total renewal of blocks at (say) the end of the seventh and fourteenth years... ..	0	11	0
Maintenance at $4\frac{1}{2}$ d. per annum... ..	0	7	$10\frac{1}{2}$
Interest at 4 per cent. on first cost and two renewals of blocks	0	12	$2\frac{1}{2}$
Total cost in London of 1 sup. yd. softwood pavement for twenty-one years	£2	0	$0\frac{1}{2}$

The total cost of a superficial yard of hardwood pavement in London for a period of twenty-one years would be:—

	£	s.	d.
First cost	0	16	0
Maintenance and sanding at 1d. per annum	0	1	9
Interest at 4 per cent. on first cost	0	13	$5\frac{1}{2}$
Total cost in London of 1 sup. yd. of hardwood pavement for twenty-one years	£1	11	$2\frac{1}{2}$

The

* In support of this price Mr. Strachan gives the cost in Chelsea at 9s. 6d. per superficial yard; Mr. Isaacs gives the cost in Holborn at 8s. 6d.; Mr. Bridgeman (Chairman of Commissioners of City Sewers), at 8s.; while Mr. Norrington gives the cost at 8s. 8d.

† Mr. J. P. Barber, of Islington, states that his experience was that it cost at least $5\frac{1}{2}$ d. to 6d.; while other engineers give the cost of maintenance as low as 3d. per superficial yard per annum.

It is a matter of regret that similar information cannot be obtained with regard to the Sydney traffic. There is, however, no doubt that while the older pavements in this city with wide joints are slippery and uncomfortable to travel over, the pavements laid within the last five years, being watered at night and sanded in the day-time, give perfect foothold for horses, and comfort to occupants of vehicles.

(9.) TRACTION.

It is evident that the traction of vehicles over a wood pavement, with joints between lateral courses, must be greater than on asphalt. Mr. Isaacs states, with regard to a softwood pavement, that "it gives the minimum of traction, with the exception of asphalt," thus giving a softwood pavement, with joints between courses, second place.

It is, therefore, only fair to assume that by using hardwood blocks, with butt joints, the traction is reduced almost to that of asphalt.

(10.) HYGIENE.

Sufficient has been said as to the insanitary condition of London softwood pavements after they have been laid for any length of time to make authorities consider in what manner this evil can be mitigated. In Sydney, fortunately for the inhabitants, this evil does not exist, as hard woods are practically non-absorbent, and the city authorities are careful to have the street surfaces thoroughly cleansed every twenty-four hours. The close-joint pavements are, in consequence, free from dirt, and apparently throw off no bad odours whatever.

The hardwood blocks taken up, after eight to thirteen years' wear, from Sydney streets, show a decrease of perhaps half an inch from their original depth; but beyond this, every block (except those taken from Circular Quay) was in a perfect state of preservation, and, with the exception of the wear from the traffic above referred to, every block which has come under observation is as good as when first laid, or perhaps better, by reason of the lengthened seasoning that they have undergone. The author would respectfully suggest that the sanitary difficulties experienced by the London authorities in connection with softwood pavements in narrow streets might wholly or in part be removed by adopting an Australian hardwood butt-jointed pavement.

In conclusion, the author has endeavoured to show the advantages to be derived by using Australian hard woods instead of Swedish yellow deal, or other soft woods, in street pavements, and it is claimed that these advantages comprise:—

- (1.) Economy.
- (2.) An easier traction.
- (3.) Hygienic advantages only surpassed by the best asphalt pavements.
- (4.) And the convenience of having a roadway laid which would retain a smooth surface continuously for twenty-one years.

Assuming that the engineering and sanitary advantages of these hardwood pavements are admitted by this section of the Royal Society, it is hoped that, as a corporate institution of the Colony, the society will use its influence in bringing this matter to the front, as, should English engineers also be brought to admit the superiority of these timbers, the trade with Australia, when once established, must eventually grow to enormous proportions.

WALTER A. SMITH, M. INST. C.E.,
Divisional Engineer, Public Works Department.

No. 3.

Excerpt from the Minutes of Proceedings of the Institution of Civil Engineers, Vol. CXVI (Session 1893-94), Part II.

ON AUSTRALIAN HARD WOOD FOR PAVEMENTS.

By WALTER ALEXANDER SMITH, M. INST. C.E.

THE object of these notes is to compare the value of Australian hard wood with the softer and inferior timber used in the construction of wood-paved streets in Europe. The author considers that if English engineers were acquainted with the merits of these hardwood timbers, not only for wood pavements, but for structural purposes, advantage would accrue alike to the users at home and the exporters in Australia. The supply of this timber from the coast districts of New South Wales alone is almost inexhaustible; and now that a Forestry Department has been established, and is managed by a staff of scientific men, there is every hope that extensive tracts of country will not in future be denuded of timber, unless they are either brought under cultivation or replanted. The objections urged against the wood-paving of streets, such as the "spreading of joints," the "difficulty of maintaining the roadway in good order," or the "bad odours arising from the pavement after rain or street-watering," have ceased to apply in Australia; and by using hardwood timber with close joints, on level or comparatively level roads, and on gradients up to 1 in 20, with a $\frac{1}{4}$ -inch joint, the wearing-surface of a roadway is capable of sustaining, for a period estimated at twenty-one years, a daily traffic equal to 1,200 tons per yard width of road. In Sydney, which has 12 miles of wood-paved streets, two new thoroughfares, viz., Martin-place and Queen-street, have recently been paved with wood by the Government, under the supervision of the author.

The roadway in Martin-place is almost level. It was, therefore, decided by the Commissioner for Roads, Mr. R. R. P. Hickson, M. Inst. C.E., to adopt the close-joint system. The roadway is 100 feet wide, giving 61 feet for vehicular traffic, with two footways

footways of 18 feet each. It is constructed on made ground, supported on the north side by a brick retaining-wall 18 feet high. The space between this wall and the building-frontage will be divided by the erection of another wall to be built parallel to the retaining-wall and about 4 feet distant from it. The space between the two walls is to be utilised in the laying of cables, water and gas mains, &c., while the remaining 13 feet is to be so arranged as to give light and access to the basements of houses yet to be built.

As a foundation for the pavement, concrete was laid 9 inches thick, composed of five parts of 2½-inch gauge basalt, two parts of clean sharp sand, and one part of cement. The top was then floated over with a ½-inch rendering, composed of three parts of sand to one part of cement, and the entire width was finished at a convexity of 3 inches. On the surface thus prepared, paving-blocks were laid after having been dipped twice in boiling tar and stacked for two days to allow the surplus tar to drain off. The timber used was tallow-wood (*Eucalyptus microcorys*) and red mahogany (*Eucalyptus resinifera*). The surface was then tarred and sanded, and before the traffic was turned on to the road, a thin coating of basalt screenings from the stone-crusher was spread over it, affording an excellent foothold for horses. The curb-stones were of 12-inch by 16-inch blocks of trachyte, while between the curbs and the gutter-courses on each side, 1-inch and ½-inch expansion-joints were left and filled with "mastic."

Queen-street traverses land recently resumed by the Government under the Tramway Extension Act of 1880. Its construction necessitated the removal of a large amount of rubbish and of buildings, the latter including the "Oriental Hotel." It is built on gradients of 1 in 22 and 1 in 24, and has a total width of 130 feet, divided into a road of 100 feet with two footways of 15 feet each. The concrete foundation, curbs and expansion joints were constructed from a specification similar to that under which Martin-place was laid. The blocks, which consisted of turpentine (*Syncarpia laurifolia*), red mahogany, blackbutt (*Eucalyptus pilularis*), and tallow-wood, were also treated in a similar manner before being laid; but, owing to the steepness of the gradients, a ¼-inch batten joint was adopted between the courses, in order to afford a better foothold for horses. It is worthy of mention that while the above contracts were being carried out, it was necessary to remove some of the old blocks from adjoining streets, in order to make proper junctions with the new works; and, in doing so, it was observed that the effect of a cement joint on the timber was most injurious, while an asphalt joint acted as a preservative. Two cases met with are deserving of special attention:—

(a) At one end of Queen-street it was necessary to remove a considerable area of pavement which had been laid six years, in which a cement joint had been adopted, the width of joint being maintained by iron studs projecting ¾ inch from the face of the blocks; here it was found that dry-rot had set in wherever the wood had been in contact with the cement. Different kinds of timber had been used, but every block was more or less affected. On this being observed, other portions of the pavement which had been similarly constructed were examined, but all were found to be in the same state. The author is indebted to Mr. Roberts, of the Sewerage Department, for a microscopical examination of the timber thus affected, which showed no signs of fungoid growth. It is therefore assumed that the dry-rot was a decomposition of the timber brought about by chemical action—such as combination of the oxygen in the cement with the carbon in the wood, forming carbonic acid gas.

(b) At the other end of Queen-street, where blocks were removed which had been laid eight years, in which the joints had been caulked with a mixture of tar, pitch, and basalt-screenings, the timber was found to be in a perfect state of preservation; and, although the road had sustained a daily traffic of approximately 25,000 tons for eight years, it was in almost as good a state as when first laid. The blocks, which were originally 6 inches deep, made a perfect junction with the new 6-inch blocks, the greatest wear observable in the old blocks after eight years' service being ¼ inch.

Taking the average life of deal blocks used in the wood-paved streets in many parts of London at seven years* (after which total renewal is necessary)—assuming also the cost of laying the blocks, exclusive of foundations, to be 5s. 6d. per superficial yard, and the annual cost of maintenance to be 5d. per superficial yard—it may be seen that the cost of a wood-paved road calculated to sustain a daily traffic of 1,200 tons per yard width of road for a period of twenty-one years would be 17s. 9d. per superficial yard. In Sydney, the cost of similar work for an equal period (exclusive of foundations), in which Australian hard woods are used, is only 9s. 9d. for a close-jointed paving; and 10s. 8d. per superficial yard for a paving in which ¼-inch or ⅜-inch asphalt joints are introduced, similar to those adopted by the City Council.

Great inconvenience is experienced by using soft wood on roads carrying very heavy traffic; for, during a period of twenty-one years (which may be taken as the minimum life of Australian blocks) the surface of the road has to be renewed three times; and, for about eighteen months previous to each renewal, the smooth and regular surface of the road is practically destroyed, as the blocks have probably worn down in some cases as much as 2½ inches. Travelling over such a road is noisy and unpleasant, in addition to which the wear and tear of vehicles and horseflesh is increased. But, after a road of hardwood blocks is once laid on a good foundation with close joints, none of these inconveniences are experienced. In Sydney, there are blocks which have been laid thirteen years in one of the busiest streets of the city, which are to-day in a perfect state of preservation, having only worn down ⅜ inch; and, judging from their present condition, there appears to be no reason why these blocks should

* This period is arrived at from a large amount of evidence on the subject, including that afforded by the discussion on "The Construction and Repair of Roads," by George R. Strachan, Assoc. M. Inst. C.E. (Trans Soc. of Engineers, 1889, p. 17).

should not do good service for another ten years. Unfortunately, much of the pavement laid previous to 1883 had a foundation of only 6 inches of concrete with 1-inch joints between the courses; and this has resulted in the foundations giving way and the smooth surface of the pavement being destroyed. Nevertheless, timber blocks in these older streets, although worn down unevenly and much distorted owing to the yielding of the foundations, are, in every case which has come under the author's notice, in a perfect state of preservation.

It is evident from experience gained in Sydney that a properly-laid hardwood pavement will last at least twenty-one years, and probably for a much longer period, before renewal of the blocks is necessary.

No. 4.

The Government Analyst to The Medical Adviser to the Government.

Sir,

Government Laboratory, Sydney, 25 May, 1894.

The specimens of wood-blocks from Circular Quay forwarded to me for analysis have been examined with the following results:—

The blocks were found to consist of ligno-cellulose and the lignin of ordinary hard wood.

Attached to the blocks and permeating the tissue, chiefly on the underside and at the joints, I found traces of decomposed cement consisting of hydrated calcium, silicon and alumina compounds. These compounds gave a decided alkaline character to the woody tissue, and wherever the alkalinity was most marked, there the wood-block had suffered the most from decay, and had become softened. This decomposition, which is one of hydrolysis, brought about by contact with alkaline substances, was more noticeable at the base of the block.

