

# REPORT

TO

THE SECRETARY OF STATE FOR INDIA IN COUNCIL

ON

## RAILWAYS IN INDIA,

FOR THE YEAR

1871-72.



BY JULAND DANVERS, ESQ.,

GOVERNMENT DIRECTOR OF THE INDIAN RAILWAY COMPANIES.

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Presented to both Houses of Parliament by Command of Her Majesty.

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# REPORT.

To His Grace the DUKE of ARGYLL, K.T., Secretary of State for India.

MY LORD DUKE,

India Office, 1st July 1872.

I HAVE the honour to lay before your Grace the following Report on Railways in India for the year 1871-72. The revenue accounts and statistical statements are made up to the end of 1871. Those relating to the capital expenditure are brought up to the close of the official year ending the 31st March 1872.

2. During the year 1871 a length of 250 miles of railway was completed, and since the 1st January last 128 miles more have been finished, making a total length of 5,204½ miles now open for traffic. Of this extent, 5,136 miles are in the hands of guaranteed companies, and 68½ are in the direct possession of Government. A further length of about 2,440 miles is in course of construction, of which 940 are being executed by Companies and 1,503 by Government. The sections which make up the 250 miles opened during the past year are the Chord line of the East Indian Railway, which is 124 miles in length, and joins the extremities of the arc formed by the original main line between Raneegunge and Luckeserai; the coal branch from the Chord line to the Kurhurballee coalfield, 23 miles in length; 15 miles of the Great Indian Peninsula Railway extending from the east bank of the Kistna River to Raichore, where the line from Madras joins it; 49 miles of the Madras Railway, including the section which extended this Company's system to Raichore; and 39 miles of the Wudwan branch of the Bombay, Baroda, and Central India Railway. It is worthy of remark that this last portion of Railway, which is constructed on the 5' 6" gauge, was completed and opened within a year of the acquisition of the land at a cost of about 7,000*l.* a mile.

Progress during  
1871.

3. The following table gives the length of each undertaking and the stages of progress at which those not yet completed have arrived:—

Railway.	Gauge.	Length of Line.	Length opened during 1871.	Length opened since Dec. 1871.	Total Length opened.	Portion laid with Double Line.	Length remaining to be finished.
Guaranteed.	East Indian { Main line } { Jubbulpore line }	5' 6" { 1,280	147	—	1,280	415	—
		5' 6" { 224	—	—	224	—	—
	Great Indian Peninsula	5' 6" 1,270	15	10	1,270	287	—
	Madras	5' 6" 862	49	—	832	—	30
	Bombay, Baroda and Central India	5' 6" 391	39	40	390	23	1
	Scinde, Punjab and Delhi	5' 6" 674	—	—	674	—	—
	Great Southern of India	5' 6" 378	—	—	168	—	210
	Eastern Bengal	5' 6" 159	—	—	159	—	—
	Oude and Rohilkand	5' 6" 733	—	78	120	—	613
	*Carnatic	3' 3½" 100	—	—	19	—	81
	Nulhattee	4' 0" 27½	—	—	27½	—	—
	Calcutta and South-eastern	5' 6" 28	—	—	28	—	—
	Punjab Northern	3' 3½" 270	—	—	—	—	270
	Indus Valley	3' 3½" 480	—	—	—	—	480
	Rajpootana	3' 3½" 370	—	—	—	—	370
Indore to Khundwa (Holkar's)	3' 3½" 88	—	—	—	—	88	
State.	Patree branch of Bombay, Baroda and Central India Railway	5' 6" 22	—	—	—	—	22
	Carwar and Hoobice	3' 3½" 144	—	—	—	—	144
	Wurda Valley	5' 6" 15	—	—	—	—	15
	BKRAR.						
Khannaon	5' 6" 7½	—	—	7½	—	—	
Oomrawuttee	5' 6" 5½	—	—	5½	—	—	
NIZAM'S GOVERNMENT.							
Goolburga to Hyderabad	5' 6" 116	—	—	—	—	116	
Total		7,642½	250	128	5,204½	725	2,483

4. It will be observed that the State lines at present form a very small proportion of those which are completed; but several are in progress, and contracts have been made for the execution of the works and for the provision of permanent way materials and rolling stock for many miles. The lines are, for the most part, con-

\* The gauge of the open line of the Carnatic is at present 3' 6½", but it is to be reduced to 3' 3½".

State lines.

structed on the metre gauge, and every endeavour has been made to keep down expense by using the lightest rails and stock suitable for the expected traffic. It is still contended by some engineers that very little will be saved by adopting the narrow gauge, but the time is approaching when the question will be settled by absolute results. The system of administration which is applied to the State lines is as follows:—The different projected railways are divided into suitable lengths, and the general management of the operations is placed, according to their importance, in charge of Chief or Superintending Engineers. There is also a Deputy Controller for each line, who is responsible for everything connected with the accounts and financial management. Both the Engineer and the Controller are directly under the orders of the Supreme Government, which is advised in respect to the works by a Consulting engineer specially appointed for the purpose, and in respect to the accounts by the Accountant General in the Public Works Department. The stores and materials which have to be supplied from this country are obtained upon requisitions from India, under the orders of the Secretary of State in Council, through the store department of this office, on the advice of an Inspecting officer, assisted by a Consulting engineer, who are jointly answerable for the specifications and for the examination and testing of the goods before they are despatched to India.

Damage from floods.

5. The rails used are flat-footed, carried on timber sleepers, without chairs, weighing 20 kilograms per lineal metre, which is nearly 40 lbs. to the yard. The maximum rigid wheel base of the locomotives is 3 metres; the maximum weight on a pair of wheels is to be 6,000 kilograms.

6. During the past year the works on several lines have suffered severely from floods. Both in Bengal, in the North-West provinces, and in Bombay, great damage was done; in some places from 20 to 30 inches of rain fell in the course of two or three days, and the ground being already soaked, the water ran off in torrents, carrying away bridges, embankments, roadways, and villages. In one river a scour 60 feet below its ordinary bed was produced. Large lakes were formed in valleys, which were as rough as the sea in a high wind. The native city of Jounpoor, on the Goomti River, consisting of 9,000 houses and 25,000 inhabitants, was nearly destroyed. The principal buildings and from 2,000 to 3,000 houses were reported to be swept away, and 10,000 persons were for a time deprived of their homes. The floods in Bengal were caused by unusual storms near the sources of the rivers, which, after a course of some thousands of miles, find their exit in the Bay of Bengal. It would appear to be almost possible, in such a case, to give notice by telegraph of the occurrence of exceptional rainfalls, so that precautions might be taken before the effects of the flood reach the distant plains of Bengal. On the Eastern Bengal Railway, while the floods were sweeping down bridges and culverts, it was found necessary to cut more water way through embankments to save the line; with a few days warning this might have been done beforehand. The repair of the damage done to this railway is estimated at Rs. 7,87,509. The Delhi Railway, between Umballa and Sirhind, suffered to an extent of about Rs. 20,80,000. The Bombay, Baroda, and Central India to the extent of Rs. 1,68,000.

7. The floods which produced these disastrous effects are described as unprecedented, but the recorded information on the subject of rainfall in India is still so imperfect, and the variations of the seasons from one extreme to another are so great, that the engineer has been obliged to work, in a great measure, in the dark, and it now seems pretty clear that mistakes have been made in attempting to confine or resist the streams rather than in making way for their overflow. The expensive nature of the works required to accomplish this object, and the doubts as to the possible volume of the water, led to the adoption of a course which appeared at the time most economical; but the experience of past years will, in this, as on many other points, be carefully attended to, with better hopes that similar errors will be avoided in the future.

Journey between England and India.

8. The journey to Bombay from this country by the Italian route is now reduced to 21 days. But the more facilities of locomotion are increased, the more would the desire for improved communication appear to be stimulated. The successful completion of the Mont Cenis tunnel, and the opening of the Suez Canal, have been followed by more serious public inquiry than has hitherto been made into the capabilities of the Euphrates route, a Parliamentary committee

having been engaged during the last and present sessions in investigating various projects for the purpose of establishing railway communication through Turkey and Arabia; and thought and ingenuity have been further stimulated to suggest a project for a direct line of railway communication to India by way of Trieste, Turkey, Persia, and Beloochistan, to Kurrachee. In the meantime, while these ambitious projects are receiving attention, the simple convenience of through booking arrangements has been offered to travellers between this country and the chief towns on the railways in India, tickets being issued by the Peninsula and Oriental Steam Navigation Company in London.

### PROCEEDINGS IN THIS COUNTRY.

9. The duties of the railway boards in this country are gradually becoming more confined to the review of the working of their respective undertakings, and to a general supervision of their officers in India, as well as to the supply of the necessary materials for maintaining the lines and keeping them properly equipped. During the past year 161,129 tons, of the value of 646,066*l.*, were shipped by the companies, in comparison with 263,449 tons of the value of 1,681,512*l.* the previous year. Six ships have been lost with cargoes valued at 32,882*l.*; five on their way to Bombay with goods belonging to the Great Indian Peninsula and Bombay, Baroda, and Central India Railway Companies, to the amount of 18,875*l.*; only 493*l.*, however, with materials of the latter. The remaining ship was freighted with goods for the Great Southern of India Railway, valued at 15,000*l.* All were fully insured. In addition to the above, 6,920 tons of goods, of the value of 61,699*l.*, were shipped by Government for State railways. The opening of the Suez Canal has led to the more general employment of steamers, the saving in time frequently being more valuable than the extra freight paid for using this route. Shipments.

SHIPPING OPERATIONS during 1871 on Account of the Guaranteed Railways.

Railway.	Number of Ships employed in 1871.	Number of Tons of Goods shipped in 1871.	Value of Goods shipped in 1871.	Amount paid for Freight and Insurance in 1871.	Average Rate of Freight and Insurance per Ton.			
					Freight.	Insurance.		
		Tons.	£	£	£	s.	d.	s.
East Indian	27	10,690	87,611	10,559	0	15	0	25
Great Indian Peninsula	94	19,198 { 84,082 fuel	154,084 51,704	35,703 110,168	1	17	2	
Madras	42	74,842	38,556	15,912	1	1	5	
Bombay, Baroda and Central India	35	*10,440	66,035	15,042	1	8	10	
Scinde, Punjab and Delhi	15	2,180	55,744	5,849	2	13	7	
Great Southern of India	4	2,672	5,300	3,484	1	6	1	
Eastern Bengal	7	1,212	5,630	1,652	1	7	3	
Oude and Rohilkund	63	15,813	181,402	21,638	1	4	7	
State Railways	20	6,920	61,699	3,630	0	10	6	with- out insurance.
<b>Total</b>	<b>307</b>	<b>168,049</b>	<b>707,765</b>	<b>223,617</b>				

10. The following table gives the shipments in each year from the commencement of operations, and shows that 4,361,297 tons of goods, of the value of 28,880,893*l.*,

\* Exclusive of fuel.

have been sent to India, that 6,906 ships have been employed in this operation, and that 67 of them have been wrecked or lost.

