

RAILWAYS.

AS an indication of progressive wealth, as well as a means for its greater production, the history of railway construction in these Colonies is highly instructive. The earliest railways were begun almost at the same time in New South Wales and Victoria. The works were, indeed, actually first commenced in New South Wales, but the first railway line opened for traffic was the Melbourne and Hobson's Bay line in 1854. It was originally intended in both Colonies that the lines should be constructed by private enterprise; but as soon as the vast utility of the system became evident it was also apparent that only the Government could hope to keep pace with the needs of the country in this direction. The private works already begun in New South Wales were, therefore, bought up by the Government in 1854, and all private lines fell into Government hands in Victoria one year later, except the Hobson's Bay railway, which was not acquired till 1878.

From 1855 the Governments of the two Colonies undertook and carried on the work of railway extension. The first Government railway-works were undertaken in South Australia in 1857; they were begun in New Zealand in 1863; in Queensland in 1864; in Tasmania in 1868; and in Western Australia in 1874.

It has been an unfortunate circumstance that no agreement was arrived at between the Colonies as to the adoption of an uniform gauge. The Government of New South Wales constructed all their lines upon the English standard gauge of 4 ft. 8½ in., while the Victorian Government adopted the 5ft. 3 in. gauge. Until the lines of the two Colonies met on the boundary no discomfort was of course experienced; but since then the break of gauge,

Evils of diversity
of gauge.

and the consequent transshipment, has been a source of irritation and inconvenience. The South Australian Government adopted at the outset the 5 ft. 3 in. gauge of Victoria; but finding that the construction of lines of this gauge involved a heavy expense, the more recent lines in the outlying districts were built on a gauge of 3 ft. 6 in. The line joining Adelaide with the Victorian border was, however, constructed on the wider gauge, so that the line from Melbourne to Adelaide should be uniform. The private line, which prolongs the South Australian system into New South Wales as far as Silverton, is on the 3 ft. 6 in. gauge. All the Queensland lines are built on the gauge of 3 ft. 6 in., so that transshipment is necessary on the boundary between that Colony and New South Wales. The difficulty caused by this diversity of gauge is already found to be troublesome. It is admitted on all hands that the trouble can be got over only by establishing uniformity of gauge, and every year in which action is delayed will make the establishment of that uniformity more costly. Tasmania, Western Australia, and New Zealand have adopted the 3 ft. 6 in. gauge. The first line laid down in Tasmania was on the 5 ft. 3 in. gauge, but it was soon altered to 3 ft. 6 in. By the purchase of the Main Line Company's property the Tasmanian Government now controls a system of 374 miles of railway open for traffic, together with a further 67 miles in course of construction.

Progress of
railway con-
struction.

The progress of railway construction was anything but rapid during the earlier years, except, perhaps, in the case of Victoria. This was in a great measure owing to the sparseness of the population, and the natural fear that the income would not justify the expense of widely extended lines. It was also due in some degree to the low estimation in which Australasian securities were held in London, and the consequent high rate of interest at which money for railway construction had to be borrowed. The initial difficulties attendant on railway construction may be said to have ended about 1871, since when progress has been made by all the colonies, as the following figures show :—

EXPENDITURE ON CONSTRUCTION.

Miles of Railway open for Traffic.

Colony.	1861.	1871.	1881.	1889.
New South Wales.....	73	358	*1,041	\$2,263
Victoria	214	329	1,247	‡2,198
Queensland.....	.....	218	800	2,064
South Australia.....	56	132	832	1,774
Western Australia.....	.....	.....	92	499
Tasmania .....	.....	45	+167	374
New Zealand .....	.....	145	1,333	1,912
Australasia.....	343	1,227	5,512	‡11,084

* Includes 45 miles private lines. † Includes 122 miles private lines. ‡ Includes 667 miles private lines. § To 30 June, 1890. ¶ To 30 June, 1889.

The following table shows the total expenditure incurred on construction of Government lines only, for 1889 :— Expenditure on construction.

Colony.	Length of lines open.			Gauge.	Government lines open for traffic to the close of 1889.	
	Government.	Private.	Total.		Total cost of construction.	Average cost per mile.
New South Wales ...	miles. *2,182	miles. 81	miles. 2,263	ft. in. 4 8½	£ 30,555,123	£ 14,003
Victoria	†2,198	...	2,198	5 3	29,125,280	13,245
Queensland	2,064	...	2,064	3 6	13,332,046	6,460
South Australia	1,756	18	1,774	{ 5 3 } { 3 6 }	10,976,376	6,251
Western Australia...	204	295	499	3 6	871,377	4,271
Tasmania	204	170	374	3 6	1,549,848	7,597
New Zealand	1,809	103	1,912	3 6	13,899,955	7,684
Australasia.....	10,417	667	11,084	.....	100,310,005	9,629

* To 30 June, 1890. † To 30 June, 1889.

Every Colony except Western Australia shows a surplus of revenue and revenue over working expenditure, notwithstanding that the expenditure.

avowed object of railway construction, in some of the colonies, has been to promote settlement, apart from considerations of profitably working the lines. The particulars of traffic receipts for 1889 were :—

Colony.	Receipts.	Working Expenses.	Net Earnings.
	£	£	£
New South Wales	2,633,086	1,665,835	967,251
Victoria	3,110,140	1,945,837	1,164,303
Queensland	796,344	594,649	201,695
South Australia.....	927,812	519,978	407,834
Western Australia.....	40,849	54,339	- 13,490
Tasmania	75,925	57,831	18,094
New Zealand	1,095,569	682,787	412,782
Australasia	8,679,725	5,521,256	3,158,469

(-) Minus denotes excess of working expenses over receipts.

Cost of construction.