The change or decay of the wood-block, which is known to chemical science as the hydrolysis of cellulose, is, in my opinion, caused by the cement having been allowed to come into contact with the wood.

I have, &c.,

WILLIAM M. HAMLET,
Government Analyst.

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

BETTING AND GAMBLING SUPPRESSION BILL.

(PETITION FROM CHARLES STEAD, EX-PRESIDENT OF THE CONFERENCE, CHAIRMAN OF A MEETING OF THE WESLEYAN METHODIST MINISTERS OF SYDNEY, IN FAVOUR OF.)

Received by the Legislative Assembly, 18 January, 1894.

To the Honorable the Speaker and the Honorable Members of the Legislative Assembly of New South Wales, in Parliament assembled.

The humble Petition of the Wesleyan Methodist Ministers of the city and suburbs of Sydney,—

RESPECTFULLY SHOWETH :—

That your Petitioners view with alarm the disastrous hold which the practices of betting and gambling on horse-races and public sports have on many of the people of New South Wales. Your Petitioners fear that unless these practices be effectually stopped by legislation they will tend to demoralize large numbers of their fellow colonists, and in a great measure impede the healthy development of the national life of New South Wales. Your Petitioners have considered a copy of the Bill for the suppression of betting and gambling, introduced into your honorable House and read a first time on the 24th day of November, 1893, and they heartily approve of the measure as one of a practical kind. Your Petitioners are confident that if the Bill in question be passed in its entirety by your honorable House, and becomes law, it will effectually put an end to the aforesaid demoralizing practices.

Your Petitioners therefore humbly pray that your honorable House will be pleased to pass the Bill referred to.

And your Petitioners, as in duty bound, will ever pray.

CHARLES STEAD,
Chairman.

A similar Petition was received on 18th January, 1894, from certain residents of New South Wales; 90 signatures.

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

BETTING AND GAMBLING SUPPRESSION BILL.
(PETITION FROM RESIDENTS OF BATHURST IN FAVOUR OF.)

Received by the Legislative Assembly, 1 February, 1894.

To the Honorable the Speaker and to the Honorable Members of the Legislative Assembly of New South Wales, in Parliament assembled.

The humble Petition of the undersigned residents of Bathurst, in New South Wales,—

RESPECTFULLY SHOWETH:—

That your Petitioners view with alarm the disastrous hold which the practices of betting and gambling on horse-races and public sports have on many of the people of New South Wales, and your Petitioners fear that unless these practices be effectually stopped by legislation they will tend to demoralise large numbers of their fellow colonists, and in a great measure impede the healthy development of the national life of New South Wales.

Your Petitioners have perused a copy of the Bill for the Suppression of Betting and Gambling, introduced into your Honorable House, and read a first time on the 24th day of November, 1893, and they heartily approve of the measure as one of a practical kind.

Your Petitioners are confident that if the Bill in question be passed in its entirety by your Honorable House and becomes law it will effectually put an end to the aforesaid demoralising practices.

Your Petitioners, therefore, humbly pray that your Honorable House will be pleased to pass the Bill referred to.

And your Petitioners will ever pray.

[Here follow 95 signatures.]

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

BETTING AND GAMBLING SUPPRESSION BILL.
(PETITION FROM CERTAIN RESIDENTS OF SURRY HILLS AND PADDINGTON IN FAVOUR OF.)

Received by the Legislative Assembly, 8 February, 1894.

To the Honorable the Speaker and to the Honorable Members of the Legislative Assembly of New South Wales, in Parliament assembled.

The humble Petition of the undersigned residents of Surry Hills and Paddington, in New South Wales,—

RESPECTFULLY SHOWETH:—

That your Petitioners view with alarm the disastrous hold which the practices of betting and gambling on horse-races and public sports have on many of the people of New South Wales, and your Petitioners fear that unless these practices be effectually stopped by legislation they will tend to demoralise large numbers of their fellow colonists, and in a great measure impede the healthy development of the national life of New South Wales.

Your Petitioners have considered a copy of the Bill for the Suppression of Betting and Gambling, introduced into your Honorable House, and read a first time on the 24th day of November, 1893, and they heartily approve of the measure as one of a practical kind.

Your Petitioners are confident that if the Bill in question be passed in its entirety by your Honorable House and becomes law it will effectually put an end to the aforesaid demoralising practices.

Your Petitioners, therefore, humbly pray that your Honorable House will be pleased to pass the Bill referred to.

And your Petitioners will ever pray.

[Here follow 98 signatures.]

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

GOVERNMENT PROPERTY SITUATED IN ELIZABETH,
CASTLEREAGH, AND MARKET STREETS.

(RETURN RESPECTING.)

Ordered by the Legislative Assembly to be printed, 7 February, 1894.

RETURN showing particulars of State Property situated in and bounded by Market, Castlereagh, and Elizabeth streets.

Tenements.	Tenants.	Rent.
		£ s. d.
No. 108, Castlereagh-street, shop	C. M. Lightfoot	2 0 0 per week.
„ 110, „ „	A. Mandelberg	2 0 0 „
„ 118, Market-street, office	Joel Phillips.	1 15 0 „
„ 122, „ „	W. G. Stewart and Forsyth Wolinski... ..	5 8 4 per month.
„ 124, „ shop	M. Renz	2 10 0 per week.
„ 126, „ „	J. S. Marshall	2 10 0 „
„ 131, Elizabeth-street, shop	A. Hutchinson	4 10 0 „
„ „ hoarding.. ..	J. Roff & Co.	1 0 0 „
„ 127, „ dwelling-house	W. Elliott	2 0 0 „
„ 121, „ „	J. W. Wilkes	2 0 0 „
„ 119, „ „	J. W. Wilkes	2 0 0 „
„ 115 and 117, „ „	W. H. Palmer	4 0 0 „

NOTE.—These properties were resumed for a Free Public Library. The purchase money was £97,699 16s. 5d.

The dwelling-houses in Elizabeth-street are occupied by sub-tenants, but the rental paid by them cannot be stated. The portion of the property originally used for St. James' Denominational School is now occupied by the State as Public High School for Girls.

The Treasury, New South Wales,
Sydney, 27th January, 1894.

JAMES J. HINCHY,
Accountant.

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

INFLUX OF ASIATICS.
(PETITION FROM CERTAIN RESIDENTS OF THE COLONY, AGAINST.)

Received by the Legislative Assembly, 23 January, 1894.

To the Honorable the Speaker and Members of the Legislative Assembly of New South Wales, in Parliament assembled.

The Petition of the undersigned residents of the Colony,—

RESPECTFULLY SHOWETH:—

1. That there are already in the Colony large numbers of Asiatics.
2. That these numbers are being largely augmented by the immigration of other Asiatics, many of whom, your Petitioners have every reason to believe, have been imported under contract to work at wages which totally preclude the possibility of white men competing with them.
3. That your Petitioners regard as a serious menace to the welfare of the community the probability of such importation being continued, and alien labour employed in other occupations than those at present followed.
4. That by the "Chinese Restriction Act," passed by your Honorable House in 1888, the principle has been affirmed of checking the influx of inferior and undesirable races, and of preserving the industries of the country to its own people.
5. That the same reasons which induced your Honorable House to restrict the influx of Chinese can be urged with equal force against the influx of other Asiatic people.
6. That the advantages presented by this country and the route to it are daily becoming more familiar to the people of Asia, and that the evil complained of will consequently become more pronounced the longer it is left unchecked.

Your Petitioners, therefore, humbly pray that your Honorable House will take the foregoing premises into early and favourable consideration, and that you will be pleased, during the present Session, to pass such prohibitive or restrictive legislation as will save the country from a danger threatening it alike with the most serious industrial, social, and political consequences.

And your Petitioners, as in duty bound, will ever pray.

[Here follow 204 signatures.]

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

INFLUX OF ASIATICS.

(PETITION FROM CERTAIN RESIDENTS OF THE COLONY, AGAINST.)

Received by the Legislative Assembly, 7 February, 1894.

To the Honorable the Speaker and Members of the Legislative Assembly of New South Wales, in Parliament assembled.

The Petition of the undersigned residents of the Colony,—

RESPECTFULLY SHOWETH:—

1. That there are already in the Colony large numbers of Asiatics.
2. That these numbers are being largely augmented by the immigration of other Asiatics, many of whom, your Petitioners have every reason to believe, have been imported under contract to work at wages which totally preclude the possibility of white men competing with them.
3. That your Petitioners regard as a serious menace to the welfare of the community the probability of such importation being continued, and alien labour employed in other occupations than those at present followed.
4. That by the "Chinese Restriction Act," passed by your Honorable House in 1888, the principle has been affirmed of checking the influx of inferior and undesirable races, and of preserving the industries of the country to its own people.
5. That the same reasons which induced your Honorable House to restrict the influx of Chinese can be urged with equal force against the influx of other Asiatic people.
6. That the advantages of this country and the route to it are daily becoming more familiar to the people of Asia, and that the evil complained of will consequently become more pronounced the longer it is left unchecked.

Your Petitioners, therefore, humbly pray that your Honorable House will take the foregoing premises into early and favourable consideration, and that you will be pleased, during the present Session, to pass such prohibitive or restrictive legislation as will save the country from a danger threatening it alike with the most serious industrial, social, and political consequences.

And your Petitioners, as in duty bound, will ever pray.

[*Here follow 359 signatures.*]

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

INFLUX OF ASIATICS.

(PETITION FROM CERTAIN RESIDENTS OF THE COLONY AGAINST.)

Received by the Legislative Assembly, 20 February, 1894.

To the Honorable the Speaker and Members of the Legislative Assembly of New South Wales, in
Parliament assembled.

The Petition of the undersigned residents of the Colony,—

RESPECTFULLY SHOWETH:—

1. That there are already in the Colony large numbers of Asiatics.
2. That these numbers are being largely augmented by the immigration of other Asiatics, many of whom, your Petitioners have every reason to believe, have been imported under contract to work at wages which totally preclude the possibility of white men competing with them.
3. That your Petitioners regard as a serious menace to the welfare of the community the probability of such importation being continued, and alien labour employed in other occupations than those at present followed.
4. That by the "Chinese Restriction Act," passed by your Honorable House in 1888, the principle has been affirmed of checking the influx of inferior and undesirable races, and of preserving the industries of the country to its own people.
5. That the same reasons which induced your Honorable House to restrict the influx of Chinese can be urged with equal force against the influx of other Asiatic people.
6. That the advantages presented by this country and the route to it are daily becoming more familiar to the people of Asia, and that the evil complained of will consequently become more pronounced the longer it is left unchecked.

Your Petitioners, therefore, humbly pray that your Honorable House will take the foregoing premises into early and favourable consideration, and that you will be pleased, during the present Session, to pass such prohibitive or restrictive legislation as will save the country from a danger threatening it alike with the most serious industrial, social, and political consequences.

And your Petitioners, as in duty bound, will ever pray.

[*Here follow 56 signatures.*]

Similar Petitions were received,—

On 21st February, 1893,	from certain residents of the Colony ;	389 signatures.
"	"	from certain residents of the Colony ;
"	"	from certain residents of the Colony ;

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

INFLUX OF ASIATICS.

(PETITION FROM CERTAIN RESIDENTS OF THE COLONY AGAINST.)

Received by the Legislative Assembly, 28 February, 1894.

To the Honorable the Speaker and Members of the Legislative Assembly of New South Wales, in
Parliament assembled.

The Petition of the undersigned residents of the Colony,—

RESPECTFULLY SHOWETH:—

1. That there are already in the Colony large numbers of Asiatics.
2. That these numbers are being largely augmented by the immigration of other Asiatics, many of whom, your Petitioners have every reason to believe, have been imported under contract to work at wages which totally preclude the possibility of white men competing with them.
3. That your Petitioners regard as a serious menace to the welfare of the community the probability of such importation being continued, and alien labour employed in other occupations than those at present followed.
4. That by the "Chinese Restriction Act," passed by your Honorable House in 1888, the principle has been affirmed of checking the influx of inferior and undesirable races, and of preserving the industries of the country to its own people.
5. That the same reasons which induced your Honorable House to restrict the influx of Chinese can be urged with equal force against the influx of other Asiatic people.
6. That the advantages presented by this country and the route to it are daily becoming more familiar to the people of Asia, and that the evil complained of will consequently become more pronounced the longer it is left unchecked.