## SHIPMENTS FROM THE COMMENCEMENT.

Period.	Number of Ships employed.	Number of Ships lost.	Number of Tons of Goods shipped.	Value of Goods shipped.
Up to end of 1860	2,605	39	2,094,686	£ 10,431,976
In 1861	407	—	182,621	1,669,443
" 1862	280	1	138,013	1,487,582
" 1863	279	2	166,840	1,285,464
" 1864	233	—	102,318	1,018,164
" 1865	442	2	199,157	1,729,543
" 1866	581	7	312,227	2,527,757
" 1867	512	5	333,329	3,052,652
" 1868	364	3	188,858	1,849,554
" 1869	455	1	211,750	1,432,784
" 1870	461	1	263,449	1,688,209
" 1871	307	6	168,049	707,765
Total	6,926	67	4,361,297	28,880,893

Proprietors.

11. There is a slight increase in the number of proprietors of Indian railway stock during the year. The capital has increased from 91,102,810*l.*, on the 31st March 1871, to 93,564,367*l.* on the same day in 1872; while the number of shareholders last year increased from 51,887 to 55,924, and debenture and debenture stock holders declined from 6,759 to 3,658. The number of natives who hold any share in railway property is still perfectly insignificant.

Railway.	Number of Shareholders on 31st December 1871.						Number of Debenture Holders.		Total Number of Proprietors on the 31st December 1871.
	Registered in England.			In India.			Bond.	Stock.	
	With Stock or Shares to the Amount of 1,000 <i>l.</i> and upwards.	With Stock or Shares of less Amount than 1,000 <i>l.</i>	Total in England.	Europeans.	Natives.	Total in India.			
East Indian	6,730	8,196	14,926	179	156	335	1,158	793	17,212
Great Indian Peninsula	5,410	7,404	12,814	82	98	180	527	666	15,345
Madras	2,949	4,100	7,049	—	—	—	213	—	7,262
Bombay, Baroda and Central India	2,116	3,827	5,943	11	69	80	528	—	6,551
Scinde, Punjab and Delhi	3,336	4,983	8,319	75	13	88	—	—	8,407
Great Southern of India	660	886	1,546	2	6	8	48	—	1,589
Eastern Bengal	672	979	1,651	26	20	46	177	96	1,970
Oude and Rohilkund	902	1,232	2,134	58	33	91	30	—	2,255
Carnatic	232	491	723	—	—	—	—	—	723
Total	23,007	32,098	55,096	433	395	828	2,676	1,555	61,314

Proposed amalgamation of railways in the Madras Presidency.

12. A suggestion having been made to amalgamate the Great Southern of India Railway with the Carnatic, it was further proposed to amalgamate with them the Madras Railway, so that all the lines in that Presidency might form one system, under a single management. The two smaller companies have expressed their readiness to accede to the proposition, and to join upon fair and equitable terms; but the directors of the Madras Company were not favourable to the arrangement, and the question, having been referred to the shareholders, was decided in the negative. The amalgamation, therefore, if effected, will be limited to the other companies, who would thereby gain strength by union, and secure economy and simplicity in the management.

The following STATEMENT gives the Number of Persons employed in the various Departments of the Railways in the Bengal, Madras, and Bombay Presidencies, on the 30th September 1871.

Railways.	Agent's Department, including Medical and Barrack Departments.			Account Department.			Audit Department.			Printing and Stationery Department.			Stores Department.			Traffic Department, including Steam Ferry.			Engineer's Department.			Carriage and Wagon Departments.			Locomotive Department.			Telegraph Department.			Grand Total.			No. of Miles open.	No. of Stations.
	Europeans and East Indians.	Natives.	Total.	Europeans and East Indians.	Natives.	Total.	Europeans and East Indians.	Natives.	Total.	Europeans and East Indians.	Natives.	Total.	Europeans and East Indians.	Natives.	Total.	Europeans and East Indians.	Natives.	Total.	Europeans and East Indians.	Natives.	Total.	Europeans and East Indians.	Natives.	Total.	Europeans and East Indians.	Natives.	Total.	Europeans and East Indians.	Natives.	Total.					
East Indian	31	158	189	—	—	—	44 <sup>a</sup>	633 <sup>a</sup>	676 <sup>a</sup>	8	229	237	30	992	723	446	4,105	4,551	119	6,972	7,091	128	3,242	3,370	616	2,127	2,743	58	1,100	1,158	1,480	19,267	20,757	1,280	149
Eastern Bengal	3	51	59	3	82	85	1	22	23	—	24	24	2	4	6	96	1,279	1,375	42	2,317	2,359	7	127	134	61	602	663	6	127	143	226	4,645	4,871	1,594	33
Calcutta & South-Eastern (State).	2	—	2	—	3	3	—	2	2	—	1	1	—	1	1	4	47	51	2	81	83	—	3	3	4	20	24	—	6	6	12	164	176	28	8
Oude and Rohilkund	19	36	55	3	47	50	8	15	23	8	53	61	—	—	—	5	110	115	3	90	93	—	—	—	26	342	368	2	12	14	74	625	700	49	5
Punjab and Delhi	18	29	47	—	—	—	47 <sup>b</sup>	436	902	1	7	8	9	13	22	129	235	364 <sup>c</sup>	43	32	75	—	—	—	145	706	851	—	—	—	392	1,065	1,457	595	49 <sup>d</sup>
Sindh <sup>d</sup>	6	34	40	—	—	—	—	—	—	—	—	—	2	20	22	26	124	150	10	441 <sup>e</sup>	451	—	—	—	61	296	347	<sup>f</sup>	<sup>f</sup>	<sup>f</sup>	95	915	1,010	106	8
Great Indian Peninsula <sup>d</sup>	58	280	316	—	—	—	—	—	—	—	—	—	22	243	265	490	4,001	4,500	180	11,744	11,924	—	—	—	596	5,976	6,572	<sup>f</sup>	<sup>f</sup>	<sup>f</sup>	1,353	22,224	23,577	1,274	181
Bombay, Baroda, and Central India <sup>d</sup>	10	77	87	—	—	—	—	—	—	—	—	—	14	139	153	63	1,321	1,376	35	2,650	2,685	—	—	—	180	1,080	1,210	<sup>f</sup>	<sup>f</sup>	<sup>f</sup>	244	5,287	5,511	326	60
Madras <sup>d</sup>	31	228	259	—	—	—	—	—	—	—	—	—	10	65	75	199	1,593	1,795	98	2,900	2,998	—	—	—	383	2,051	2,434	47	127	174	788	6,967	7,755	832	80
Great Southern of India	29	107	127	—	—	—	—	—	—	—	—	—	—	—	19	245	264	25	459	684	—	—	—	—	65	374	439	—	—	—	129	1,385	1,514	168	22
Carnatic	3	10	13	—	—	—	—	—	—	—	—	—	3	3	—	16	16	—	29	29	—	—	—	—	3	8	11	—	—	—	6	66	72	19	4
Indus Flotilla <sup>d</sup>	10	70	80	—	—	—	—	—	—	—	—	—	—	—	43	575	618	20	370	390	—	—	—	—	—	—	—	—	—	—	73	1,015	1,088	—	—
Total	214	1,060	1,274	8	132	138	100	714	814	17	314	331	89	1,180	1,269	1,521	13,654	15,178	577	28,275	28,852	135	3,872	3,507	2,080	13,582	15,662	113	1,382	1,495	4,852	63,685	68,517	4,799 <sup>e</sup>	549

<sup>a</sup> Audit Account and Cash.

<sup>b</sup> Audit and Account.

<sup>c</sup> Includes Telegraph.

<sup>d</sup> The Account, Audit and Printing, and Stationery Departments are included under Agent's Department.

<sup>e</sup> Exclusive of 80 men employed by Contractors.

<sup>f</sup> Included in Traffic Department.

<sup>g</sup> Including one temporary station.

N.B.—Where the employes of the Carriage and Wagon Department are not shown separately they are understood to be included with those of the Locomotive Department. The Departments of the Indus Flotilla do not correspond with those of the Railways, and are therefore shown separately.

## PERSONS EMPLOYED ON THE RAILWAYS.

13. The foregoing statement shows that, on the 30th September last, the number of persons employed in the management and maintenance of the railways was 68,517, of whom 4,852 were Europeans or East Indians and 63,665 natives. Compared with the previous year, when there were 197 miles less open and 69 fewer stations, the aggregate number shows a diminution of 700, the Europeans having been reduced by 196 and the natives by 504. The greatest reduction has been on the Scinde, Punjab and Delhi Railway, the numbers now employed being 1,457 instead of 6,228. The East Indian has also reduced its staff from 22,265 to 20,737. On the other hand, the Great Indian Peninsula has increased its numbers from 21,205 to 23,577, the mileage having at the same time increased from 1,184 to 1,274, and the number of stations from 107 to 131. On the Bombay, Baroda, and Central India, where the mileage has likewise increased from 312 to 326, and the stations from 51 to 60, the staff has grown from 4,734 to 5,511.

## ACCIDENTS.

14. The statements which follow are compiled in India for the Government, and exhibit the number, nature, and causes of the accidents which have occurred on the railways there during the year 1871.

15. Compared with previous years the results are favourable. While in the year 1869 the number of passengers killed from causes beyond their control was 31, and in 1870 was 4, there was only one last year, and death in this case was caused, not by any accident to a train, but by a fall on the platform through insufficient lighting. Eight passengers were, however, injured through slight collisions and accidents to trains. In the two previous years the numbers thus injured were 63 and 92. The per-centage killed last year was 0·05 per million, and injured 0·42 per million. The mean length open was 5,020 miles, the number of passengers carried was 18,976,944, and the train mileage with goods and passenger trains was 13,844,840.

16. Of the 74,650 servants employed 246 received injuries, 84 of which were fatal, three from causes beyond their control, and the rest from their own misconduct or incaution.

17. Of the 548 accidents of all kinds, including many very trifling in themselves and of little consequence, 314 arose from cattle being run over on lines duly fenced, 76 from fire, 70 from the train or vehicles getting off the proper line, 35 from collisions, and 53 from other causes. The accidents from fires are most frequent on the Punjab and Delhi line, and would seem to prove that the arrangements for arresting sparks from the engines must require attention. The animals run over consist of buffalos, goats, deer, leopards, cows, and bullocks. A camel, a crocodile, and a hyena were last year also victims.

18. The most serious accident was on the Beas River, on the Delhi line, but it was happily attended by no loss of life. A portion of the bridge had been washed away, and by some strange and unaccountable blunder a train was allowed to be driven into the gap, and had a very narrow escape of being engulfed in the river. Engine, tender, and break-van did indeed fall into the chasm, but the passenger carriage remained suspended in a most extraordinary way until the passengers were released from their perilous position.