It would hardly be fair to institute comparisons between the cost of construction per mile in Australasia and in the densely populated countries of Europe, for while in Europe the resumption of valuable ground is, perhaps, the heaviest expense in connection with the building of railways, in the colonies this item of expenditure is not of leading importance. The cost per mile is given for

India.....	£13,202
Canada.....	11,551
Cape Colony	9,217

while for Australasia it is £9,629.

The average interest payable on all Australasian loans is 4·20 per cent., and the returns yielded by the railways is 3·17 per cent., showing a loss in working of 1·03 per cent., equivalent to £1,033,193. It is to be understood that the following figures are to be taken as approximate only :—

Colony.	Interest returned on Capital.	Average interest payable on Loan Expenditure.
	per cent.	per cent.
New South Wales	3·17	3·90
Victoria	4·00	4·15
Queensland	1·51	4·76
South Australia	3·71	4·17
Western Australia	1·55*	4·10
Tasmania	1·17	4·10
New Zealand	2·97	4·21
Australasia	3·17	4·20

* Represents loss.

The population and area of territory per mile of line open varies considerably. As regards population per mile of line open, Western Australia and South Australia—the most extensive Colonies—show most favourably; but, in comparison to the area of the territory, Victoria and New Zealand take the lead. The annexed table shows the relation of the railway mileage to population and to the area of each Colony at the close of 1889 :—

Proportion of miles of line to population and area.

Colony.	Population per mile of line open.	Square miles of territory per mile of line open.
New South Wales	496	137
Victoria	508	40
Queensland	196	324
South Australia	183	509
Western Australia	90	2,185
Tasmania	405	70
New Zealand	325	55
Australasia	342	285

Proportion in other countries.

In the following table are shown the population and area of territory per mile of line open in other countries. Of course a fair comparison can only be made between Australasia and other young countries in process of development :—

Country.	Population per mile of line open.	Area in square miles of territory per mile of line open.
Argentine Republic	844	243
Brazil	2,267	577
Canada	357	273
Chili	151	173
India	16,860	57
United Kingdom	1,908	6
France	1,745	7
Germany	1,845	8
Italy	3,866	14
Spain	3,003	34
Russia (in Europe)	4,542	105
Netherlands	2,717	8
Scandinavia	1,171	52
United States	350	22
Australasia	342	285

Earnings per mile.

The gross and net earnings of Australasian railways per mile of line open are shown in the following table :—

Colony.	Earnings per mile open 1889.	
	Gross.	Net.
	£	£
New South Wales	1,206·73	443·28
Victoria	1,414·98	529·71
Queensland	385·82	97·72
South Australia	528·36	252·25
Western Australia	214·99	—71·00
Tasmania	272·18	88·69
New Zealand	605·62	227·78
Australasia	884·34	303·61

— Indicates loss.

Earnings per mile in other countries.

Taking into consideration the sparse population of Australasia, these figures do not compare unfavourably with those of Europe,

where the gross earnings per mile of line open are stated to be as follows :—

United Kingdom.....	£3,624
France .. .	2,459
Russia .. .	2,327
Germany .. .	2,056
Austria Hungary .. .	1,890
Italy .. .	1,320
Australasia .. .	884

The following table shows the number of passengers carried on the Government lines of the colonies in 1881 and 1889. It must be borne in mind, however, that the large increase in the numbers for New South Wales and Victoria—especially in regard to the latter—arises from the extension of suburban lines :—

Colony.	Passengers carried.	
	1881.	1889.
	Number.	Number.
New South Wales	6,907,312	17,071,945
Victoria	5,365,672	31,098,750
Queensland	247,284	1,829,126
South Australia	3,032,714	4,484,795
Western Australia	67,144	.....
Tasmania	102,495	316,498
New Zealand	3,362,266*	3,376,459
Australasia	19,084,887	58,177,573†

* 1885-6. The New Zealand returns do not include passengers with season tickets.

† Exclusive of Western Australia.

The amount of goods tonnage is shown in the subjoined table. In the period from 1881 to 1889 there was an increase of about 140 per cent., varying from less than 50 per cent. in South Australia to 420 per cent. in Queensland :—

Colony.	1881.	1889.
	Tons.	Tons.
New South Wales	2,033,850	3,788,950
Victoria	1,249,049	3,372,158
Queensland	161,009	835,139
South Australia	646,625	962,803
Tasmania	44,396	110,949
New Zealand	523,099	1,954,126
Total	4,658,028	11,024,125

Proportion of goods traffic.

Receipts from
passenger
traffic.

The percentage of receipts from coaching traffic to the total receipts is about the same in the Australasian Colonies as in Europe. The proportion in the United Kingdom for 1889 was 44 per cent. for coaching traffic, to 56 per cent. for goods traffic. The figures for the various colonies are given below, with the exception of Western Australia, whence returns have not been received. The position of Victoria is specially remarkable; in no country of the world is there greater passenger traffic than in Victoria:—

Colony.	Coaching Traffic.	Goods Traffic.
	Per cent.	Per cent.
New South Wales	40·25	59·75
Victoria	46·82	53·18
Queensland	29·97	70·03
South Australia	30·77	69·23
Tasmania ..	44·86	55·14
New Zealand.....	32·42	67·58
Total	39·79	60·21

Quantity of
rolling stock.

The following table gives the different classes of rolling stock in the possession of the Australasian Governments; and, considerable as are the numbers of each class, they could with advantage be largely increased:—

Rolling Stock.

Colony.	Locomotives.	Passenger Carriages.	Goods Waggon.
New South Wales	439	1,064	9,304
Victoria	461	875	8,616
Queensland	219	276	3,614
South Australia	318	295	2,848
Tasmania*	42	106	774
New Zealand	272	512	8,156

* Including private lines.