Your Petitioners, therefore, humbly pray that your Honorable House will take the foregoing premises into early and favourable consideration, and that you will be pleased, during the present Session, to pass such prohibitive or restrictive legislation as will save the country from a danger threatening it alike with the most serious industrial, social, and political consequences.

And your Petitioners, as in duty bound, will ever pray.

[*Here follow 179 signatures.*]

Similar Petitions were received,—

- On 28th February, 1894, from W. O'Neill, Chairman of a public meeting held at Narromine.
 " " " from certain residents of the Colony; 15 signatures.
 " " " from certain residents of the Colony; 176 signatures.
 " " " from certain residents of the Colony; 90 signatures.
 " " " from James Connor, Mayor, Chairman of a public meeting at Wellington.
 " " " from certain residents of the Colony; 216 signatures.
 " " " from certain residents of the Colony; 35 signatures.
 On 1st March, 1894, from certain residents of the Colony; 76 signatures.

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

INFLUX OF ASIATICS.

(PETITION FROM CERTAIN RESIDENTS OF THE COLONY AGAINST.)

Received by the Legislative Assembly, 13 March, 1894.

To the Honorable the Speaker and Members of the Legislative Assembly of New South Wales, in Parliament assembled.

The Petition of the undersigned residents of the Colony,—

RESPECTFULLY SHOWETH:—

1. That there are already in the Colony large numbers of Asiatics.
2. That these numbers are being largely augmented by the immigration of other Asiatics, many of whom, your Petitioners have every reason to believe, have been imported under contract to work at wages which totally preclude the possibility of white men competing with them.
3. That your Petitioners regard as a serious menace to the welfare of the community the probability of such importation being continued, and alien labour employed in other occupations than those at present followed.
4. That by the "Chinese Restriction Act," passed by your Honorable House in 1888, the principle has been affirmed of checking the influx of inferior and undesirable races, and of preserving the industries of the country to its own people.
5. That the same reasons which induced your Honorable House to restrict the influx of Chinese can be urged with equal force against the influx of other Asiatic people.
6. That the advantages presented by this country and the route to it are daily becoming more familiar to the people of Asia, and that the evil complained of will consequently become more pronounced the longer it is left unchecked.

Your Petitioners, therefore, humbly pray that your Honorable House will take the foregoing premises into early and favourable consideration, and that you will be pleased, during the present Session, to pass such prohibitive or restrictive legislation as will save the country from a danger threatening it alike with the most serious industrial, social, and political consequences.

And your Petitioners, as in duty bound, will ever pray.

[Here follow 89 signatures.]

Similar Petitions were received,—

On 13th March, 1894,	from certain residents of the Colony ;	238 signatures.
"	"	from certain residents of the Colony ; 68 signatures.
"	"	from certain residents of the Colony ; 84 signatures.
"	"	from certain residents of the Colony ; 91 signatures.

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

INFLUX OF ASIATICS.

(PETITION FROM JOHN BLACK (MAYOR), CHAIRMAN OF A PUBLIC MEETING AT MOLONG, AGAINST.)

Received by the Legislative Assembly, 1 February, 1894.

To the Honorable the Speaker and Members of the Legislative Assembly of New South Wales, in
Parliament assembled.

The Petition of the undersigned Chairman of a duly advertised and convened public meeting, held at
Molong this 8th day of November, 1893,—

RESPECTFULLY SHOWETH:—

That the following resolutions were moved, seconded, supported, and carried unanimously:—

1. That this meeting desires to express its sympathy with the Anti-Alien Labour Movement at Bourke, and affirms the desirability of Parliament at once passing an Act for the suppression of this increasing Asiatic evil, and one that is becoming a menace to the well-being of the Colony.
2. That the foregoing resolution be embodied in a petition, and signed by the Chairman on behalf of the meeting, and presented to Parliament by the Member for the district.

Your Petitioners therefore humbly pray that your Honorable House will be pleased to take the foregoing resolutions into consideration, and grant such relief as your Honorable House may deem fit and proper.

And your Petitioners, as in duty bound, will ever pray.

JOHN BLACK,
Chairman.

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

INFLUX OF ASIATICS.

(PETITION FROM CHARLES JAMES SMITH, MAYOR, CHAIRMAN OF A PUBLIC MEETING AT ORANGE, AGAINST.)

Received by the Legislative Assembly, 15 February, 1894.

Petition to the Honorable the Speaker and Members of the Legislative Assembly of New South Wales, in Parliament assembled.

The Petition of the undersigned, Charles James Smith, Mayor of the Borough of Orange, Chairman of a public meeting held in Orange on 13th November, 1893,—

RESPECTFULLY SHOWETH:—

1. That there are already in the Colony large numbers of Asiatics.
2. That these numbers are being largely augmented by other Asiatics, many of whom, your Petitioner has every reason to believe, have been imported under contract to work at wages which totally preclude the possibility of white men competing with them.
3. That your Petitioner regards as a serious menace to the welfare of the community the probability of such importation being continued, and alien labour employed in other occupations than those at present followed.
4. That by the "Chinese Restriction Act," passed by your Honorable House in 1888, the principle has been affirmed of checking the influx of inferior and undesirable races, and of preserving the industries of the country to its own people.
5. That the same reasons which induced your Honorable House to restrict the influx of Chinese can be urged with equal force against the influx of other Asiatic people.
6. That the advantages presented by this country and the route to it are daily becoming more familiar to the people of Asia, and that the evil complained of will consequently become more pronounced the longer it is left unchecked.

Your Petitioner, therefore, humbly prays that your Honorable House will take the foregoing premises into early and favourable consideration, and that you will be pleased, during the present Session, to pass such prohibitive or restrictive legislation as will save the country from a danger threatening it alike with the most serious industrial, social, and political consequences.

And your Petitioner, as in duty bound, will ever pray.

CHARLES J. SMITH,
Mayor of Orange.

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

INFLUX OF ASIATICS.

(PETITION FROM THE MEMBERS OF THE MUNICIPAL COUNCIL OF WALCHA AGAINST.)

Received by the Legislative Assembly, 29 March, 1894.

To the Honorable the Speaker and Members of the Legislative Assembly of New South Wales, in Parliament assembled.

The Petition of the Members of the Municipal Council of Walcha,—

RESPECTFULLY SHOWETH:—

1. That there are already in the Colony large numbers of Asiatics.
2. That these numbers are being largely augmented by the immigration of other Asiatics, many of whom, your Petitioners have every reason to believe, have been imported under contract to work at wages which totally preclude the possibility of white men competing with them.
3. That your Petitioners regard as a serious menace to the welfare of the community the probability of such importation being continued, and alien labour employed in other occupations than those at present followed.
4. That by the "Chinese Restriction Act," passed by your Honorable House in 1888, the principle has been affirmed of checking the influx of inferior and undesirable races, and of preserving the industries of the country to its own people.
5. That the same reasons which induced your Honorable House to restrict the influx of Chinese can be urged with equal force against the influx of other Asiatic people.
6. That the advantages presented by this country and the route to it are daily becoming more familiar to the people of Asia, and that the evil complained of will consequently become more pronounced the longer it is left unchecked.

Your Petitioners, therefore, humbly pray that your Honorable House will take the foregoing premises into early and favourable consideration, and that you will be pleased, during the present Session, to pass such prohibitive or restrictive legislation as will save the country from a danger threatening it alike with the most serious industrial, social, and political consequences.

And your Petitioners, as in duty bound, will ever pray.

[Here follow 4 signatures.]

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

INSPECTION OF SCAFFOLDING.

(RETURN SHOWING.)

Ordered by the Legislative Assembly to be printed, 18 April, 1894.

RETURN to an *Order* made by the Honorable the Legislative Assembly of New South Wales, dated 15th February, 1894, That there be laid upon the Table of this House a Return showing,—

- “ (1.) The number of reports made by the Inspector of Scaffolding from 1st January to 31st December, 1893.
“ (2.) The number of instances where defective or unsafe material has been condemned as unfit for use, and the names of the employers on whose work it was being used.
“ (3.) The number of instances in which alterations have been made in scaffolding by Inspector's demands or instructions.”

(Mr. Fegan, for Mr. Bavister.)

INSPECTION OF SCAFFOLDING.—RETURN SHOWING.

(1.) The number of reports made by the Inspector of Scaffolding from the 1st January to the 31st December, 1893? Four special reports and twelve monthly lists, specifying the locality and streets in which every inspection was made.

(2.) The number of instances where defective or unsafe material has been condemned as unfit for use, and the names of the employers on whose work it was being used? Not having authority under any statute to condemn “as unfit for use” “defective or unsafe material,” the safety of workmen has been secured as answered in Question 3.

(3.) The number of instances in which alterations have been made in scaffolding by Inspector's demands or instructions? In 250 instances of scaffolding and scaffolding appliances, from 1,350 inspections made during the year 1893.

R. C. LUSCOMBE,
Government Inspector of Scaffolding.

Office, Public Works Buildings,
Sydney, 26th February, 1894.

1894.

NEW SOUTH WALES.

TREATY WITH THE ARGENTINE REPUBLIC.

(DESPATCH RESPECTING.)

Presented to Parliament by Command.

Department of Justice,
Sydney, 7th May, 1894.

HIS Excellency the Governor directs the publication, for general information, of the following Despatch, dated the 12th February, 1894, from the Secretary of State for the Colonies.

T. M. SLATTERY.

(Circular.)

Downing-street,
12th February, 1894.

Sir,

I have the honour to transmit to you, for publication in the Colony under your Government, a copy of an Order of Her Majesty the Queen in Council, dated the 29th of January, 1894 [*The London Gazette*, 30th Jan., 1894, *Extract*], for giving effect to the Treaty between Her Majesty and the President of the Argentine Republic, for the mutual extradition of Fugitive criminals, signed at Buenos Ayres on the 22nd of May, 1889, the ratifications of which were exchanged at Buenos Ayres on the 15th of December, 1893.

I have, &c.,
RIPON.

The Officer Administering
the Government of New South Wales.

ORDER IN COUNCIL.

ARGENTINE REPUBLIC EXTRADITION.

Osborne House, Isle of Wight, 29th January, 1894.

At the Court at Osborne House, Isle of Wight, the 29th day of January, 1894.

Present :

THE QUEEN'S MOST EXCELLENT MAJESTY.

LORD STURWARD.
SIR WILLIAM VERNON HARCOURT.
SIR HENRY PONSONBY.

SIR JOHN COWELL.
SIR PHILIP CURRIE.

WHEREAS by the Extradition Acts, 1870 and 1873, it was amongst other things enacted that, where an arrangement has been made with any foreign State with respect to the surrender to such State of any fugitive criminals, Her Majesty may, by Order in Council, direct that the said Acts shall apply in the case of such foreign State; and that Her Majesty may, by the same or any subsequent Order, limit the operation of the Order, and restrict the same to fugitive criminals who are in or suspected of being in the part of Her Majesty's dominions specified in the Order, and render the operation thereof subject to such conditions, exceptions, and qualifications as may be deemed expedient; and that if, by any law made after the passing of the Act of 1870 by the Legislature of any British possession, provision is made for carrying into effect within such possession the surrender of fugitive criminals who are in or suspected of being in such British possession, Her Majesty may, by the Order in Council applying the said Acts in the case of any foreign State, or by any subsequent Order, suspend the operation within any such British possession of the said Acts, or of any part thereof, so far as it relates to such foreign State, and so long as such Law continues in force there and no longer:

And whereas by an Act of the Parliament of Canada passed in 1836, and entitled "An Act respecting the Extradition of Fugitive Criminals," provision is made for carrying into effect within the Dominion the surrender of fugitive criminals:

And whereas by an Order of Her Majesty the Queen in Council, dated the seventeenth day of November, one thousand eight hundred and eighty-eight, it was directed that the operation of the Extradition Acts, 1870 and 1873, should be suspended within the Dominion of Canada so long as the provision of the said Act of the Parliament of Canada of 1836 should continue in force and no longer:

And whereas a Treaty was concluded on the twenty-second day of May, one thousand eight hundred and eighty-nine, between Her Majesty and The President of the Argentine Republic, for the mutual extradition of fugitive criminals, which Treaty is in the terms following:—

HER Majesty the Queen of the United Kingdom of Great Britain and Ireland, and His Excellency the President of the Argentine Republic, having judged it expedient, with a view to the better administration of justice and to the prevention of crime within the two countries and their jurisdictions, that persons charged with or convicted of the crimes or offences hereinafter enumerated, and being fugitives from justice, should, under certain circumstances, be reciprocally delivered up, have named as their Plenipotentiaries to conclude a Treaty (that is to say):

Her Majesty the Queen of the United Kingdom of Great Britain and Ireland, Her Chargé d' Affaires *ad interim* Mr. George Jenner;

And His Excellency the President of the Argentine Republic, His Excellency Doctor Don Norberto Quirno Costa, Secretary of State for the Department of Foreign Affairs;

Who, after having communicated to each other their respective Full Powers, found in good and due form, have agreed upon and concluded the following Articles:—

ARTICLE I.