19. The usual supplementary return, peculiar I think to Indian railways, "of deaths of passengers in carriages and at stations," from causes unconnected with the working of the lines, shows that in the year 1871, 110 persons died while travelling. Ninety were males and twenty were females, some were infants and some were aged. One man and one woman are put down as being 90 years old, the former dying from heat apoplexy, the latter from natural causes. With two or three exceptions all were natives, and the principal causes of death were cholera, fever, dysentery, and diarrhoea. Each case is, of course, fully investigated when it occurs, and it is supposed that in many instances the sufferers start on their journey in a condition unfit to bear the fatigue and heat, hoping to reach friends or some sacred resting-place before they died.



TABLE No. I.

ABSTRACT of the NUMBER and NATURE of the ACCIDENTS and of the INJURIES to LIFE and LIMB which have occurred on all Railways open for Traffic in India during the years 1870 and 1871.

Presidency.	Mean Mileage open.	Railways.	Classification of Accidents to Trains, &c.						Passengers.				Servants of Companies or of Contractors.				Others.						Total Persons of all Classes.			
			Main Heads.					Total.	From Causes beyond their own Control.		From their own Misconduct or want of Caution.		From Causes beyond their own Control.		From their own Misconduct or want of Caution.		Whilst crossing at Level Crossings.		Whilst trespassing (including Suicides).		Miscellaneous.					
			I. Collisions.	II. Getting off proper Lane.	III. Fire.	IV. Running over Cattle.	V. Other Causes.		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.
Bengal	1,503	East Indian	1871	13	10	5	117	6	151		8	5	14	1	10	36	50	3		46	5	4		95	87	182
	1,354		1870	6	10	1	128	2	147	1	36	9	14	5	8	25	46	1	1	41	8	7	1	89	116	205
	156	Eastern Bengal	1871		2				2				1		2	2	2			4				6	3	9
	112		1870		1	8	3		8				2	1	2	2				2				5	4	9
	28	Calcutta and South-eastern.	1871	1					1																	
	28		1870		1		8		4							1	1							1	1	2
	27	Nulhattee	1871									1												1		1
	28		1870				1	8	9											1				1		1
	42	Oude and Rohilkund	1871		1	2		1	4									1		1				1	1	2
	42		1870		3	1	4	4	14									1			1				2	2
Madras	554	Punjab and Delhi	1871	2	18	54	4	9	87	1		2	1	1	7	8				4				15	10	25
	541		1870	3	34	38	4	18	97				3	1	8	4								8	3	16
	106	Scinde	1871		1	5	23	22	51			1		2	2		1							2	1	5
	106		1870		4	1	18	5	28								1								1	1
	925	Madras	1871	3	1	1	62	1	68			2			8	11	4			3	1			15	14	29
	711		1870	3	4	6	58	8	74	3				6	2	10	7			2				21	11	32
	168	Great Southern of India.	1871					1	1							1	1							1		2
	168		1870					1	1							1								1		1
	19	Carnatic	1871				1		1																	
	19		1870				2		2																	
Bombay	1,269	Great Indian Peninsula	1871	15	31	9	79	12	146			2		2	19	57	2		10	4	1		32	65	97	
	1,160		1870	46	182	2	52	31	813		1		2	1	6	44	46	1	1	14	11	1		61	67	128
	323	Bombay, Baroda, and Central India.	1870	1	5		26	2	36					1	6	6	11			2	3			9	20	29
	312		1871	8	19	1	46	1	75		3				1	9	8			8	2			17	14	31
India	5,020		1870	88	70	78	314	58	548	1	8	8	21	3	21	81	144	9		70	13	5		177	204	381
	4,581		1871	69	258	58	814	78	772	4	42	9	21	18	20	100	114	2	4	68	22	8	1	204	224	428

(10612)

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TABLE NO. II.—NUMERICAL ABSTRACT of ACCIDENTS of all Classes on all Railways open for Traffic in India during the Year 1871.

	BENGAL, NORTH-WESTERN PROVINCES, OUDE, AND PUNJAB.														MADRAS.						BOMBAY.				Total.				
	East Indian.		Eastern Bengal.		Calcutta and South-Eastern.		Nulhattee.		Oude and Rohilkund.		Punjab and Delhi.		Scinde.		Madras.		Great Southern of India.		Carnatic.		Great Indian Peninsula.		Bombay, Baroda, & Central India.						
	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed & Injured.		
<b>PASSENGERS.</b>																													
From causes beyond their own control, viz. :-																													
From accidents to trains - - -	—	8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	8	8
From other causes - - - - -	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1
Total - - - - -	—	8	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	8	9
Per million of passengers - - -	—	1.47	—	—	—	—	—	—	—	—	0.53	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.05	0.42	0.47
From their own misconduct or incaution	5	14	—	1	—	—	1	—	—	—	2	1	—	1	—	2	—	—	—	—	—	2	—	—	—	8	21	29	
Per million of passengers - - -	0.92	2.57	—	0.64	—	—	13.84	—	—	—	1.05	0.53	—	12.12	—	0.88	—	—	—	—	—	0.58	—	—	—	0.42	1.11	1.53	
Total from all causes - - - -	5	22	—	1	—	—	1	—	—	—	3	1	—	1	—	2	—	—	—	—	—	2	—	—	—	9	29	38	
<b>SERVANTS OF COMPANIES OR OF CONTRACTORS.</b>																													
From causes beyond their own control -	1	10	—	—	—	—	—	—	—	—	1	1	—	2	—	—	—	—	—	—	—	2	1	6	8	21	24		
From their own misconduct or incaution	36	50	2	2	—	—	—	—	—	1	7	8	2	—	8	11	1	1	—	—	19	57	6	11	81	141	222		
Total from all causes - - - - -	37	60	2	2	—	—	—	—	—	1	8	9	2	2	8	11	1	1	—	—	19	59	7	17	84	162	246		
<b>OTHER PERSONS.</b>																													
Crossing at level crossings - - -	3	—	—	—	—	—	—	—	—	—	—	—	—	—	4	—	—	—	—	—	2	—	—	—	—	9	—	9	
Trespassers, including suicide - - -	46	5	4	—	—	—	—	—	1	—	4	—	—	—	3	1	—	—	—	—	10	4	2	8	70	13	83		
Miscellaneous - - - - -	4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	5	—	5	
Total from all causes - - - - -	53	5	4	—	—	—	—	—	1	—	4	—	—	—	7	1	—	—	—	—	13	4	2	8	84	13	97		
Grand total of all classes from all causes -	95	87	6	3	—	—	1	—	1	1	15	10	2	3	15	14	1	1	—	—	32	65	9	20	177	204	381		
Mean length of railway open during the year (miles) - - - - -	1,503		1,564		28		27		42		554		106		825		168		19		1,269		323		5,026½				
Number of passengers carried - - - - -	5,443,103		1,550,243		345,893		72,227		397,094		1,892,561		82,478		2,284,606		818,483		91,087		3,464,156		2,609,139		18,576,944				
Train mileage (goods and passengers) -	5,209,086		432,707		89,848		21,056		43,143		908,447		156,756		1,692,772		248,345		28,177		4,250,351		814,152		13,844,840				

TABLE No. III.

Showing the TOTAL NUMBER of ACCIDENTS to PERSONS of all kinds, and to TRAINS, &c., on all RAILWAYS open for TRAFFIC in each Presidency of India, during the Years 1870 and 1871.

Presidencies.	Mean Length of Railway open.	Total Number of Train Miles.	Train Miles per Mile open.	Total Number of Accidents to Trains, &c. of all kinds.	Total Number of Passengers carried.	Average Number of Passengers per Mile opened.	Passengers.		Servants.				Trespassers, &c.		Total.			
							Killed.	Injured.	Beyond their own Control.		Within their own Control.		Killed.	Injured.	Killed.	Injured.	Killed and Injured.	
									Killed.	Injured.	Killed.	Injured.						
Bengal -	1871	2,416½	6,811,048	2,819	206	9,714,494	4,020	9	25	2	13	47	61	62	5	130	104	224
	1870	2,105	7,933,515	3,769	279	9,324,889	4,430	10	57	6	11	36	59	52	11	104	131	285
Madras -	1871	1,012	1,969,294	1,946	70	3,189,156	3,151	—	2	—	—	9	12	7	1	16	15	31
	1870	898	2,734,230	3,045	77	2,939,042	3,273	3	—	6	2	11	7	2	2	22	11	33
Bombay -	1871	1,592	5,064,503	3,181	182	6,073,294	3,815	—	2	1	8	25	68	15	7	41	85	126
	1870	1,578	4,834,594	3,064	416	5,882,940	3,728	—	6	1	7	53	55	24	14	78	82	160
India	1871	5,020½	13,844,840	2,758	548	18,976,944	3,780	9	29	3	21	81	141	84	13	177	204	381
	1870	4,581	15,502,339	3,384	772	18,146,371	3,961	13	63	13	20	100	114	78	27	204	224	428

## CAPITAL EXPENDITURE AND FINANCIAL POSITION OF THE RAILWAY COMPANIES.

20. A sum of 90,009,622*l.* guaranteed capital had been expended by the Railway Companies up to the close of the official year. It is estimated that about 8,000,000*l.* more will be required to complete the undertakings, and of this sum upwards of 3,500,000*l.* has been raised. During last year 2,325,293*l.* was expended. Last year also 3,723,156*l.* was raised, 1,539,743*l.* by means of share capital, 41,155*l.* by debentures, 2,096,124*l.* by debenture stock, and a sum of 46,134*l.* has been added to the amount of capital not bearing interest standing to the credit of the Companies.

21. The total amount which has been raised by the Companies had on the 31st March last reached 93,564,367*l.* Of this, 80,972,386*l.* consists of share capital, 1,954,100*l.* of debentures convertible into shares, 5,473,100*l.* of inconvertible debentures, which will be paid off in cash at fixed periods, 4,671,808*l.* of irredeemable debenture stock, and 492,973*l.* of capital not bearing interest.

22. The past financial year closed with a balance of 3,554,715*l.*, which it is estimated will cover the expenditure of the present year.

23. Statements Nos. 2 and 3, which follow, give the particulars of the capital expenditure since the commencement of operations and during last year.

### CAPITAL EXPENDITURE ON STATE RAILWAYS.

24. More accurate estimates than had before been attempted have now been made of the lines which have been sanctioned as State undertakings. In two cases contracts have been entered into for the execution of the works, so that a fair judgment may be formed of their ultimate cost, including permanent way and rolling stock. It will be seen by the subjoined list that, according to existing estimates, an expenditure of about 11,000,000*l.* will be incurred upon the lines now decided upon. Two of these, viz., the Calcutta and South-eastern and the Nulhatee, were purchased from the Companies by which they were constructed; and the two small branches from the Great Indian Peninsula Railway to Oomrawuttee and Khamgaon have been completed and opened. The rest are in course of execution or are being surveyed.