The High Contracting Parties engage to deliver up to each other, under certain circumstances and conditions stated in the present Treaty, those persons who, being accused or convicted of any of the crimes or offences enumerated in Article II, committed in the territory of the one Party, shall be found within the territory of the other Party.

ARTICLE II.

Extradition shall be reciprocally granted for the following crimes or offences:—

1. Murder (including assassination, parricide, infanticide, poisoning), or attempt or conspiracy to murder.
2. Manslaughter.
3. Administering drugs or using instruments with intent to procure the miscarriage of women.
4. Rape.
5. Carnal knowledge or any attempt to have carnal knowledge of a girl under 16 years of age, if the evidence produced justifies committal for those crimes according to the laws of both the Contracting Parties.
6. Indecent assault.
7. Kidnapping and false imprisonment, child-stealing.
8. Abduction.
9. Bigamy.
10. Maliciously wounding or inflicting grievous bodily harm.
11. Assault occasioning actual bodily harm.
12. Threats by letter or otherwise, with intent to extort money or other things of value.
13. Perjury or subornation of perjury.
14. Arson.
15. Burglary or housebreaking, robbery with violence, larceny, or embezzlement.

JUZGANDO conveniente Su Majestad la Reina del Reino Unido de la Gran Bretaña e Irlanda, y su Excelencia el Presidente de la República Argentina, á objeto de una mejor administracion de justicia y de impedir la perpetracion de crímenes dentro de los dos países y sus jurisdicciones, que los individuos acusados ó convictos de los crímenes ó delitos mas adelante enumerados, y que hayan huido de la justicia, sean reciprocamente entregados en ciertas circunstancias, han nombrado sus Plenipotenciarios para concluir un Tratado, á saber:

Su Majestad la Reina del Reino Unido de la Gran Bretaña e Irlanda á su Encargado Interino de Negocios en la República, Señor Jorge Jenner;

Y su Excelencia el Presidente de la República Argentina, á Ministro Secretario de Estado in el Departamento de Relaciones Exteriores, Doctor Don Norberto Quirno Costa;

Los cuales, despues de haberse comunicado sus respectivos Plenos Poderes, hallados en buena y debida forma, han convenido y concluido los Artículos siguientes:—

ARTICULO I.

Las Altas Partes Contratantes se comprometen á entregarse reciprocamente, en las circunstancias y condiciones expuestas en el presente Tratado, aquellas personas que, acusadas ó convictas de cualquiera de los crímenes ó delitos enumerados en el Artículo II, cometidos en el territorio de una de las Partes, fueran halladas dentro del territorio de la otra.

ARTICULO II.

La extradicion se concederá reciprocamente por los siguientes crímenes ó delitos:—

1. Asesinato (incluso el asesinato con violencia, parricidio, infanticidio, ó envenenamiento), ó la tentativa ó conspiracion para asesinar.
2. Homicidio.
3. La administracion de drogas ó el empleo de instrumentos con el proposito de procurar el aborto.
4. Estupro.
5. Conocimiento carnal ó las tentativas de tenerlo con una niña menor de diez y seis años, siempre que el testimonio aducido justifique el enjuiciamiento por esos crímenes segun las leyes de las dos Altas Partes Contratantes.
6. Atentado contra el pudor.
7. Robo y secuestro de un ser humano, sustraccion de niño.
8. Rapto.
9. Bigamia.
10. Lesiones ó daño corporal grave hecho intencionalmente.
11. Ataque á las personas del que resulte grave daño corporal.
12. Amenazas, ya sea por medio de cartas ó de otra manera, con lar intencion de sacar dinero ú otros objetos de valor.
13. Perjurio ó tentativas de conseguirlo.
14. Incendio voluntario.
15. Robo, ú otros crímenes ó sus tentativas cometidas con fractura, robo con violencia, hurto y malversacion de valores publicos ó particulares.

16. Fraud by a bailee, banker, agent, factor, trustee, director, member, or public officer of any Company, punishable with imprisonment for not less than one year by any law for the time being in force.

17. Obtaining money, valuable security, or goods by false pretences; receiving any money, valuable security, or other property, knowing the same to have been stolen or unlawfully obtained, the value thereof exceeding 1,000 dollars or £200 sterling.

18.—(a.) Counterfeiting or altering money, or bringing into circulation counterfeited or altered money.

(b.) Knowingly making, without lawful authority, any instrument, tool, or engine adapted and intended for the counterfeiting of the coin of the realm.

(c.) Forgery, or uttering what is forged.

19. Crimes against bankruptcy law.

20. Any malicious act done with intent to endanger the safety of any person travelling or being upon a railway.

21. Malicious injury to property, if such offence be indictable.

22. Piracy and other crimes or offences committed at sea against persons or things which, according to the laws of the High Contracting Parties, are extradition offences, and are punishable by more than one year's imprisonment.

23. Dealing in slaves in such manner as to constitute a criminal offence against the laws of both States.

The extradition is also to be granted for participation in any of the aforesaid crimes, provided such participation be punishable by the laws of both Contracting Parties.

Extradition may also be granted at the discretion of the State applied to in respect of any other crime for which, according to the laws of both the Contracting Parties for the time being in force, the grant can be made.

ARTICLE III.

Either Government reserves the right to refuse or grant the surrender of its own subjects or citizens to the other Government.

ARTICLE IV.

The extradition shall not take place if the person claimed on the part of Her Majesty's Government, or the person claimed on the part of the Government of the Argentine Republic, has already been tried and discharged or punished, or is still under trial in the territory of the Argentine Republic or in the United Kingdom respectively, for the crime for which his extradition is demanded.

If the person claimed on the part of Her Majesty's Government, or on the part of the Government of the Argentine Republic, should be under examination for any other crime in the territory of the Argentine Republic or in the United Kingdom respectively, his extradition shall be deferred until the conclusion of the trial and the full execution of any punishment awarded to him.

ARTICLE V.

The extradition shall not take place if, subsequently to the commission of the crime, or the institution of the penal prosecution or the conviction thereon, exemption from prosecution or punishment has been acquired by lapse of time, according to the laws of the State applying or applied to.

It shall likewise not take place when, according to the laws of either country, the maximum punishment for the offence is imprisonment for less than one year.

ARTICLE VI.

A fugitive criminal shall not be surrendered if the offence in respect of which his surrender is demanded is one of a political character, or if he prove that the requisition for his surrender has, in fact, been made with a view to try or punish him for an offence of a political character.

ARTICLE VII.

A person surrendered can in no case be kept in prison or be brought to trial in the State to which the surrender has been made, for any other crime, or on account of any other matters, than those for which the extradition shall have taken place, until he has been restored or has had an opportunity of returning to the State by which he has been surrendered. This stipulation does not apply to crimes committed after the extradition.

ARTICLE VIII.

The requisition for extradition shall be made through the Diplomatic Agents of the High Contracting Parties respectively.

The requisition for the extradition of an accused person must be accompanied by a warrant of arrest issued by the competent authority of the State requiring the extradition, and by such evidence as, according to the laws of the place where the accused is found, would justify his arrest if the crime had been committed there.

16. Fraude cometido por un depositario, banquero, agente, comisionado, fideicomisario, director, miembro ó empleado publico de cualquiera Compañia, siempre que sea considerado como crimen con pena no menor de un año por una ley que esté en vigor.

17. El obtener dinero, garantías de valor, ó mercaderías, con pretextos falsos; recibir dinero, garantías de valor ú otros, bienes, sabiendo que han sido robados ó habidos indebidamente, y excedido su valor de mil pesos ó 200^l (doscientas).

18.—(a.) Falsificación ó alteración de moneda, circulación de moneda falsificada ó alterada.

(b.) Fabricación á sabiendas y sin autorización legal de cualquier instrumento, herramienta, ó aparato adaptado y destinado á la falsificación de la moneda nacional.

(c.) Falsificación ó alteración de firmas ó valores, ó circulación de lo falsificado ó alterado.

19. Crímenes contra las leyes de bancarrota.

20. Cualquier acto hecho con intención criminal, y que tenga por objeto poner en peligro la seguridad de una persona que se encuentre viajando en un ferro-carril, ó que se halle en él.

21. Daño hecho con intención criminal á la propiedad, siempre que la ofensa sea procesable.

22. Piratería, y otros crímenes ó delitos cometidos en el mar sobre las personas ó sobre las cosas, y que segun las leyes respectivas de las dos Altas Partes Contratantes, sean delitos de extradición y tengan mas de un año de pena.

23. Trata de esclavos, de manera tal que constituya una ofensa criminal contra las leyes de ambos Estados.

Debe tambien concederse la extradición por la participación en cualesquiera de los precitados crímenes, siempre que esa participación sea punible por las leyes de ambas Partes Contratantes.

Puede tambien concederse la extradición segun lo juzgue conveniente el Estado al que se hiciera el pedido con motivo de cualquier otro crimen que, segun las leyes que esten vigentes á la sazón, dé lugar á ella.

ARTICULO III.

Cada una de las dos Altas Partes Contratantes se reserva el derecho de negar ó conceder la entrega de sus propios súbditos ó ciudadanos.

ARTICULO IV.

La extradición no tendrá lugar si el individuo reclamado por el Gobierno de Su Majestad, ó el individuo reclamado por el Gobierno de la República Argentina, ya hubiese sido enjuiciado y puesto en libertad ó castigado, ó continuará procesado en el territorio de la República Argentina ó en el Reino Unido respectivamente, por el crimen por el que se demande su extradición.

Si el individuo reclamado por el Gobierno de Su Majestad, ó por el Gobierno de la República Argentina, estuviera detenido por cualquier otro crimen en el territorio de la República Argentina ó en el Reino Unido respectivamente, su extradición será aplazada hasta la terminación del juicio y la completa ejecución del castigo que le fué impuesto.

ARTICULO V.

La extradición no tendrá lugar si, despues de cometido el crimen ó de instituida la acusación criminal ó de condenado el reo, surgiera la prescripción, segun las leyes del Estado requeriente ó requerido.

No tendrá igualmente lugar cuando, segun las leyes de cada país, la mas alta pena del delito sea menor de un año de prisión.

ARTICULO VI.

Un criminal fugado no será entregado si el delito por el cual se solicita su extradición es de carácter político, ó si dicho criminal probare que el pedido de extradición se ha hecho en realidad con la mira de enjuiciarlo ó castigarlo por un delito de carácter político.

ARTICULO VII.

Un individuo entregado no puede en caso alguno ser detenido ni enjuiciado en el Estado al que se haga la entrega, por otro crimen ó por otros asuntos que no sean aquellos que hayan motivado la extradición, hasta tanto haya sido devuelto, ó haya tenido una oportunidad de regresar al Estado que lo entregare. Esta estipulación no se aplica á crímenes cometidos despues de la extradición.

ARTICULO VIII.

La requisitoria de la extradición se hará por los Agentes Diplomáticos de las Altas Partes Contratantes respectivamente.

La requisitoria para la extradición de un individuo acusado ha de ser acompañada de orden de prisión, dada por autoridad competente del Estado que requiera la extradición, y de aquellas pruebas que, segun las leyes del lugar donde sea hallado el acusado, justificarian su prisión si el crimen hubiese sido cometido allí.

If the requisition relates to a person already convicted, it must be accompanied by the sentence of condemnation passed against the convicted person by the competent Court of the State that makes the requisition for extradition.

A sentence passed *in contumaciam* is not to be deemed a conviction, but a person so sentenced may be dealt with as an accused person.

ARTICLE IX.

If the requisition for extradition be in accordance with the foregoing stipulations, the competent authorities of the State applied to shall proceed to the arrest of the fugitive.

ARTICLE X.

A fugitive criminal may be apprehended under a warrant issued by any Police Magistrate, Justice of the Peace, or other competent authority in either country, on such information or complaint, and such evidence, or after such proceedings, as would, in the opinion of the authority issuing the warrant, justify the issue of a warrant if the crime had been committed or the person convicted in that part of the dominions of the two Contracting Parties in which the Magistrate, Justice of the Peace, or other competent authority exercises jurisdiction: provided, however, that in the United Kingdom the accused shall, in such case, be sent as speedily as possible before a Police Magistrate in London. He shall, in accordance with this Article, be discharged, as well in the Argentine Republic as in the United Kingdom, if within the term of thirty days a requisition for extradition shall not have been made by the Diplomatic Agent of his country in accordance with the stipulations of this Treaty. The same rule shall apply to the cases of persons accused or convicted of any of the crimes or offences specified in this Treaty, and committed on the high seas on board any vessel of either country which may come into a port of the other.

ARTICLE XI.

The extradition shall take place only if the evidence be found sufficient, according to the laws of the State applied to, either to justify the committal of the prisoner for trial, in case the crime had been committed in the territory of the same State, or to prove that the prisoner is the identical person convicted by the Courts of the State which makes the requisition, and that the crime of which he has been convicted is one in respect of which extradition could, at the time of such conviction, have been granted by the State applied to; and no criminal shall be surrendered until after the expiration of fifteen days from the date of his committal to prison to await the warrant for his surrender.

ARTICLE XII.

In the examinations which they have to make in accordance with the foregoing stipulations, the authorities of the State applied to shall admit as valid evidence the sworn depositions or statements of witnesses taken in the other State, or copies thereof, and likewise the warrants and sentences issued therein, and certificates of, or judicial documents stating, the fact of a conviction, provided the same are authenticated as follows:—

1. A warrant must purport to be signed by a Judge, Magistrate, or officer of the other State.
2. Depositions, or affirmations, or the copies thereof, must purport to be certified under the hand of a Judge, Magistrate, or officer of the other State, to be the original depositions or affirmations, or to be true copies thereof, as the case may require.
3. A certificate of, or judicial document stating, the fact of a conviction must purport to be certified by a Judge, Magistrate, or officer of the other State.
4. In every case such warrant, deposition, affirmation, copy, certificate, or judicial document must be authenticated either by the oath of some witness, or by being sealed with the official seal of the Minister of Justice, or some other Minister of the other State; but any other mode of authentication for the time being permitted by the law of the country where the examination is taken may be substituted for the foregoing.

ARTICLE XIII.

If the individual claimed by one of the High Contracting Parties in pursuance of the present Treaty should be also claimed by one or several other Powers on account of other crimes or offences committed upon their respective territories, his extradition shall be granted to that State whose demand is earliest in date.

ARTICLE XIV.

If sufficient evidence for the extradition be not produced within two months from the date of the apprehension of the fugitive, or within such further time as the State applied to, or the proper Tribunal thereof, shall direct, the fugitive shall be set at liberty.

Si la requisitoria se relaciona con persona ya condenada, deberá venir acompañada de la sentencia condenatoria dictada contra la persona condenada por el Tribunal competente del Estado que haga la requisitoria para la extradición.

Una sentencia dictada en rebeldía no ha de reputarse condenatoria; pero á una persona así sentenciada puede tratarse como á persona suelta.

ARTICULO IX.

Si la requisitoria para la extradición está de acuerdo con las precedentes estipulaciones, las autoridades competentes del Estado requerido procederán á la prisión del fugitivo.

ARTICULO X.

Puede aprehenderse á un criminal fugitivo en virtud de un mandato de prisión, dictado por cualquier Juez de Instrucción ó de Paz, ú otra autoridad competente en cualquiera de los dos países, mediante aquellas pruebas, informes ó denuncias, y aquellos procedimientos, que en la opinión de la autoridad que dé el mandato justificarian análogo mandato si el crimen se hubiera cometido ó la persona hubiera sido condenada en aquella parte de los dominios de las dos Partes Contratantes donde ejerza jurisdicción el Juez de Instrucción ó de Paz, ú otra autoridad competente: bajo la condición, sin embargo, que en el Reino Unido el acusado ha de ser remitido, en tal caso, á la mayor brevedad, á Londres, á disposición de algun Juez de Instrucción. De conformidad con este Artículo, al acusado será puesto en libertad tanto en la República Argentina como en el Reino Unido, si dentro del plazo de treinta días no hubiera hecho una requisitoria para la extradición el Agente Diplomático de su país de acuerdo con las estipulaciones de este Tratado. La misma regla se aplicará á los casos de personas acusadas ó condenadas por cualquiera de los crímenes ó delitos especificados en el presente Tratado, y que se hubieran cometido en alta mar abordo de un buque de cualquiera de los dos países que entrase en un puerto del otro.

ARTICULO XI.

Solo tendrá lugar la extradición, en el caso de hallarse suficiente el testimonio, segun las leyes del país requerido, ya sea para justificar el enjuiciamiento en el caso de que se hubiera cometido el crimen en el territorio del mismo Estado, ya sea para comprobar la identidad del preso como la persona condenada por los Tribunales del Estado que hace la requisitoria, y que el crimen por el que se le haya condenado es de aquellos con motivo de los cuales podría, en la época de dicha condena, haberse concedido in extradición por el Estado requerido; y ningun criminal será entregado hasta despues de pasados quince días, contados desde la fecha de su encarcelacion á esperar la órden para su entrega.

ARTICULO XII.

En los exámenes que debon practicar de conformidad con las precedentes estipulaciones, las autoridades del Estado requerido aceptarían como testimonio válido las deposiciones juramentadas ó las declaraciones de testigos tomadas en el otro Estado, ó copia de ellas, y tambien las órdenes de prisión y sentencias allí dictadas y certificados del hecho de una condena ó documentos judiciales que le declaren, con tal que esten, autenticados como sigue:—

1. Una orden de prisión deba parecer firmada por algun Juez, Magistrado, ó empleado del otro Estado.
2. Las deposiciones ó afirmaciones, ó las copias de estas, deben demostrar que certifican, mediante la firma de algun Juez, Magistrado, ó empleado del otro Estado, ser las deposiciones ó afirmaciones originales, ó copias fieles de ellas, segun le requiera el caso.
3. Un certificado del hecho de una condena ó documento judicial que la declare, debe demostrar que está otorgada por algun Juez, Magistrado, ó empleado del otro Estado.
4. En todos los casos dicha órden, deposición, afirmación, copia, certificado, ó documento judicial debe autenticarse, ya sea mediante juramento de algun testigo, ya sea mediante el sello oficial del Ministro de Justicia, ó de algun otro Ministro del otro Estado; pero cualquiera otra manera de autenticar que esté permitida á la sazón por la ley del país donde se practique el exámen, puede sustituirse á las precedentes.

ARTICULO XIII.

Si el individuo reclamado por una de las Altas Partes Contratantes conforme al presente Tratado tambien lo fuere por otra ú otras Potencias con motivo de otros crímenes ó delitos cometidos en sus respectivos territorios, se concederá la extradición al Estado cuya requisición fuere de fecha mas antigua.

ARTICULO XIV.

Si no se exhibiera testimonio bastante para la extradición dentro de los dos meses despues de la fecha en que se aprehendió al fugitivo, ó dentro del nuevo plazo que designe el Estado requerido ó el correspondiente Tribunal del mismo, el fugitivo será puesto en libertad.

ARTICLE XV.

All articles seized which were in the possession of the person to be surrendered at the time of his apprehension shall, if the competent authority of the State applied to for the extradition has ordered the delivery of such articles, be given up when the extradition takes place; and the said delivery shall extend not merely to the stolen articles, but to everything that may serve as a proof of the crime.

ARTICLE XVI.

All expenses connected with extradition shall be borne by the demanding State.

ARTICLE XVII.

The stipulations of the present Treaty shall be applicable to the Colonies and foreign possessions of Her Britannic Majesty, so far as the laws for the time being in force in such Colonies and foreign possessions respectively will allow.

The requisition for the surrender of a fugitive criminal who has taken refuge in any of such Colonies or foreign possessions shall be made to the Governor or chief authority of such Colony or possession by the Chief Consular officer of the Argentine Republic in such Colony or possession.

Such requisition may be disposed of, subject always, as nearly as may be, and so far as the law of such Colony or foreign possession will allow, to the provisions of this Treaty, by the said Governor or chief authority, who, however, shall be at liberty either to grant the surrender or to refer the matter to his Government.

Her Britannic Majesty shall, however, be at liberty to make special arrangements in the British Colonies and foreign possessions for the surrender of Argentine criminals who may take refuge within such Colonies and foreign possessions, on the basis, so far as the law of such Colony or foreign possession will allow, of the provisions of the present Treaty.

Requisitions for the surrender of a fugitive criminal emanating from any Colony or foreign possession of Her Britannic Majesty shall be governed by the rules laid down in the preceding Articles of the present Treaty.

ARTICLE XVIII.

The present Treaty shall come into force ten days after its publication, in conformity with the forms prescribed by the laws of the High Contracting Parties. It may be terminated by either of the High Contracting Parties by a notice not exceeding one year, and not less than six months.

The Treaty, after receiving the approval of the Congress of the Argentine Republic, shall be ratified, and the ratifications shall be exchanged at Buenos Ayres as soon as possible.

In witness whereof the respective Plenipotentiaries have signed the same, and have affixed thereto the seal of their arms.

Done at Buenos Ayres, on the twenty-second day of May, one thousand eight hundred and eighty-nine.

(L.S.) G. JENNER.

ARTICULO XV.

Todo objeto que estén [p]osesion del individuo que haya de entregarse y que se le tome al tiempo de aprehenderlo, será entregado al efectuarse la extradición si la autoridad competente del Estado requerido para la extradición ha ordenado la entrega de dichos objetos; y dicha entrega se hará extensiva no solo á los objetos robados, sino á cualquier otro que pueda servir de comprobante del crimen.

ARTICULO XVI.

Todos los gastos conexos á la extradición estarán á cargo del Estado que la requiera.

ARTICULO XVII.

Las estipulaciones del presente Tratado se aplicarán á las Colonias y posesiones exteriores de Su Majestad Británica, en cuanto lo permitan las leyes que estén á la sazón en vigor en dichas Colonias y posesiones exteriores.

La requisitoria para la entrega de un criminal fugitivo, refugiado en alguna de dichas Colonias ó posesiones exteriores, será hecha al Gobernador ó autoridad principal de dicha Colonia ó posesión por el Agente principal Consular de la República Argentina en dicha Colonia ó posesión.

Conocerá de dicha requisitoria (aunquándose siempre, en cuanto le sea dado y en cuanto lo permitan las leyes de dicha Colonia ó posesión exterior, á las prescripciones de este Tratado) dicho Gobernador ó autoridad principal, el cual tendrá, sin embargo, la facultad ó bien de conceder la entrega ó de referir el asunto á su Gobierno.

Su Majestad Británica tendrá, no obstante, la facultad de hacer arreglos especiales en las Colonias y posesiones exteriores Británicas para la entrega de criminales Argentinos que se refugien en dichas Colonias y posesiones exteriores, sobre la base, en cuanto lo permita la ley de dicha Colonia ó posesión exterior, de las estipulaciones del presente Tratado.

Las requisitorias para la entrega de un criminal fugitivo que emanen de alguna Colonia ó posesión exterior de Su Majestad Británica serán regidas por las reglas sentadas en los precedentes Artículos del presente Tratado.

ARTICULO XVIII.

El presente Tratado entrará en vigor diez días de publicado conforme á las formas prescritas por las leyes de las Altas Partes Contratantes.

Podrá darlo por terminado cualquiera de las Altas Partes Contratantes, previo aviso que no pase de un año y no baje de seis meses.

El Tratado, despues de aprobado por el Congreso de la República Argentina, será ratificado, y las ratificaciones serán cangeadas en Buenos Aires á la posible brevedad.