Name.	Length.	Estimated Cost.
<b>BRITISH.</b>		
		<b>£</b>
Rajpootana, { from Agra to Ajmère - 236	} 2,000,000	
„ „ Delhi to join the above - 125		
branch to Salt Works - 8		
Punjab, Northern - - - - - 270		2,700,000
Indus Valley - - - - - 480		3,000,000
Patree Branch to Bombay and Baroda Railway - - - - - 22		150,000
Carwar to Hooblee - - - - - 144		900,000
Wurda Valley - - - - - 15		80,000
Calcutta and South-eastern - - - - - 28		556,000
Nulhatee - - - - - 27½		30,000
Indore to Khundwa - - - - - 86		900,000
<b>BERAR.</b>		
Oomrawuttee - - - - - 5½		44,000
Khamgaon - - - - - 7½		47,000
<b>NIZAM'S GOVERNMENT.</b>		
Nizam's, Goolburga to Hyderabad - - - - - 116		1,000,000
		£11,407,000

25. Statement No. 1 shows the amounts which had, up to the 31st December last, been expended in England and India upon each of these lines. The whole aggregates 1,870,442*l.*, of which 379,158*l.* was disbursed between 1st April and 31st December last. Between that date and the end of the official year a further sum of 83,446*l.* has been expended in this country, including 30,000*l.* for the purchase of the Nulhatee line from the Oude and Rohilkund Company. No account has yet been received from India of the expenditure in that country during the last three months of the official year 1871-72. It will be observed that the Indore and Khundwa Railway, now called the Holkar State Railway, leading from the Great Indian Peninsula line to Indore, the capital of the territory of Holkar, and that the Mysore, Berar, and Nizam's lines, are included in the statement, and that 190,635*l.*, for which those States are responsible, has been expended on those undertakings.

STATEMENT NO. I.

STATEMENT OF EXPENDITURE incurred in ENGLAND and INDIA on INDIAN STATE RAILWAYS to 31st December 1871.

State Railway.	Preliminary Expenses.	Land.	Construction of Line.	Ballast and Permanent Way.	Stations and Buildings.	Electric Telegraph.	Plant.	Rolling Stock.	Maintenance.	Establishment.	Contingencies.	Suspense Accounts.	TOTAL.
BRITISH.													
Calcutta and South-eastern	638,518	158	5,016	—	—	—	—	—	—	—	—	—	643,685
Darjeeling	279	—	—	—	—	—	431	—	—	1,942	117	952	3,121
Rajpootana (Delhi District)	8,392	12,740	16,532	7,269	3,079	—	856	—	—	20,523	1,119	3,724	74,284
Do. (Agra District)	16,583	—	—	—	1,655	—	1,005	—	—	28,794	1,579	898	50,024
Moradabad, Deobund, and Roorkee	52	—	—	—	—	—	38	—	—	2,616	150	—	2,861
Indus Valley	53,907	—	961	—	1,509	—	3,315	—	—	35,189	2,361	1,840	99,082
Punjab, Northern	25,062	6,430	108,191	20,421	19,889	—	46,528	—	—	127,212	4,784	302,901	660,868
Hooblee and Carwar (Survey)	7,968	—	—	—	—	—	—	—	—	22,001	312	—	30,281
Neemuch	19,080	—	—	—	—	—	193	—	—	8,777	375	116	28,491
Indore and Khundwa	2,920	2	271	2	3,461	—	785	—	—	20,436	1,049	184	29,110
MYSORE.													
Mysore	544	—	—	—	—	—	831	—	—	9,016	247	—	10,638
NIZAM.													
Nizam's	1,174	—	38,975	1,383	3,274	—	4,422	—	—	30,635	1,347	7,811	89,071
BERAR.													
Oomrawuttee	112	245	8,151	27,699	3,656	110	295	—	—	3,806	123	—	44,103
Khamgaon	37	39	10,921	28,695	3,561	125	841	32	—	2,838	175	59	46,323
												Total	1,812,382

\* Purchase of Works.

N.B.—In addition to the sums included above, 58,060l. had been expended in England to 31st December 1871, for Stores, &c., for Indian State Railways, but for want of the necessary information, this expenditure cannot at present be charged to any specific lines. Since that date 30,000l. has likewise been expended in the purchase of the Nulhatee Railway.

8th June 1872.

STATEMENT No. 2.

Showing the Amount of Capital estimated to be required for each Undertaking as now sanctioned, the Amount authorised to be raised, the Amount raised, and the Amount withdrawn, to 31st March 1872.

Railway.	Estimated Cost of Lines.	Amount authorised to be raised on 31st March 1872.						Amount raised in England to 31st March 1872.					Amount raised in India to Date of last Advices.		Total Amount raised to 31st March 1872.	Total Amount withdrawn to 31st March 1872 (partly estimated).	
		Share Capital.	Debentures.		Debenture Stock.	Capital not bearing Interest.	Total.	Share Capital.	Debentures.		Debenture Stock.		Capital not bearing Interest.	Share Capital.			Capital not bearing Interest.
			Convertible into Shares.	Inconvertible.					Convertible into Shares.	Inconvertible.	Stock represented.	Cash received.					
East Indian—Main Line	£ 27,750,000	£ 22,587,400	£ 412,600	£ 2,950,000	£ 1,500,000	£ 155,897	£ 27,605,897	£ 22,206,472	£ 412,600	£ 2,954,000*	£ 1,500,000	£ 1,500,000	£ 154,559	£ 326,295	£ 1,838	£ 27,555,264	£ 27,565,692
„ Jubbulpore Line	£ 3,250,000	£ 2,648,100	£ 556,900	—	—	£ 30,084	£ 3,230,084	£ 2,632,450	£ 556,000	—	—	—	£ 30,084	£ 7,665	—	£ 3,227,049	£ 3,158,576
Great Indian Peninsula	£ 25,000,000	£ 20,000,000	—	£ 1,782,050	£ 3,065,900	£ 214,477	£ 25,061,827	£ 18,968,471	—	£ 1,782,050	£ 2,701,450	£ 2,475,559	£ 213,785	£ 404,731	£ 742	£ 28,840,288	£ 28,249,849
Madras	£ 11,000,000	£ 10,102,700	£ 199,700	£ 500,000	—	—	£ 10,802,400	£ 9,445,921	£ 199,700	£ 500,000	—	—	—	—	—	£ 10,145,621	£ 10,041,792
Bombay, Baroda, and Central India	£ 8,000,000	£ 7,480,000	£ 648,800	—	—	£ 18,000	£ 8,096,800	£ 7,092,122	£ 648,800	—	—	—	£ 18,000	£ 21,672	—	£ 7,780,594	£ 7,665,577
Scinde, Punjab, and Delhi	£ 11,000,000	£ 11,418,900	—	—	—	—	£ 11,418,900	£ 10,989,782	—	—	—	—	£ 86,004	—	—	£ 11,075,786	£ 10,220,494
Great Southern of India	£ 3,000,000	£ 2,388,800	£ 87,800	—	£ 425,000	£ 86,000	£ 2,882,400	£ 2,311,279	£ 87,800	—	£ 425,000	£ 425,000	£ 86,000	£ 1,221	—	£ 2,861,800	£ 1,721,861
Eastern Bengal	£ 8,000,000	£ 2,255,520	—	£ 237,050	£ 393,330	£ 1,965	£ 2,887,865	£ 2,238,932	—	£ 237,050	£ 295,109	£ 271,249	£ 1,965	£ 16,486	—	£ 2,765,632	£ 2,893,618
Oude and Rohilkund	£ 6,000,000	£ 3,883,700	£ 116,300	—	—	—	£ 4,000,000	£ 3,057,383	£ 48,300	—	—	—	—	£ 402,602	£ 14,400	£ 3,522,685	£ 3,400,063
Carnatic	£ 800,000	£ 800,000	—	—	—	£ 22,300	£ 822,300	£ 767,898	—	—	—	—	£ 22,300	—	—	£ 790,098	£ 98,166
<b>Total</b>	<b>£ 98,800,000</b>	<b>£ 88,454,920</b>	<b>£ 2,022,100</b>	<b>£ 5,469,100</b>	<b>£ 3,383,630</b>	<b>£ 478,578</b>	<b>£ 96,808,323</b>	<b>£ 79,705,710</b>	<b>£ 1,954,100</b>	<b>£ 5,473,100</b>	<b>£ 4,924,559</b>	<b>£ 4,671,808</b>	<b>£ 476,498</b>	<b>£ 1,266,676</b>	<b>£ 16,480</b>	<b>£ 98,564,867</b>	<b>£ 90,009,622</b>

\* Including £4,000 debentures, which fell due on 15th December 1870, payment of which had not been claimed on the 31st March 1872.

India Office, 8th April 1872.

T. W. KRITHI,  
Accountant.

STATEMENT NO. 3.

Showing the Amount received from and withdrawn by each Company during the Year ended 31st March 1872.

Railway.	Sums standing to the Credit of the Companies on the 31st March 1871.	Sums advanced to the Companies on the 31st March 1871.	Amount received					Amount withdrawn					Total received during the Year ended 31st March 1872.	Total withdrawn during the Year ended 31st March 1872.
			In England, between 1st April 1871 and 31st March 1872.				In India, between 1st April 1871 and the Date to which Accounts have been received.	In England, between 1st April 1871 and 31st March 1872.		In India.				
			Share Capital.	Debentures.	Debenture Stock.	Capital not bearing Interest.		On account of Stores, Establishment Charges, &c.	For Discharge of Debentures.	Date to which Accounts have been received.	Amount.	Estimated Withdrawals between Dates specified and 31st March 1872.		
East Indian: Main Line	—	*635,676	£ 268,915	—	£ 755,900	£ 28,417	—	£ 111,537	£ 288,370	31st December 1871	£ 13,077	£ 20,000	£ 1,053,232	£ 427,984
„ Jubbulpore Line	*69,404	—	30	—	—	10,016	—	†212	—	„	6,189	5,000	10,046	10,977
Great Indian Peninsula	808,156	—	439,615	—	736,304	7,701	—	318,797	767,995	„	384,045	70,000	1,183,620	1,490,837
Madras	156,053	—	218,910	41,150	—	—	—	56,233	25,900	„	160,151	70,000	260,060	312,284
Bombay, Baroda and Central India	266,454	—	208,460	5	—	—	—	98,582	170,200	„	46,120	45,000	208,465	359,902
Scinde, Punjab and Delhi	785,173	—	165,815	—	—	—	23,126	63,887	5,800	30th November 1871	19,135	30,000	188,941	118,822
Great Southern of India	788,331	—	44,900	—	418,000	—	—	4,832	75,000	31st December 1871	19,980	7,000	462,900	106,812
Eastern Bengal	3,797	—	16,871	—	185,920	—	126	14,176	271,750	„	36,119	12,000	202,917	884,045
Onde and Rohilkund	849,150	—	17,604	—	—	—	5,288	214,975	—	„	414,445	120,000	22,892	749,420
Carnatic	581,055	—	130,083	—	—	—	—	4,189	—	„	7,036	3,000	130,083	14,225
Total	4,392,573	635,676	1,511,203	41,155	2,096,124	46,134	28,540	886,996	1,600,015	—	1,056,297	382,000	3,723,156	3,925,308

\* These Balances are subject to adjustment in respect of Rolling Stock supplied by the Main line for the Jubbulpore line.