En fé de lo cual los respectivos Plenipotenciarios lo han firmado, y le han puesto el sello de sus armas.

Hecho en Buenos Aires, á los veintidos dias del mes de Mayo de mil ocho cientos ochento y nueve.

(L.S.) N. QUIRNO COSTA.

And whereas the ratifications of the said Treaty were exchanged at Buenos Ayres, on the fifteenth day of December, one thousand eight hundred and ninety-three.

Now, therefore, Her Majesty, by and with the advice of Her Privy Council, and in virtue of the authority committed to Her by the said recited Acts, doth order, and it is hereby ordered, that from and after the ninth day of February, one thousand eight hundred and ninety-four, the said Acts shall apply in the case of the Argentine Republic and of the said Treaty with the Argentine Republic.

Provided always, and it is hereby further ordered, that the operation of the said Extradition Acts, 1870 and 1873, shall be suspended within the Dominion of Canada so far as relates to the Argentine Republic and to the said Treaty, and so long as the provisions of the Canadian Act aforesaid of 1883 continue in force, and no longer.

C. L. Peel.

1894.

NEW SOUTH WALES.

TREATY WITH PORTUGAL.
(DESPATCH RESPECTING.)

Presented to Parliament by Command.

Department of Justice,
Sydney, 30th May, 1894.

His Excellency the Governor directs the publication, for general information, of the following Despatch, dated the 20th March, 1894, from the Secretary of State for the Colonies.

T. M. SLATTERY.

(Circular.)

Downing-street,
20th March, 1894.

Sir,

I have the honour to transmit to you, for publication in the Colony under your Government, a copy of an Order of Her Majesty the Queen in Council, dated the 3rd of March, 1894 [The London Gazette, 9th March, 1894, *Extract*], for giving effect to the Treaty between Her Majesty and His Majesty the King of Portugal, for the mutual extradition of Fugitive Criminals, signed at Lisbon on the 17th October, 1892, the ratifications of which were exchanged at Lisbon on the 13th of November, 1893.

I have, &c.,
RIPON.

The Officer Administering
the Government of New South Wales.

ORDER IN COUNCIL.

EXTRADITION TREATY WITH PORTUGAL.

Windsor, 3rd March 1894.

At the Court at Windsor, the 3rd day of March, 1894.

Present:

THE QUEEN'S MOST EXCELLENT MAJESTY.

LORD PRESIDENT.
MARQUESS OF RIPON.
EARL SPENCER.MR. GLADSTONE.
SIR WILLIAM VERNON HARCOURT.

WHEREAS by the Extradition Acts, 1870 and 1873, it was amongst other things enacted, that, where an arrangement has been made with any foreign State with respect to the surrender to such State of any fugitive criminals, Her Majesty may, by Order in Council, direct that the said Acts shall apply in the case of such foreign State; and that Her Majesty may, by the same or any subsequent Order, limit the operations of the Order, and restrict the same to fugitive criminals who are in or suspected of being in the part of Her Majesty's dominions specified in the Order, and render the operation thereof subject to such conditions, exceptions, and qualifications as may be deemed expedient; and that if, by any law made after the passing of the Act of 1870 by the Legislature of any British possession, provision is made for carrying into effect within such possession, the surrender of fugitive criminals who are in or suspected of being in such British possession, Her Majesty may, by the Order in Council applying the said Acts in the case of any foreign State, or by any subsequent order, suspend the operation within any such British possession of the said Acts, or of any part thereof, so far as it relates to such foreign State, and so long as such Law continues in force there and no longer:

And whereas by an Act of the Parliament of Canada passed in 1886, and entitled "An Act respecting the Extradition of Fugitive Criminals," provision is made for carrying into effect within the Dominion the surrender of fugitive criminals:

And whereas by an Order of Her Majesty the Queen in Council, dated the seventeenth day of November, one thousand eight hundred and eighty-eight, it was directed that the operation of the Extradition Acts, 1870 and 1873, should be suspended within the Dominion of Canada so long as the provision of the said Act of the Parliament of Canada of 1886 should continue in force and no longer:

And whereas a treaty was concluded on the seventeenth day of October, one thousand eight hundred and ninety-two, between Her Majesty and His Majesty the King of Portugal for the mutual extradition of fugitive criminals, which treaty is in the terms following:—

Her Majesty the Queen of the United Kingdom of Great Britain and Ireland, Empress of India, and His most Faithful Majesty the King of Portugal and of the Algarves, having judged it expedient, with a view to the better administration of justice and to the prevention of crime within their respective territories, that persons charged with or convicted of the crimes hereinafter enumerated, and being fugitives from justice, should, under certain circumstances, be reciprocally delivered up, the said High Contracting Parties have named as their Plenipotentiaries to conclude a Treaty for this purpose, that is to say:

Her Majesty the Queen of the United Kingdom of Great Britain and Ireland, Empress of India, Sir George Glynn Petre, Knight Commander of the Most Distinguished Order of Saint Michael and Saint George, Companion of the Most Honorable Order of the Bath, Her Majesty's Envoy Extraordinary and Minister Plenipotentiary at the Court of His Most Faithful Majesty, &c.; and

His Most Faithful Majesty the King of Portugal and of the Algarves, Dom Antonio Ayres de Gouvêa, Councillor of His Majesty, Peer of the Realm, Bishop of Bethsaida, retired Professor of the University of Coimbra, His Majesty's Minister and Secretary of State for Foreign Affairs, &c.:

Who, having communicated to each other their respective Full Powers, found in good and due form, have agreed upon and concluded the following Articles:—

ARTICLE I.

The High Contracting Parties engage to deliver up to each other those persons who, being accused or convicted of a crime or offence committed in the territory of the one Party, shall be found within the territory of the other Party, under the circumstances and conditions stated in the present Treaty.

ARTICLE II.

The crimes or offences for which the extradition is to be granted are the following:—

1. Murder (including assassination, infanticide, and poisoning), or attempt or conspiracy to murder.
2. Manslaughter.
3. Maliciously wounding or inflicting grievous bodily harm.
4. Assault occasioning actual bodily harm.
5. Counterfeiting or altering money, either metallic or of any other kind representing the first-named, or uttering counterfeit or altered money of any of those kinds.
6. Knowingly making any instrument, tool, or engine adapted and intended for counterfeiting coin.
7. Forgery, counterfeiting, or altering, or uttering what is forged or counterfeited or altered.
8. Embezzlement or larceny.
9. Malicious injury to property, if the offence be indictable.
10. Obtaining money, goods, or valuable securities, by false pretences.

Sua Magestade a Rainha do Reino Unido da Grã-Bretanha e Irlanda, Imperatriz da India, e Sua Magestade Fidelissima o Rei de Portugal e dos Algarves, julgando conveniente para melhorar a administração da justiça e obstar á perpetração de crimes nos seus respectivos territorios, que os individuos accusados ou condemnados por algum dos crimes abaixo indicados, e foragidos da justiça, sejam, dadas certas circumstancias, reciprocamente entregues, nomearam seus Plenipotenciarios para a celebração d'um Tratado com este intuito, a saber:

Sua Magestade a Rainha do Reino Unido da Grã-Bretanha e Irlanda, Imperatriz da India e Sir George Glynn Petre, Commendador da Muito Distincta Ordem de São Miguel e São Jorge, Cavallerio da Muito Nobre Ordem do Banho, seu Enviado Extraordinario e Ministro Plenipotenciario na Corte de Sua Magestade Fidelissima, &c.; e

Sua Magestade Fidelissima El-Rei de Portugal e dos Algarves, a Dom Antonio Ayres de Gouvêa, do seu Conselho, Par do Reino, Bispo de Bethsaida, lente Jubilado da Universidade de Coimbra, seu Ministro e Secretario de Estado dos Negocios Estrangeiros, &c.:

Os quaes, tendo trocado os seus respectivos Plenos Poderes, que acharam em boa e devida forma, convieram e assentaram nos seguintes Artigos:—

ARTIGO I.

As Atlas Partes Contractantes compromettense á reciproca entrega dos individuos que, accusados ou condemnados por crime ou delicto commettido no territorio d'uma das Partes, se acharem no territorio da outra, nos termos e condições estipuladas no presente Tratado.

ARTIGO II.

Os crimes ou delictos pelos quaes ha de conceder-se extradição são os seguintes:—

1. Homicidio voluntario (incluido homicidio com premeditação, infanticidio, e envenenamento), tentativa, ou conluio para assassinar.
2. Homicidio simples.
3. Ferimentos voluntarios ou grave lesão corporal.
4. Aggressão da qual resultasse de facto lesão corporal.
5. Falsificação ou adulteração de moeda, quer seja d'especie metallica, quer d'outra qualquer especie representando aquella, ou introdução na circulação de moeda falsificada ou adulterada de qualquer d'aquellas especies.
6. Fabrico intencional de instrumento, utensilio, ou apparelho appropriado ou destinado ao fabrico de moeda falsa.
7. Falsificação, imitação, fraudulenta ou viciação, e a passagem ou introdução na circulação do que se falsificou, imitou, ou viciou.
8. Descaminho ou furto.
9. Damno voluntario causado em propriedade alheia, se constituir delicto ou crime.
10. Acquisição fraudulenta de dinheiro, fazenda, ou titulos de valor.

11. Receiving money, valuable security, or other property, knowing the same to have been stolen, embezzled, or unlawfully obtained.

12. Crimes against bankruptcy law.

13. Fraud by a bailee, banker, agent, factor, trustee, or director, or member, or public officer of any Company, made criminal by any law for the time being in force.

14. Perjury or subornation of perjury.

15. Rape.

16. Carnal knowledge or any attempt to have carnal knowledge of a girl under 16 years of age.

17. Indecent assault.

18. Administering drugs or using instruments with intent to procure the miscarriage of a woman.

19. Abduction.

20. Bigamy.

21. Child-stealing.

22. Abandoning children, exposing or unlawfully detaining them.

23. Kidnapping and false imprisonment.

24. Burglary or housebreaking.

25. Arson.

26. Robbery with violence.

27. Any malicious act done with intent to endanger the safety of any person in a railway train.

28. Threats by letter or otherwise, with intent to extort.

29. Piracy by law of nations.

30. Sinking or destroying a vessel at sea or attempting or conspiring to do so.

31. Assaults on board a ship on the high seas, with intent to destroy life or to do grievous bodily harm.

32. Revolt, or conspiracy to revolt, by two or more persons on board a ship on the high seas against the authority of the master.

33. Dealing in slaves in such manner as to constitute a criminal offence against the laws of both States.

Extradition is also to be granted for participation in any of the aforesaid crimes, provided such participation be punishable by the laws of both the Contracting Parties.

Extradition may also be granted at the discretion of the State applied to in respect of any other crimes for which, according to the laws of both the Contracting Parties for the time being in force, the grant can be made.

The Portuguese Government will not deliver up any person either guilty or accused of any crime punishable with death.

ARTICLE III.

The Portuguese Government will not grant the extradition of any Portuguese subject, and Her Britannic Majesty's Government will not grant the extradition of any British subject; but in the case of a naturalized subject, this Article shall only be applicable if the naturalization was obtained previous to the commission of the crime giving rise to the application for extradition.

ARTICLE IV.

The extradition shall not take place if the person claimed on the part of the British Government, or the person claimed on the part of the Portuguese Government, has already been tried and discharged or punished, or is still under trial within the territories of the two High Contracting Parties respectively, for the crime for which his extradition is demanded.

If the person claimed on the part of the British Government, or if the person claimed on the part of the Portuguese Government, should be under examination, or is undergoing sentence under a conviction for any other crime within the territories of the two High Contracting Parties respectively, his extradition shall be deferred until after he has been discharged, whether by acquittal, or on the expiration of his sentence, or otherwise.

ARTICLE V.

The extradition shall not take place if, subsequently to the commission of the crime, or the institution of the penal prosecution or the conviction thereon, exemption from prosecution or punishment has been acquired by lapse of time, according to the laws of the State applied to.

ARTICLE VI.

A fugitive criminal shall not be surrendered if the offence in respect of which his surrender is demanded is one of a political character, or if he prove that the requisition for his surrender has, in fact, been made with a view to try or punish him for an offence of a political character.

ARTICLE VII.