† These figures represent the amount of receipts on account of Transfer Fees, &c., taken in reduction of the total withdrawals. No withdrawals made in England during the year were charged in this country to the Jubbulpore line.

India Office, 8th April 1872.

T. W. KEITH,  
Accountant.

## STATE OF DEBENTURE LOANS on the 31st March 1873.

Railway.	Amount.			Rate of Interest.	Date at which Loan repaid.
	Convertible.	Inconvertible.	Total.		
East Indian	—	4,000		5	15th Dec. 1870. (remaining unclaimed on 31st March 1872.)
"	50,000	—		4½	10th July 1872.
"	—	1,000,000		4½	22d August 1872.
"	—	440,000		4½	19th March 1873.
"	—	10,000		4½	19th March 1875.
"	556,900	—		5	23d March 1875.
"	—	196,150		4½	10th August 1875.
"	—	1,024,000		4½	"
"	362,600	—		5	9th August 1876.
"	—	96,400		4½	10th August 1877.
"	—	183,450		4½	"
	969,500	2,954,000	3,923,500		
Great Indian Peninsula	—	435,000		5	30th June 1872.
"	—	42,800		4½	"
"	—	268,800		5	30th June 1873.
"	—	1,035,450		5	31st Dec. 1876.
	—	1,782,050	1,782,050		
Madras	—	500,000		4½	1st January 1876.
"	199,700	—		5	1st January 1877.
	199,700	500,000	699,700		
Bombay, Barode, and Central India	106,800	—		5	1st July 1872.
"	301,200	—		5	1st January 1875.
"	240,800	—		5	1st July 1876.
	648,800	—	648,800		
Great Southern of India	24,600	—		5	1st July 1872.
"	10,000	—		5	1st January 1874.
"	53,200	—		5	1st July 1874.
	87,800	—	87,800		
Eastern Bengal	—	181,550		5	1st November 1874.
"	—	55,500		5	1st November 1876.
	—	237,050	237,050		
Oude and Rohilkund	48,100	—		5	15th April 1875.
"	100	—		5	28th July 1876.
"	100	—		5	18th February 1879.
	48,300	—	48,300		
			7,427,200		

India Office,  
8th April 1872.

T. W. KEITH,  
Accountant.

26. The debenture loans which have been paid off during the year amounted to 2,815,285*l.*, and have been replaced by share capital or debenture stock. It will be observed by the last statement that the amount now out in this shape is 7,427,200*l.*, of which 2,099,200*l.* falls due in the current official year. Of this, 181,400*l.*, being convertible into shares at the option of the holder, will probably be replaced by share capital; of the rest, 1,000,000*l.*, will be renewed by the East Indian Railway Company at a lower rate of interest, and the remainder will be paid off.



27. The effects of the 1s. 10d. rate of exchange fixed in the contracts for the conversion into sterling of the capital expenditure in India and of the railway earnings has frequently been alluded to in former reports, and estimates have been formed of the amount thus contributed by Government to the construction of the lines. It is only recently that accurate data on the subject have been obtained. The subjoined statement has now been compiled by the Accountant of this office, and in it the actual losses and gains by Government in each year will be seen. Assuming that 2s. the rupee has been the average prevailing rate for bills of exchange drawn upon India, the net loss incurred by Government hitherto would be about 2,912,400*l.*, the gross loss having been 3,180,963*l.*, and the total gain 238,557*l.* The time has now arrived when the Government will recover much of this loss from the net revenue receipts, all of which are credited to the Government at 1s. 10d. the rupee. This year if the prevailing rate of exchange had been 2s., the gain would have been about 250,000*l.* by this means.

Effects of rate of exchange upon expenditure.

STATEMENT showing the LOSS or GAIN to INDIA in each year, by adopting in the Transactions with certain GUARANTEED INDIAN RAILWAY COMPANIES the Exchange of 1s. 10d. the Rupee, as compared with the rate of 2s. the Rupee, and as compared with the Average Rate obtained in each year for Bills of Exchange drawn on India; also the Gain in each Year by adopting in the Transactions with the Oude and Rohilkund Railway Company and the Indian Tramway or Carnatic Railway Company, the Exchange of 2s. the Rupee, as compared with the Average Rate obtained in each Year for Bills of Exchange drawn on India.

YEAR.	Loss by Exchange in adopting the Rate of 1s. 10d. the Rupee, as compared with that of 2s.	Gain by Exchange in adopting the Rate of 1s. 10d. the Rupee, as compared with that of 2s.	Loss by Exchange in adopting the Rate of 1s. 10d. the Rupee, as compared with the undermentioned Rates obtained for Bills on India.		Gain by Exchange in adopting the Rate of 1s. 10d. the Rupee, as compared with the undermentioned Rates obtained for Bills on India.		Gain by Exchange in adopting with the Oude and Rohilkund Railway Company, and the Indian Tramway or Carnatic Railway Company, the Rate of 2s. the Rupee, as compared with the undermentioned Rate obtained for Bills on India.	
			Average Rate for Bills on India.	£	Average Rate for Bills on India.	£	Average Rate for Bills on India.	£
1849-50	—	780	—	—	1 10½	195	—	—
1850-51	—	3,623	—	—	2 0¼	4,076	—	—
1851-52	13,091	—	2 0½	13,909	—	—	—	—
1852-53	21,819	—	1 11½	20,456	—	—	—	—
1853-54	37,162	—	2 0½	39,485	—	—	—	—
1854-55	59,845	—	1 11½	33,663	—	—	—	—
1855-56	111,750	—	2 0½	118,734	—	—	—	—
1856-57	147,361	—	2 1½	230,251	—	—	—	—
1857-58	177,262	—	2 0½	232,656	—	—	—	—
1858-59	303,874	—	*	—	—	—	—	—
1859-60	429,233	—	*	—	—	—	—	—
1860-61	469,759	—	*	—	—	—	—	—
1861-62	420,123	—	1 11½	393,865	—	—	—	—
1862-63	317,785	—	1 11½	297,923	—	—	—	—
1863-64	241,234	—	1 11½	226,489	—	—	—	—
1864-65	146,048	—	1 11½	136,920	—	—	—	—
1865-66	50,506	—	1 11½	44,193	—	—	—	—
1866-67	111,681	—	1 11	55,840	—	—	—	—
1867-68	101,877	—	1 11½	57,305	—	—	1 11½	674
1868-69	20,733	—	1 11½	11,669	—	—	1 11½	2,647
1869-70	—	40,031	—	—	1 11½	25,019	1 11½	6,878
1870-71	—	131,867	—	—	1 10½	32,966	1 10½	21,252

\* Up to the year 1860-61 inclusive, the Home Treasury was open at all times for the sale of Bills on India, at rates altered from time to time by advertisement. Consequent on the Mutiny it was necessary to refrain from drawing on India, and the exchange was raised to a prohibitory rate.

1st March 1872.

T. W. KEITH,  
Accountant.

28. The following statement gives the amount of the annual expenditure by the companies both in India and in England, during each financial year, since the commencement of operations. It will be seen that of the aggregate expenditure up to the present time 40 per cent., or 36,668,187*l.*, has been incurred in this country, and 60 per cent., or 53,341,435*l.*, in India.

STATEMENT OF WITHDRAWALS out of CAPITAL for EXPENDITURE; showing the Amount withdrawn in England and in India by all the Guaranteed Indian Railway Companies during each Financial Year from the commencement to 31st March 1872.

Year.	England.	India.	Total.
	£	£	£
1849-50	69,211	6,682	75,893
1850-51	61,164	38,099	99,263
1851-52	154,212	197,111	351,323
1852-53	174,920	252,640	427,560
1853-54	252,484	418,165	670,649
1854-55	960,878	769,278	1,730,156
1855-56	1,934,748	1,431,337	3,366,085
1856-57	1,752,813	1,762,287	3,515,100
1857-58	1,328,243	2,094,825	3,423,068
1858-59	1,941,033	3,551,075	5,492,108
1859-60	2,508,668	4,662,796	7,171,464
1860-61	2,388,315	5,190,400	7,578,715
1861-62	1,597,430	5,004,782	6,602,212
1862-63	1,852,393	4,010,951	5,863,344
1863-64	1,415,146	3,340,507	4,755,653
1864-65	1,396,821	2,725,419	4,122,240
1865-66	2,222,679	3,414,187	5,636,866
1866-67	3,958,357	3,339,346	7,297,703
1867-68	3,911,490	3,195,591	7,107,081
1868-69	1,969,814	2,512,084	4,481,898
1869-70	2,298,680	2,444,171	4,742,851
1870-71	1,899,054	1,888,014	3,787,068
1871-72	886,996	*1,438,297	*2,325,293
	36,935,549	53,688,044	90,623,593
Deduct amount withdrawn by the Calcutta and South-eastern Railway Company, this Railway having subsequently become the property of the State	267,362	346,609	613,971
	36,668,187	53,341,435	90,009,622

\* These amounts are partly estimated.

India Office,  
8th April 1872.

T. W. KERR,  
Accountant.

29. The following statement shows approximately how the expenditure has been applied :—

Distribution of Capital expended.

Railway Company.	Works and Bridges.	Permanent Way and Stations.	Freight and Insurance.	Rolling Stock and Engines.	Establishments.	Miscellaneous, Electric Telegraph, Stores, &c.
	£	£	£	£	£	£
East Indian - - - -	9,500,000	7,175,000	2,993,000	8,475,000	3,725,000	3,710,000
Great Indian Peninsula - -	3,447,072	7,415,274	—	2,804,039	351,274	1,666,400
Madras - - - -	3,290,358	3,783,330	Stores and Workshops, 394,200	1,063,733	855,900	486,132
Bombay, Baroda and Central India -	3,131,191	1,919,318	—	1,061,652	738,974	693,735
Scinde, Punjab and Delhi - -	1,974,327	3,402,534	765,646	Steamers and Barges, 377,863 1,884,781	1,026,810	670,012
Great Southern of India - -	1,128,969				177,994	103,830
Eastern Bengal - - - -	2,021,385			305,013	318,989	154,318
Oude and Rohilkund - - - -	529,190	1,055,007	—	241,818	311,524	102,296
Carnatic - - - -	6,100	31,599		12,063	23,959	13,057

## REVENUE.

30. Although the capital expended on the railways exceeded that at the end of the previous year by 2,300,000*l.*, and the mileage open has received an addition of 250 miles, the net revenue has been nearly stationary, showing a decrease of 2,524*l.* The gross receipts for 1870 were 6,213,865*l.* For the year 1871, they were 6,146,130*l.*, the Passenger and Miscellaneous traffic showing an increase of 16,171*l.* and 40,760*l.* respectively, but the goods traffic a falling off of 124,669*l.* The working expenses have at the same time been reduced from 3,367,261*l.* to 3,302,050*l.*

31. The decrease in traffic took place wholly on the East Indian and the Scinde, Punjab, and Delhi lines, but mainly on the former, which, traversing the valley of the Ganges, has to compete with that river. The falling off on the East Indian line amounted to upwards of 43,324*l.* in passenger, 257,300*l.* in goods, and 10,000*l.* in miscellaneous receipts. The diminution in the Scinde and Punjab lines, including the Indus Flotilla, amounted to upwards of 31,237*l.* On all the other lines an increase took place, amounting on the Great Indian Peninsula, which has no competing route, to nearly 200,000*l.*

32. The falling off in the receipts of the East Indian is to be attributed to a large diminution, as compared with the previous year, in the transport of railway materials for other lines, which caused a reduction of upwards of 150,000*l.* in the second half of the year; to the absence of the necessity, which arose in 1870, of conveying a very large amount of food grains to districts where scarcity prevailed; and to a stagnation of commerce, which checked the movement of seeds on the railway, either stopping it altogether, or, in consequence of the railway rates being higher than the goods could bear, transferring them to the river.

33. A competing route cannot, and should not, be prevented, but it is a question whether the company were wise in maintaining a rate which admitted of successful competition, while a lower charge might have brought profitable business. However this may be, the results above described furnish an example of how closely the success of the railways is connected with the commercial prosperity of the country. Not only is more or less produce conveyed from one part of the country to another, according to the demands of commerce, but when markets are dull, the saving of time is unheeded, and preference is given to the slower and more circuitous, but less expensive, routes of the river and, for short distances, the road.

34. It will be seen by the statement on page 28, compiled by the Accountant in this office, that a sum of 4,422,243*l.* was advanced by Government during the year for guaranteed interest. The earnings of the guaranteed railways having been 2,839,338*l.*, a net sum of 1,582,900*l.* became chargeable to the revenue of the country. It is estimated that a similar deficiency will occur in the present year. This is a large amount, and it is a question for serious consideration how it can be diminished. It must be borne in mind that a considerable portion of the system now open has still to be developed, so that in the natural course of things a diminution may be expected. It takes some time for a railway in India to produce the results that may fairly be expected from it. Of the 5,200 miles now completed, only about 1,600 have been opened ten years, and twice that length for about five years; and certain sections forming the connecting links in important lines of communication, such as those between Bombay and Madras, and between Bombay and Allahabad, have only been finished within the last year or two. It should also be borne in mind that, although traffic will fluctuate, and unfavorable seasons for trade and produce will sometimes closely follow each other, there is a steady average increase in the receipts per mile open, joining several years together, as the following table shows:—

Railway.	Average net receipts per mile open for five years,		
	From 1857 to 1861.	From 1862 to 1866.	From 1867 to 1871.
East Indian - - -	£ 636	£ 660	£ 999
Great Indian Peninsula - -	351	476	611
Madras - - -	185	267	397
Bombay and Baroda - - -	106	299	514
Eastern Bengal - - -	—	375	735

35. But taking all these circumstances into consideration, it must be acknowledged that expectations have hitherto been disappointed, both as regards cost of construction and the amount of earnings, and that on some lines the expenses of working and maintenance are out of proportion to the receipts. The average is 54.19 per cent. of the gross earnings; but on some lines it is as high as 98, 80, 70, and 60. The first step in these cases is to reduce expenditure, wherever practicable; the next to work the lines to the best possible advantage, by attracting traffic through all legitimate means, by imposing suitable rates, by watching the requirements of districts and the peculiar circumstances of the people, and by establishing unity and, as far as possible, uniformity in the traffic arrangements between the different companies. The local governments are most anxious to attain these objects, and I can answer for the railway Boards also being very desirous to develop the traffic and afford all reasonable conveniences to the trader and traveller. But it is impossible to disguise the fact that much time is wasted, and an irritation sometimes produced, by long and discursive correspondence upon matters which should be decided promptly and without difficulty. Both Government and the companies aim at the same object generally, but in the course of discussions interests which are identical are often made to appear diverse, and misunderstandings occur which are not favourable to harmonious action and efficient working. There is no reason why this should be so. It is much less in some quarters than in others, and where it is less the work goes on smoothly and satisfactorily.

36. A modified system of keeping and arranging the capital and revenue accounts has been established this year, and forms presenting in detail the working of each department in the railway have been settled. In the revenue accounts an accurate and explicit statement will be furnished of the earnings and expenses of each line during every half year, and by the detailed returns statistical data will be given, which, by affording the means of judging whether true economy has been practised and proper measures taken for developing the resources of the various undertakings, will be the best guide for future administration.

37. The mode of making up the half-yearly revenue accounts of the railways has also been re-settled during the year. It has hitherto been the practice to allow a period of two months, after the end of each half year, to elapse before closing the account, admitting into it any sum due on account of the earnings that may have been realized during that period, but excluding whatever may not have been realized, and leaving it to be added to the next or some future half year's account. It has now been settled that each half year's revenue account shall exhibit a complete statement of the transactions of the company for such period, without reference to earnings that may be unrealized, or to outstanding liabilities, so far as regards the *Statement of Accounts*; but all pecuniary transactions between the Government and the companies are of course based upon cash payments only, and no sums are credited to the companies, nor surplus profits divided, except upon money actually paid into the Government treasury from the railway earnings. As a rule credit is not given by the companies to their customers, so that the cases of debt are only exceptional, and apply to small amounts. It is the practice also to pay all earnings into the Government treasury as soon as realized.

38. The accounts of the State railways are also to be made up half-yearly, and to be compiled under similar rules.

STATEMENTS relating to the GROSS RECEIPTS and EXPENSES, the NET REVENUE,  
TRAIN MILEAGE, and GUARANTEED INTEREST for the Year ended 31st  
December 1871.

## GROSS RECEIPTS during Year

Railway.	Passenger Traffic.															
	Receipts from Passengers.											Receipts from Special Trains.	Receipts from Troop Trains.	Total Receipts from Passenger Traffic—(A.)	Passenger Receipts per Train Mile.	Live Stock.
	First Class.	Second Class.	Intermediate Class.	Third Class.	Fourth or Coolie Class.	Holders of Bunkers or Periodical Tickets.	Total Receipts from Passengers.	Total Receipts from Express Luggage, Parcels, Carriages, Horses, Buses, &c. conveyed in Passenger Trains.	Receipts for Mail Service.							
<b>GUARANTEED.</b>	£	£	£	£	£	£	£	£	£	£	£	£	£	£		
East Indian (Main Line)	32,582	34,704	36,406	665,369	—	1,614	588,704	63,161	5,747	3,304	34,308	673,389	2.88	761		
„ (Jubbulpore Line)	4,756	4,159	1,330	40,340	—	—	50,453	3,421	1,699	667	8,366	60,020	2.98	44		
Great Indian Peninsula	39,498	30,068	—	160,882	151,399	918	392,750	47,796	1,957	940	49,151	442,594	2.11	7,418		
Madras	12,506	16,394	—	140,453	9,319	7	178,789	20,223	—	233	4,026	203,881	2.41	632		
Bombay, Baroda and Central India	4,540	10,239	—	95,551 Mail 55,310	—	1,039	167,279	12,530	178	1,181	6,123	187,551	4.63	6.42		
Scinde, Punjab and Delhi	7,561	10,242	1,837	139,891	—	—	159,831	14,570	202	464	13,978	189,335	3.11	107		
Indus Flotilla	946	184	—	2,697	—	—	3,777	383	—	—	—	4,159	—	9		
Great Southern of India	766	1,154	—	37,101	—	14	39,054	1,846	—	46	402	41,342	3.27	39		
Eastern Bengal	3,702	2,599	—	14,276	52,177	1,435	74,179	7,232	—	19	169	81,617	3.77	34		
Onde and Rohilkund	814	938	—	—	11,570	—	13,323	1,560	1	110	—	15,013	0.96	3		
Carnatic	46	322	—	2,859	—	—	3,227	55	—	—	—	3,282	2.32	—		
<b>STATE.</b>																
Calcutta and South-eastern	—	Upper 278	—	Lower 4,660	—	16	4,944	146	—	—	—	5,090	2.50	8		
Khammon	—	—	—	—	—	—	325	32	—	—	—	357	1.60	—		
Oomrawuttee	—	—	—	—	—	—	349	40	—	—	—	389	1.70	—		
Nulhatee	202	189	306	3,445	—	—	4,139	463	—	334	—	4,936	4.67	—		
<b>Totals</b>	<b>98,308</b>	<b>111,400</b>	<b>20,837</b>	<b>1,190,780</b>	<b>224,405</b>	<b>5,638</b>	<b>1,651,132</b>	<b>166,694</b>	<b>9,774</b>	<b>7,330</b>	<b>106,632</b>	<b>1,941,571</b>	<b>2.77</b>	<b>17,484</b>		

MEMORANDUM.—The figures in this Statement are taken

ended 31st December 1871.

Goods Traffic.																		
Minerals.				General Merchandise from each Class.							Total Receipts from Goods Traffic—(B.)	Goods Receipts per Train Mile.	Total Receipts from Passenger and Goods Traffic—(A.) + (B.)	Passenger and Goods Receipts per Train Mile.	Total Miscellaneous Receipts—(C.)	Miscellaneous Receipts per Train Mile.	Total Receipts from Passenger, Goods and Miscellaneous—(A.) + (B.) + (C.)	Total Receipts per Train Mile
Coal and Coke.	Other Minerals.	Total Receipts from Minerals.	Construction Materials for other Railways.	First or Lowest Class.	Second Class.	Third Class.	Fourth Class.	Fifth and Highest Class.	Total.									
£ 130,177	—	£ 130,177	£ 127	—	—	included in first.			£ 1,437,362	£ 1,563,447	6'59	£ 2,243,836	8'42	£ 57,012	0'23	£ 2,300,848	9'66	
48	—	48	—	—	—	—	—	—	£ 60,615	£ 69,707	3'10	£ 138,333	6'08	£ 2,568	0'11	£ 138,801	6'17	
1,009	13,913	14,922	—	487,564	835,652	177,481	171,460	112,276	£ 1,834,433	£ 1,360,373	6'42	£ 1,822,367	8'21	£ 33,022	0'15	£ 1,855,389	8'76	
510	—	510	11,963 for Co's. own line. 17 21,615 for Co's. own line.	140,261	52,927	47,987	36,152	33,727	£ 310,954	£ 223,959	3'82	£ 527,940	6'23	£ 21,379	0'25	£ 549,219	6'40	
375	117	492		60,730 Misc. 1,421	79,088	101,533	6,923	8,089	£ 267,554	£ 298,042	7'40	£ 485,573	12'05	£ 16,210	0'40	£ 501,783	12'46	
—	285	285	—	79,875	48,416	21,071	31,253	6,317	£ 186,832	£ 187,226	3'08	£ 378,361	6'20	£ 12,229	0'20	£ 388,700	6'30	
—	—	—	—	6,398	26,874	12,183	10,465	5,46	£ 66,260	£ 56,262	—	£ 60,421	—	—	—	£ 60,421	—	
—	—	—	239	17,708	4,054	2,799	1,549	923	£ 27,926	£ 28,104	2'23	£ 69,520	5'51	£ 1,817	0'14	£ 71,348	5'05	
4,021	1,007	5,028	—	82,644	19,839	2,618	1,886	552	£ 107,289	£ 113,284	5'23	£ 194,901	9'06	£ 6,611	0'30	£ 201,512	9'31	
42	—	42	—	£ 5,540	1,091	1,821	462	285	£ 8,703	£ 9,750	4'51	£ 24,763	11'47	£ 853	0'39	£ 25,615	11'87	
—	—	—	1	118	30	24	18	46	£ 266	£ 267	0'18	£ 3,639	2'51	£ 21	0'01	£ 3,560	2'52	
5	8	8	—	—	62	—	23	1,783	£ 1,868	£ 1,894	0'92	£ 6,974	3'42	£ 971	0'47	£ 7,945	3'90	
—	—	—	—	—	—	—	—	—	—	£ 1,769	4'00	£ 2,126	4'36	£ 9	0'02	£ 2,135	4'32	
—	—	—	—	—	—	—	—	—	—	£ 1,303	5'06	£ 1,742	6'76	£ 8	0'03	£ 1,750	6'78	
465	38	503	—	510	364	407	229	125	£ 1,635	£ 2,158	3'04	£ 7,084	6'74	£ 704	0'66	£ 7,788	7'39	
129,185	12,385	141,570	33,869	2,329,132	629,017	807,144	360,268	164,613	£ 3,811,689	£ 4,022,615	5'75	£ 5,064,186	8'52	£ 153,412	0'23	£ 6,117,598	8'74	

from Returns furnished by the Agents in India.