A person surrendered can in no case be kept in prison or be brought to trial in the State to which the surrender has been made, for any other crime, or on account of any other matters, than those for which the extradition shall have taken place, until he has been restored, or had an opportunity of returning to the State by which he has been surrendered.

11. Recaptação, de dinheiro, título de valor, ou outra especie de propriedade havendo certeza de ter sido roubada, subtraída, ou illegitimamente adquirida.

12. Crimes contra a legislação relativa a fallencias.

13. Fraude commetida por depositario, banqueiro, agente, commissario, curador, ou director ou membro ou empregado de companhia que deva reputar-se criminoso em razão de lei vigente.

14. Perjurio ou suborno para perjurar.

15. Violação.

16. Estupro, ou tentativa de estupro, em rapariga menor de 16 annos.

17. Ultrage ao pudôr.

18. Propinação de substancias ou emprego de instrumentos tendentes a produzir aborto.

19. Rapto.

20. Bigamia.

21. Substracção de menores.

22. Abandono de infantes, exposição, ou detenção illegal dos mesmos.

23. Rapto violento e carcere privado.

24. Roubo com arrombamento durante a noite ou arrombamento de domicilio para furtar.

25. Fogo posto.

26. Furto com violencia.

27. Acto voluntario que ponha em risco a segurança d'alguem em trem de via ferrea.

28. Ameaças por carta ou de outra forma, para realizar extorsão.

29. Pirataria segundo o direito das gentes.

30. Submersão ou destruição de navio no mar, tentativa ou conluio para esse fim.

31. Aggressão a bordo de navio no alto mar no intuito de destruir vidas ou causar grave lesão corporal.

32. Revolta ou conluio para revolta levada a effeito por duas ou mais pessoas a bordo de embarcação no mar alto contra a autoridade do capitão.

33. Trafico de escravos realisado por forma que constitua violação das leis d'ambos os Estados.

Será tambem concedida a extradição, pela cumplicidade em algum dos crimes acima ditos, contanto que tal cumplicidade seja punivel pelas leis de ambas as Partes Contractantes.

Poderá tambem conceder-se extradição a arbitrio do Estado reclamado por qualquer outro crime que, segundo as leis então vigentes d'ambas as Partes Contractantes, a ella poder dar logar.

O Governo Portuguez não concederá a extradição de nenhum individuo culpado ou accusado de crime a quo seja applicavel pena de morte.

ARTIGO III.

O Governo Portuguez não concederá a extradição de qualquer subdito Portuguez, e o Governo de Sua Magestade Britannica não concederá a extradição de qualquer subdito Britannico; mas quando se tratar de um subdito naturalizado só serão applicadas as disposições d'este Artigo no caso de ter sido a naturalisação obtida antes da perpetração do crime que den logar ao pedido de extradição.

ARTIGO IV.

Não poderá effectuar-se a extradição se o individuo reclamado pelo Governo Britannico ou o individuo reclamado pelo Governo Portuguez já tiver sido julgado e condemnado ou absolvido, ou estiver sujeito ainda a julgamento, no territorio d'alguma das Altas Partes Contractantes em razão do crime pelo qual tiver sido reclamada sua extradição.

Se o individuo reclamado pelo Governo Britannico, ou se o individuo reclamado pelo Governo Portuguez, se achar ainda sujeito a processo, ou estiver cumprindo sentença em virtude de condemnação por outro crime no territorio d'uma das Altas Partes Contractantes, demorar-se-haa a sua extradição até que ou em razão de absolvição profetida, ou por ter cumpido sentença, ou por outro motivo esteja livre.

ARTIGO V.

Não se realisará a extradição se subsequentemente á practica do acto criminoso, ou á instauração do processo criminal, ou á condemnação do reu, resultar isenção de acção criminal ou de punição em razão do tempo decorrido, segundo as leis do paiz ao qual fôr feita a instancia da extradição.

ARTIGO VI.

Um criminoso refugiado não será entregue se o delicto que motivar o pedido de extradição fôr de caracter politico, ou se elle provar que esse pedido foi de facto apresentado no intuito de o processar ou punir por um delicto de caracter politico.

ARTIGO VII.

Um individuo entregue não pode em caso algum ser deido em prisão ou mettido em processo no Estado no qual fôr concedida a extradição por crime ou em razão de factos diversos dos que determinaram a extradição, emquanto não tiver voltado ou tido occasião de voltar ao Estado pelo qual foi entregue.

This stipulation does not apply to crimes committed after the extradition.

ARTICLE VIII.

The requisition for extradition shall be made through the Diplomatic Agents of the High Contracting Parties respectively.

The requisition for the extradition of an accused person must be accompanied by a warrant of arrest issued by the competent authority of the State requiring the extradition, and by such evidence as, according to the laws of the place where the accused is found, would justify his arrest if the crime had been committed there.

If the requisition relates to a person already convicted, it must be accompanied by the sentence of condemnation passed against the convicted person by the competent Court of the State that makes the requisition for extradition.

A sentence passed *in contumaciam* is not to be deemed a conviction, but circumstances may cause a person so sentenced *in contumaciam* to be dealt with as an accused person.

ARTICLE IX.

If any requisition for extradition be in accordance with the foregoing stipulations, the competent authorities of the State applied to shall proceed to the arrest of the fugitive.

ARTICLE X.

If the fugitive has been arrested in the British dominions, he shall forthwith be brought before a competent Magistrate, who is to examine him and to conduct the preliminary investigation of the case, just as if the apprehension had taken place for a crime committed in the British dominions.

In the examinations which they have to make in accordance with the foregoing stipulations, the authorities of the British dominions shall admit as valid evidence the sworn depositions or the affirmations of witnesses taken in the dominions of Portugal, or copies thereof, and likewise the warrant and sentences issued therein, and certificates of, or judicial documents stating the fact of, a conviction, provided the same are authenticated as follows:—

1. A warrant must purport to be signed by a Portuguese Judge, Magistrate, or officer.

2. Depositions or affirmations, or the copies thereof, must purport to be certified under the hand of a Portuguese Judge, Magistrate, or officer to be the original depositions or affirmations, or to be the true copies thereof, as the case may require.

3. A certificate of or judicial document stating the fact of a conviction must purport to be certified by a Portuguese Judge, Magistrate, or officer.

4. In every case such warrant, deposition, affirmation, copy, certificate, or judicial document must be authenticated either by the oath or some witness, or by being sealed with the official seal of the Minister of Justice, or some other Portuguese Minister; but any other mode of authentication for the time being permitted by the law in that part of the British dominions where the examination is taken may be substituted for the foregoing.

ARTICLE XI.

If the fugitive has been arrested in the dominions of Portugal, his surrender shall be granted if upon examination by a competent authority it appears that the documents furnished by the British Government contain sufficient *prima facie* evidence to justify the extradition.

The Portuguese authorities shall admit as valid evidence records drawn up by the British authorities of the depositions of witnesses, or copies thereof, and records of conviction, or other judicial documents or copies thereof: Provided that the said documents be signed or authenticated by an authority whose competence shall be certified by the seal of a Minister of State of Her Britannic Majesty.

ARTICLE XII.

The extradition shall not take place unless the evidence be found sufficient, according to the laws of the State applied to, either to justify the committal of the prisoner for trial, in case the crime had been committed in the territory of the said State, or to prove that the prisoner is the identical person convicted by the Courts of the State which makes the requisition, and that the crime of which he has been convicted is one in respect of which extradition could, at the time of such conviction, have been granted by the State applied to. In Her Britannic Majesty's dominions the fugitive criminal shall not be surrendered until the expiration of fifteen days from the date of his being committed to prison to await his surrender.

ARTICLE XIII.

If the individual claimed by one of the two High Contracting Parties in pursuance of the present Treaty should be also claimed by one or several other Powers on account of other crimes or offences committed upon their respective territories, his extradition shall be granted to that State whose demand is earliest in date.

Não se applicará esta estipulação aos crimes commettidos depois da extradição.

ARTIGO VIII.

O pedido de extradição deverá ser apresentado pelos Agentes Diplomaticos das Altas Partes Contractantes.

Deverão acompanhar o pedido de extradição d'um individuo accusado o mandado de captura expedido pela autoridade competente do Estado reclamante, e documentos que, em face das leis do logar onde estiver o accusado, bastem para justificar a prisão d'este se ali se tivesse perpetrado o crime.

Se o pedido se referir a individuo previamente condemnado terá de ser acompanhado da sentença condemnatoria proferida contra o criminoso pelo tribunal competente do Estado que requerer a extradição.

Uma sentença de revelia não equivale a uma condemnação; mas dadas certas circumstancias poderá o individuo condemnado á revelia ser tratado como accusado.

ARTIGO IX.

Quando o pedido de extradição fór feito em harmonia com as precedentes estipulações, as autoridades competentes do Estado requerido procederão á captura do refugiado.

ARTIGO X.

Se o refugiado fór preso nos dominios Britannicos terá de comparecer immediatamente perante o Magistrado competente, que deverá inquirir-o e proceder a investigações preliminares de causa, como se a prisão se houvesse effectuado em raz do crime commettido nos dominios Britannicos.

Nas investigações a que tiverem de proceder em conformidade com as precedentes estipulações, as autoridades dos dominios Britannicos deverão admitir como testemunho valido os depoimentos ou asserções juradas de testemunhas tomadas nos dominios de Portugal, ou seus traslados, e pela mesma forma os mandados e sentenças proferidos, e attestados ou documentos officiaes affirmativos de condemnação proferida, contanto que esses documentos sejam legalisados pela forma seguinte:—

1. Um mandado terá de ser firmado pelo Juiz, Magistrado, ou funcionario Portuguez.

2. Os depoimentos e asserções e seus traslados devem vir acompanhados de declarações firmadas por Juiz, Magistrado, ou funcionario Portuguez de como são os depoimentos ou asserções originaes ou seus traslados authenticos, segundo cumprirem.

3. Um attestado ou documento judicial affirmativo de condemnação proferida deverá ser certificado por Juiz, Magistrado, ou funcionario Portuguez.

4. Em cada causa especial estes mandados, depoimentos, allegações traslados, attestados, ou documentos officiaes, tem de ser authenticados ou por juramento de testemunhas, ou pelo applicação do sello official do Ministro do Justica ou de outro Ministro de Portugal; poderá porem substituir a precedente outra forma de legalisação reconhecida por lei vigente na parte dos dominios Britannicos onde se effectuar a diligencia.

ARTIGO XI.

Se o refugiado fór preso nos dominios de Portugal, deverá ser concedida a extradição se do exame a quo proceder a autoridade competente resultar que os documentos apresentados pelo Governo Britannico contem elementos sufficientes *prima facie* para justificar a extradição.

As autoridades Portuguezas considerarão elemento valido as certidões passadas pelas autoridades Britannicas dos depoimentos das testemunhas ou seus traslados, e certidões do sentença condemnatoria ou outros documentos judiciaes ou traslados d'elles: Uma vez que os referidos documentos sejam assignados ou legalisados por uma autoridade cuja competencia seja authenticada com o sello d'um Ministro d' Estado de Sua Magestade Britannica.

ARTIGO XII.

Não se effectuará a extradição se os documentos apresentados não forem bastantes para, segundo as leis do Estado requerido, sejeitar o preso a julgamento se o crime tivesse sido perpetrado no territorio do referido Estado, ou para provar que o preso é o proprio individuo condemnado pelos Tribunaes do Estado requerente, e que o crime por que foi condemnado é d'aquelles pelos quaes ao tempo da condemnação podia o Estado requerido ter concedido a extradição. O criminoso refugiado nos dominios de Sua Magestade Britannica só poderá ser entregue findo o prazo de quinze dias contados da entrada na cadeia para aguardar n'ella a occasião da entrega.

ARTIGO XIII.

Se o individuo reclamado por uma das Altas Partes Contractantes nos termos do presente Tratado fór ao mesmo tempo reclamado por outra ou outras Potencias por outros crimes ou delictos commettidos em seus respectivos territorios, será concedida a extradição ao Estado cuja instancia preceder na data as outras.

ARTICLE XIV.

If sufficient evidence for the extradition be not produced within two months from the date of the apprehension of the fugitive, or within such further time as the State apply to, or the proper Tribunal thereof, shall direct, the fugitive shall be set at liberty.

ARTICLE XV.