## FARES and RATES in USE. EXPENDITURE ON REVENUE

Railway.	Passengers, per Mile.					Goods, per Ton per Mile.					Maintenance and Renewal of Way and Works.		Cost of producing Locomotive Power by Wages and Materials.	
	First Class.	Second Class.	Intermediate Class.	Third Class.	Fourth or Coolie Class.	First or Lowest Class.	Second Class.	Third Class.	Fourth Class.	Fifth and Highest Class.	Gross.	Per Train Mile.	Gross.	Per Train Mile.
	piea.	piea.	piea.	piea.	piea.	piea.	piea.	piea.	piea.	piea.	£	d.	£	d.
<b>GUARANTEED.</b>														
East Indian, Main Line	18	9	4½	3	—	—	—	—	—	—	199,629	9 08	308,580	18 07
East Indian, Jubbul-pore Line	—	—	—	—	—	—	—	—	—	—	30,543	10 98	42,707	12 70
Great Indian Peninsula	18	9	—	4	2 50	10	14	24	34	48	184,970	11 04	308,171	18 55
Madras { Day { Night	19 22	5 12	—	3	2	{ 8 12 }	14	18	24	36	89,975	12 00	105,951	16 02
Bombay, Baroda and Central India	15	7	—	{ 3 4 Mail }	—	10	14	20	28	40	77,739*	23 18	91,907	27 41
Scinde, Punjab and Delhi	18	7	4	3	—	10	14	18	25	35	100,567	19 98	116,424	23 00
Great Southern of India	18	8	—	3	—	12	14	18	24	36	9,222	8 77	14,734	14 02
Eastern Bengal	12	6	—	4½	3	9	14	19	26	40	26,432	24 08	30,362	18 81
Oude and Rohilkund	18	9	—	—	3	{ 7 9 }	14	18	25	27	5,875	58 68	4,407	34 51
Carnatic	12	6	—	4	—	{ 12 16 }	20	24	36	48	463	8 88	632	5 38
<b>STATE.</b>														
Calcutta and South-eastern	—	{ Upper 9 }	—	{ Lower 3 }	—	9	14	19	28	36	1,716	10 11	2,328	17 28
Khangaum	18	9	—	4	2 50	10	14	24	34	43	651	17 64	773	20 87
Oomrawattee	18	9	—	4	2 50	10	14	24	34	48	Maintained by capital.	—	456	21 28
Nulhatee	28	14	7	5	—	12	18	24	36	12	762	8 00	1,054	16 48
Indus Flotilla	50	8	—	4	—	7	9	11 08	16	24	—	—	—	—
											647,500	11 11	1,109,754	19 08

\* NOTE.—This includes 15,450*l.* for special works and repairs rendered necessary by the extraordinary floods of 1871.



ACCOUNT during Year ended 31st December 1871.

Repairs and Renewals of Carriages and Wagons.		Coaching and Merchandise.		Rates and Taxes.		Compensation for Personal Injury, &c.		Compensation for Damage and Loss of Goods.		Legal and Parliamentary Expenses.		Miscellaneous Working Expenditure, not included in the foregoing.		Total Working Expenditure.	
Gross.	Per Train Mile.	Gross.	Per Train Mile.	Gross.	Per Train Mile.	Gross.	Per Train Mile.	Gross.	Per Train Mile.	Gross.	Per Train Mile.	Gross.	Per Train Mile.	Gross.	Per Train Mile.
£ 20,057	d. 4.52	£ 217,448	d. 10.87	£ 11,540	d. .58	—	—	£ 1,807	d. .10	£ 2,178	d. .11	£ 108,195	d. 7.35	£ 981,125	d. 4.03
8,879	4.74	15,918	8.20	134	.07	—	—	442	0.24	15	—	19,338	6.58	107,370	4.46
110,451	6.76	210,168	11.90	7,025	0.30	1,908	0.10	528	0.03	1,729	0.08	78,155	4.42	1,012,001	4.77
15,892	2.24	43,721	6.20	5,292	0.75	71	0.01	250	0.03	619	0.09	26,006	2.96	281,517	3.32
27,091	8.06	57,162	17.03	3,469	1.03	628	0.15	684	0.20	543	0.16	240,328	12.01	289,481	7.43
25,942	5.12	61,820	12.80	1,200	.25	—	—	1,822	0.36	1,192	0.23	71,216	14.18	363,883	6.31
8,053	2.00	5,767	5.48	491	.41	—	—	14	0.01	11	0.01	6,134	5.84	89,300	3.12
5,241	2.96	27,061	15.50	1,740	0.96	1	0.00	674	1.48	165	0.08	17,504	9.39	111,960	5.17
609	3.33	3,803	21.15	60	0.34	—	—	40	0.22	5	0.02	2,065	16.40	17,754	8.23
63	0.54	297	2.53	—	—	—	—	—	—	—	—	867	7.38	2,311	1.64
246	1.36	1,698	10.01	150	0.89	—	—	—	—	—	—	912	5.40	7,650	3.75
234	6.33	243	0.60	Included in charge for Coaching and Merchandise.											
140	0.51	307	9.28	Do.	do.	do.	—	—	—	—	—	—	—	806	3.11
768	3.75	1,191	13.68	—	—	—	—	—	—	—	—	440	5.08	4,521	4.29
297,239	5.09	640,323	11.15	31,135	0.53	2,466	.02	8,359	.13	6,443	.11	400,892	6.87	3,251,725	4.50
—	—	—	—	—	—	—	—	—	—	—	—	—	—	50,925	—
														3,302,650	—

\* This includes 15,531l. for collection and delivery of goods.

STATEMENT of the REVENUE in 1870 and 1871.

Railway.	Receipts.								Expenditure.						Per-centage of Working Expenses to Gross Receipts.		Net Receipts.	
	Passengers.		Goods.		Miscellaneous.		Total.		Maintenance.		Working.		Total.		1870.	1871.	1870.	1871.
	1870.	1871.	1870.	1871.	1870.	1871.	1870.	1871.	1870.	1871.	1870.	1871.	1870.	1871.				
	£	£	£	£	£	£	£	£	£	£	£	£	£	£			£	£
<b>GUARANTEED.</b>																		
East Indian: Main Line -	722,510	675,398	1,840,728	1,569,668	68,231	77,862	2,631,469	2,322,928	193,897	190,626	905,562	790,499	1,099,459	981,125	41.78	41.68	1,532,321	1,341,803
"    Jubbulpore Line -	62,846	66,634	55,976	69,749	3,641	9,564	122,463	145,947	19,170	20,503	85,676	86,867	104,846	107,370	85.61	72.23	17,617	38,577
Great Indian Peninsula -	434,276	462,584	1,198,629	1,360,373	27,042	33,022	1,659,947	1,855,979	319,061	194,900	713,569	817,092	1,032,630	1,012,091	62.20	61.89	627,317	843,888
Madras -	187,112	202,851	286,912	325,991	19,189	20,383	493,313	549,125	72,923	88,875	186,770	192,642	259,693	281,517	52.65	51.80	233,520	267,608
Bombay, Baroda and Central India -	189,578	187,531	294,068	293,042	9,432	16,219	493,093	501,792	67,617	77,739	230,909	221,742	298,526	299,491	60.54	69.60	194,572	209,311
Scinde, Punjab and Delhi -	182,589	189,335	232,060	186,726	4,878	12,229	419,527	388,290	53,123	100,567	280,002	283,316	333,125	383,883	79.40	99.71	86,402	4,407
Indus Steam Flotilla -	5,211	4,159	94,987	56,262	780	—	100,928	60,421	338	—	63,202	50,325	63,540	50,825	62.95	82.45	87,388	10,096
Great Southern of India -	39,318	41,332	30,817	28,194	1,827	1,817	70,962	71,343	11,338	9,222	31,308	30,144	42,646	39,866	80.09	55.17	28,316	31,977
Eastern Bengal -	70,553	81,617	105,294	113,284	2,245	6,011	178,092	201,512	19,818	26,432	79,869	85,518	99,187	111,950	55.69	55.55	78,905	89,562
Oude and Rohilkund -	16,329	15,013	6,071	9,749	2,183	852	24,583	25,614	3,395	5,875	14,210	11,879	17,605	17,754	71.61	69.31	6,978	7,860
Carnatic -	3,054	3,282	409	257	55	21	3,518	3,560	742	452	3,225	1,859	3,967	2,311	112.61	64.91	Dr. 477	1,249
																		2,839,338
<b>STATE.</b>																		
Calcutta and South-eastern -	5,050	5,090	1,993	1,884	394	971	7,437	7,945	1,861	1,716	5,969	5,934	7,880	7,650	105.28	96.18	Dr. 393	295
Khangaum -	—	358	—	1,769	—	9	—	2,136	—	651	—	1,250	—	1,901	—	80.89	—	335
Oomrawattee -	—	439	—	1,363	—	8	—	1,750	—	(Capital)	—	805	—	805	—	45.97	—	945
Nulhatce -	5,952	4,926	2,584	2,158	92	704	8,628	7,788	968	762	8,239	3,759	4,207	4,521	48.75	58.50	4,421	3,267
<b>Total</b> -	<b>1,924,373</b>	<b>1,940,549</b>	<b>4,149,973</b>	<b>4,025,309</b>	<b>139,509</b>	<b>180,272</b>	<b>6,213,866</b>	<b>6,146,130</b>	<b>763,751</b>	<b>718,419</b>	<b>2,603,510</b>	<b>2,583,631</b>	<b>3,367,261</b>	<b>3,302,050</b>	<b>54.18</b>	<b>53.505</b>	<b>2,846,604</b>	<b>2,844,080</b>

RECEIPTS and EXPENSES per Train Mile in 1870 and 1871.