All articles seized which were in the possession of the person to be surrendered at the time of his apprehension shall, if the competent authority of the State applied to for the extradition has ordered the delivery thereof, be given up when the extradition takes place; and the said delivery shall extend not merely to the stolen articles, but to everything that may serve as a proof of the crime.

ARTICLE XVI.

All expenses connected with extradition shall be borne by the demanding State.

ARTICLE XVII.

The stipulation of the present Treaty shall be applicable to the Colonies and foreign possessions of both of the High Contracting Parties, so far as the laws for the time being in force in such Colonies and foreign possessions respectively will allow.

The requisition for the surrender of a fugitive criminal who has taken refuge in any of such Colonies or foreign possessions may be made to the Governor or chief authority of such Colony or possession by the Chief Consular authority of the other State in such Colony or possession.

Such requisitions may be disposed of, subject always, as nearly as may be, and so far as the law of such Colony or foreign possession will allow, to the provisions of this Treaty, by the said Governor or chief authority, who, however, shall be at liberty either to grant the surrender or to refer the matter to his Government.

The High Contracting Parties shall, however, be at liberty to make special arrangements in their respective Colonies and foreign possessions for the surrender of criminals who may take refuge therein, on the basis, as nearly as may be, and so far as the law of such Colony or foreign possession will allow, of the provisions of the present Treaty.

Requisitions for the surrender of a fugitive criminal emanating from any Colony or foreign possession of either of the High Contracting Parties shall be governed by the rules laid down in the preceding Articles of the present Treaty.

ARTICLE XVIII.

The present Treaty shall come into force ten days after its publication, in conformity with the forms prescribed by the laws of the High Contracting Parties. It may be terminated by either of the High Contracting Parties at any time on giving to the other six months' notice of its intention to do so.

The Treaty shall be ratified, and the ratification shall be exchanged at Lisbon as soon as possible.

In witness whereof the respective Plenipotentiaries have signed the same, and have affixed thereto the seal of their arms.

Done in duplicate at Lisbon the seventeenth day of October, in the year of our Lord one thousand eight hundred and ninety-two.

(L.S.) GEORGE G. PETRE.

ARTIGO XIV.

Se os documentos apresentados dentro de dois mezes contados da data da captura do refugiado, ou no prazo de tempo que indicar o Estado requerido ou o Tribunal competente d'esse Estado, não forem sufficientes para se conceder a extradição, o preso será posto em liberdade.

ARTIGO XV.

Todos os objectos apprehendidos ao individuo sujeito a extradição e em seu poder ao tempo da captura serão entregues se a autoridade competente do Estado requerido assim o determinar quando se levar a effecto a extradição; e esta entrega abrangerá não só os objectos que houverem sido subtraídos mas tudo que servir para provar o crime.

ARTIGO XVI.

Todas as despesas relativas a extradição serão custeadas pelo Estado que a reclamar.

ARTIGO XVII.

As estipulações d'este Tratado terão applicação ás Colonias e possessões ultramarinas de ambas as Altas Partes Contractantes até onde o permittirem as leis ao tempo em vigor em taes Colonias e possessões ultramarinas.

O pedido de extradição do criminoso que se houver refugiado em alguma d'essas Colonias ou possessões ultramarinas poderá ser apresentado ao Governador ou primeira autoridade da Colonia ou possessão de que se tratar pela principal autoridade Consular do outro Estado existente n'essa Colonia ou possessão.

Estes pedidos poderão ser resolvidos sujeitandoos tanto quanto ser possa, e até onde o permittir a lei da Colonia ou possessão ultramarina, ás disposições d'este Tratado, pelo referido Governador ou primeira autoridade a qual todavia terá a liberdade de deferir a extradição ou de referir o assumpto ao seu Governo.

As Altas Partes Contractantes terão comtudo a faculdade de estabelecer accordos especiaes nas suas respectivas Colonias e possessões ultramarinas para a extradição de criminosos que se houverem refugiado n'ellas, tomando por base, tanto quanto possível e até onde o permittir a legislação da Colonia ou possessão, as disposições d'este Tratado.

Pedidos d'extradição d'um criminoso que emanarem de Colonia ou possessão ultramarina d'uma das Altas Partes Contractantes serão regalados pelas prescripções extradas nos precedentes Artigos d'este Tratado.

ARTIGO XVIII.

O presente Tratado entrará em vigor dez dias depois da sua publicação official segundo as formas prescriptas na legislação das Altas Partes Contractantes. Poderá em qualquer tempo dal-o por findo uma das Altas Partes Contractantes communicando á outra com a anticipação de seis mezes a intenção de assim fazer.

O Tratado será ratificado, e trocadas as ratificações em Lisboa no mais curto prazo possível.

Em testemunho do que os respectivos Plenipotenciarios o assignaram e lhe pizeram o sello das suas armas.

Feito em duplicado em Lisboa aos dezeseite dias do mez de Outubro, do anno de nosso Senhor Jesus Christo de mil oitocentos e noventa e dois.

(L.S.) A. AYRES DE GOUVÊA.

And whereas a Protocol relative to the said Treaty was signed at Lisbon on the thirtieth day of November, one thousand eight hundred and ninety-two, which Protocol is in the terms following:—

The stipulations of the present Treaty do not apply to extradition between British and Portuguese India, which is reserved for ulterior negotiation.

Done in duplicate at Lisbon, the thirtieth day of November, in the year of our Lord one thousand eight hundred and ninety-two.

Her Britannic Majesty's Envoy Extraordinary and Minister Plenipotentiary.

GEORGE G. PETRE.

And whereas the ratifications of the said Treaty and Protocol were exchanged at Lisbon on the thirteenth day of November, one thousand eight hundred and ninety-three.

Now, therefore, Her Majesty, by and with the advice of Her Privy Council, and in virtue of the authority committed to Her by the said recited Acts, doth order, and it is hereby ordered, that from and after the nineteenth day of March, one thousand eight hundred and ninety-four, the said Acts shall apply in the case of Portugal, and of the said Treaty and Protocol with His Majesty the King of Portugal.

Provided always, and it is hereby further ordered, that the operation of the said Extradition Acts, 1870 and 1873, shall be suspended within the Dominion of Canada so far as relates to Portugal and to the said Treaty and Protocol, and so long as the provisions of the Canadian Act aforesaid of 1886 continue in force, and no longer.

(Extract from the London Gazette of Friday, March 9, 1894.)

1894.

LEGISLATIVE ASSEMBLY.
NEW SOUTH WALES.

FARMERS' AND SETTLERS' ASSOCIATIONS.

(PETITION FROM GUNNING FRANCIS PLUNKETT, PRESIDENT, AND JOHN LOUIS TRÉFLÉ,
SECRETARY, IN FAVOUR OF CERTAIN RESOLUTIONS.)

Received by the Legislative Assembly, 17 May, 1894.

The humble Petition of the undersigned, representing the Farmers' and Settlers' Associations of the Colony,—

To the Honorable the Speaker and Members of the Legislative Assembly, in Parliament assembled,—
RESPECTFULLY SHOWN,—

That the following resolutions were agreed to by delegates assembled together on two separate occasions at Cootamundra and Junee, representing the aforesaid Farmers' and Settlers' Associations:—

Central Leases.

1. That this Conference affirms the policy that the whole of the State land in the Central Division should be left open to *bonâ fide* settlement, under conditions that will be just to each industry and to all citizens, and a safeguard against abuse by persons who traffic in land.

Leasing.

2. That in the opinion of this Conference the system of conditional purchase be continued, and provision also be made for the leasing of land, with the right of purchasing a portion during the currency of lease of twenty-eight years.

Finality of Selection.

3. That the best way of bringing about finality of selection is to limit the area which shall be alienated to any holder; and this Conference is of opinion that a stringent condition should be imposed upon all future holders that, if they transfer, they shall sell only to residential buyers, always provided that this law shall have no retrospective effect.

Mining on Private Property.

4. That this Conference is of opinion that a Mining on Private Lands Bill should be passed into law, and would urge on the Government the desirableness of at once taking steps to insure the passing of such a measure.

The Prices of Special Areas.

5. That in the opinion of this Conference the 18th clause of the Land Act of 1889 gives the Governor power to modify by proclamation the terms and conditions now being enforced upon special area selectors of country lands, and that he be petitioned through the Government either for a reduction of the price per acre or a reduction of the annual instalment on the same by 50 per cent., or such percentage as, on revaluation by the Land Board, is found to be competent to meet individual cases.

Limitation of Special Areas.

6. That in the opinion of this Conference the system of special areas outside of suburban lands be abolished, and within the suburban radius only the area to be limited and prices not raised.

The Ballot System.

7. That in cases where a ballot is taken, and applications are lodged for a conditional purchase and conditional lease in virtue thereof, both applications should be balloted for.

Non-forfeiture of Selections.

8. That no selectors' lands be forfeited on account of non-payment of instalments on their conditional purchases, so long as they pay interest on such instalments and the principal due to the Government on such selection, to have an operation of not more than five years at a time.

Elective Land Boards.

9. That the composition of the Land Boards be as follows:—Chairman, to be appointed by the State; his two colleagues, to be elected by the electors of the Land District.

Breeding Grounds for Rabbits.

10. That this Conference directs the attention of the Minister for Lands to the necessity for immediate dealing with the reserves, which are now breeding grounds for rabbits and other vermin.

Abolition of Auction Sales.

11. That in the opinion of this Conference the system of auction sales be abolished outside town and suburban lands.

Transferred Conditional Purchases and Leases.

12. That no additional conditional purchase or conditional lease should be allowed in virtue of a conditional purchase which has been transferred, this to apply retrospectively.

Suburban Lands.

13. That in the opinion of this Conference, with a view to encourage settlement on suburban lands, small holdings be established on residence and improvement qualifications with the right of purchase in the future.

Forty-sixth Clause.

14. That this Conference affirm the decision arrived at by the Wagga Wagga Conference last year, that clause 46 of the Land Act of 1839, which permits the exchange and surrender of land, should be repealed.

Interest.

15. That in the opinion of this Conference those who are at present unable to pay their interest on conditional purchases should be allowed an extension of time.

Survey.

16. That delay in survey is detrimental to the interest of settlement

Reserves.

17. That reserves not required for public purposes be revoked and that the reserves required be withdrawn from leases and placed under proper control.

Stock Acts.

18. That in the opinion of this Conference the various Acts relating to live stock should be consolidated, in order to avoid the complications at present continually arising; that provision should be made for stockowners to make their annual returns to one office only and to pay their assessments to one officer only; that provision should be made for stockowners to record their votes for the election of directors by proxy or some other method; that circumulative votes be abolished; that stock boards throughout the Colony should work in unison in the destruction of noxious animals.

Roads.

19. That a more convenient system be devised by the Minister for Lands in the arranging and the laying out of the surveyed roads of the Colony than at present obtains.

Railways.

20. That in the opinion of this Conference the Railway Commissioners should not be expected to pay interest on loan capital expended on railway construction, but that they should be expected to pay only working expenses; that rents and receipts from lands should be set apart as a sinking fund and security for such loan money.

Local Government.

21. That in the opinion of this Conference it is desirable that a Local Government Bill should be passed by Parliament.

National Bank.

22. This Conference is of opinion that the establishment of a National Bank would be of great benefit to the Colony.

Private Townships.

23. That the Government should repurchase private townships near railway lines if two-thirds of the residents of the districts petition for such.

Protection.

24. That the policy to be adopted by the Farmers' and Settlers' Association of New South Wales be protection, and that it be embodied in the platform of the Association.

Central Division.

25. That in view of Mr. Copeland's public utterances in his capacity as Minister for Lands, that his intended Land Bill would provide for throwing open half the leases in the Central Division, this Conference reaffirms the resolution of two previous Conferences, that the whole of these leases should terminate in June, 1895.

Land Bill.

26. That in the opinion of this Conference it is not desirable that the present Government should introduce any amending Land Bill until an appeal be made to the country by a general election.

And your Petitioners therefore pray that you will be pleased to take the foregoing resolutions into your favourable consideration before dealing with the land or other laws of this Colony, and your Petitioners, as in duty bound, will ever pray.

GUNNING FRANCIS PLUNKETT,

President.

JOHN LOUIS TRÉFLÉ,

Secretary.