Railway.	Gross Receipts.		Expenses.																		Net Receipts.				
			Maintenance.		Locomotive.		Rolling Stock.		Traffic.		Rates and Taxes.		Personal Compensation.		Compensation for Damages.		Legal.		Miscellaneous.				Total.		
	1870.	1871.	1870.	1871.	1870.	1871.	1870.	1871.	1870.	1871.	1870.	1871.	1870.	1871.	1870.	1871.	1870.	1871.	1870.	1871.	1870.	1871.	1870.	1871.	
<b>GUARANTEED.</b>																									
East Indian :—Main Line - - -	8.66	9.66	7.66	9.66	14.98	15.07	4.21	4.52	8.64	10.97	0.13	0.58	0.00	—	0.19	0.10	0.03	0.11	7.63	7.35	8.62	4.03	5.04	5.63	
„ Jubbulpore Line - - -	5.45	6.17	10.24	10.98	28.24	22.79	4.27	4.74	6.01	8.20	—	0.07	—	—	0.07	0.24	—	—	7.16	6.53	4.66	4.46	0.78	1.71	
Great Indian Peninsula - - -	9.14	8.76	21.07	11.04	22.83	22.55	5.19	6.76	12.97	11.90	0.08	0.39	0.23	0.10	0.06	0.03	0.15	0.09	6.14	4.42	5.68	4.77	3.45	3.98	
Madras - - - - -	6.60	6.49	11.72	12.60	15.45	15.02	1.98	2.24	6.93	6.20	1.94	0.75	—	0.01	0.22	0.03	0.16	0.09	3.83	2.96	3.47	3.32	3.12	3.17	
Bombay, Baroda and Central India - - -	10.55	12.46	17.36	23.16	23.05	27.41	6.51	8.05	11.02	17.03	0.31	1.03	0.45	0.15	0.28	0.20	0.23	0.16	17.44	12.01	6.39	6.70	4.16	5.76	
Scinde, Punjab and Delhi - - -	7.90	6.39	12.01	19.86	28.04	23.00	4.04	5.12	16.03	12.30	0.45	0.25	0.00	—	0.19	0.36	0.05	0.23	14.48	14.18	6.27	6.31	1.62	0.08	
Great Southern of India - - -	5.92	5.65	11.36	8.77	15.37	14.02	2.35	2.90	6.35	5.48	0.95	0.41	—	—	0.02	0.07	0.00	0.01	6.08	5.84	3.55	3.12	2.36	2.58	
Eastern Bengal - - - - -	9.77	9.31	12.71	14.66	16.46	16.83	7.19	2.96	15.37	15.50	1.62	0.96	—	0.00	0.03	1.48	0.25	0.08	11.63	9.59	5.44	5.17	4.32	4.14	
Oude and Rohilkund - - - - -	8.24	11.87	13.65	32.68	23.20	24.51	3.90	3.33	15.62	21.15	0.30	0.34	0.30	—	0.16	0.22	—	0.02	13.14	16.49	5.90	3.23	2.33	3.64	
Carnatic - - - - -	2.52	2.52	6.38	3.85	7.29	5.38	0.33	0.54	4.21	2.53	0.56	—	—	—	—	—	1.09	—	13.73	7.28	2.84	1.64	<i>Dr.</i> 0.32	0.88	
<b>STATE.</b>																									
Calcutta and South-eastern - - -	3.80	3.90	11.43	10.11	17.95	17.26	1.64	1.85	12.24	10.01	0.91	0.39	—	—	0.00	—	0.17	—	3.75	5.40	4.01	3.75	0.20	0.15	
Khangaum - - - - -	—	4.82	—	17.64	—	20.97	—	6.35	—	6.60	Included in traffic.												4.28	—	0.54
Oomrawatee - - - - -	—	6.78	—	—	—	21.28	—	6.51	—	9.58													3.11	—	3.67
Nulhatee - - - - -	8.07	7.39	10.87	17.64	15.49	15.43	5.63	3.75	10.50	13.58	—	—	—	—	—	—	—	—	4.74	5.08	3.93	4.29	4.13	3.10	
Average - - - - -	8.49	8.74	12.72	11.11	18.85	19.03	4.39	5.07	10.33	11.15	0.33	0.53	0.09	0.02	0.15	0.13	0.09	0.11	8.03	6.87	4.59	4.50	3.90	4.24	
United Kingdom average - - -	5.13		5.89d.		7.92d.		2.63d.		3.64d.		2.72d.		0.45d.		0.17d.		0.35d.		1.93d.		2.50d.		2.63s.		

MEMORANDUM.—The figures are quoted from returns furnished by the Agents in India.

## GUARANTEED INTEREST.—INDIAN RAILWAYS.

Statement of the Total Amount of Interest advanced to each of the under-mentioned Railway Companies to 31st December 1871.

Railway Company.	Interest advanced to 31st December 1870.		Interest advanced during 1871.						Total.	
			England.		India.		Total.			
	£	s. d.	£	s. d.	£	s. d.	£	s. d.	£	s. d.
East Indian - - -	14,260,843	12 8	1,447,721	6 3	12,779	19 0	1,460,501	5 3	15,721,344	17 11
Great Indian Peninsula	7,826,996	16 3	1,129,653	7 11	20,171	16 0	1,149,825	3 11	8,976,822	0 2
Madras - - - -	4,392,131	1 8	486,933	8 5	—	—	486,933	8 5	4,879,064	10 1
Bombay, Baroda and Central India - -	2,762,811	7 4	387,360	2 11	1,083	12 6	388,443	15 5	3,151,255	2 9
Scinde, Punjab & Delhi	3,100,228	19 5	503,206	6 4	2,902	14 6	506,109	0 10	3,606,338	0 3
Great Southern of India	489,176	13 8	120,739	13 2	—	—	120,739	13 2	609,916	6 10
Eastern Bengal - -	924,065	9 10	139,209	19 3	996	3 9	140,206	3 0	1,064,271	12 10
Oude and Rohilkund -	227,272	13 6	134,337	1 4	3,946	13 11	138,283	15 3	365,556	8 9
Carnatic - - -	12,305	16 0	31,200	14 7	—	—	31,200	14 7	43,506	10 7
<b>Total - - -</b>	<b>£33,995,832</b>	<b>10 4</b>	<b>4,380,362</b>	<b>0 2</b>	<b>41,880</b>	<b>19 8</b>	<b>4,422,242</b>	<b>19 10</b>	<b>38,418,075</b>	<b>10 2</b>

India Office, 8th April 1872.

T. W. KEITH,  
Accountant.

A STATEMENT showing approximately the AMOUNTS advanced on account of GUARANTEED INTEREST to the several under-mentioned Railway Companies to the 30th June 1871, beyond the amount of Net Revenue applied thereto.

Railway Company.	Total Amount advanced to 31st December 1871.*	Aggregate of Net Revenue Balances for the several half-years to 30th June 1871, inclusive.	Net Amount advanced.
	£	£	£
East Indian, Main line - - -	14,476,406	9,983,416	4,487,990
„ Jubbulpore line - - -	1,244,938	46,547	1,198,391
Great Indian Peninsula - - -	8,976,822	4,434,436	4,542,386
Madras - - - - -	4,879,065	2,034,303	2,844,762
Bombay, Baroda and Central India - -	3,151,255	1,142,416	2,008,839
Scinde, Punjab and Delhi - - -	3,606,338	392,190	3,214,148
Great Southern of India - - -	609,916	223,857	386,059
Eastern Bengal - - - - -	1,064,272	602,461	461,811
Oude and Rohilkund - - - - -	365,556	13,335†	378,891
Carnatic - - - - -	43,507	2,609	40,898
<b>Total - - - - -</b>	<b>£38,418,075</b>	<b>18,853,897</b>	<b>19,564,178</b>

\* The Interest for the half-year to 30th June 1871 not being paid until the succeeding half-year.

† Amount advanced on Revenue Account in excess of Receipts.

India Office, 8th April 1872.

T. W. KEITH,  
Accountant.

## TRAFFIC AND WORKING.

39. The gross traffic receipts have, as already shown under the head of Revenue, slightly declined during the past year. The passenger receipts were, however, rather more, corresponding with the increase in the number of passengers, which, in 1871, was 18,940,585, compared with 18,224,859 in 1870. The passengers consisted of, 1st class, 144,215; 2nd, 642,645; intermediate, 523,740; 3rd, 14,113,436; 4th, or coolie, 3,516,549, each class showing a slight excess over the previous year. The proportions per cent. were 93·02 of the 3rd and 4th classes, 6·15 of the 2nd and intermediate, and only ·83 of the first.

Traffic.  
Passenger.

40. The first-class passengers contributed 98,308*l.*, the 2nd 111,400*l.*, the intermediate, which only exists on two lines, 29,837*l.*, and the 3rd and 4th 1,405,225*l.* to the revenue.

41. The merchandise conveyed during the year 1871 amounted to 2,529,479 tons, besides 284,524 tons of coal and 455,568 of other minerals. This is 444,000 tons less than the previous year.

Goods.

42. In regard to working expenses, the East Indian shows in its Main and Jubulpore lines jointly the large saving of 120,000*l.* The Great Indian Peninsula, Indus Flotilla, and Great Southern of India show a reduction of upwards of 20,500*l.*, 13,000*l.*, and 3,300*l.*, respectively. The Madras, the Scinde, Punjab and Delhi, and the Eastern Bengal show an increase of 22,000*l.*, 50,700*l.*, and 13,000*l.*, respectively. The expenses of the Bombay, Baroda and Central India remain about the same.

43. Taking all together, the result is so far satisfactory that the net receipts, notwithstanding the fall in the gross receipts, are only 2,500*l.* less than they were in 1870, being 2,844,080*l.*, as compared with 2,846,604*l.*

44. The average proportion of the total working expenses to receipts is 53·70 per cent., varying between 41·68 on the East Indian Main Line, and 99·71 on the Scinde, Punjab and Delhi, a difference aggravated by the fact that the average amount obtained per head from passengers and per ton of goods is the highest on those lines which work at the largest per-centage on receipts.

45. On this subject I would call particular attention to a note, printed in the Appendix, by Mr. Rendel, the Consulting Engineer at this office for State railways and to the East Indian Railway Company, on the average rates charged, the work done, and cost of doing it on some of the principal Indian lines for the second half of 1871.

46. The number of train miles run was 14,080,064, compared with 14,396,790 of 1870. Of this number 4,789,184 apply to passenger, and 4,921,434 to goods trains. The rest, viz., 4,369,446, were run by mixed and mineral trains. This reduction is principally attributable to the East Indian Railway, in consequence of the opening of the Chord line, which, while it has reduced the length to be traversed by up country traffic, has been the means of diminishing the working expenses.

Train mileage  
results.

47. The train mileage receipts vary from 12·46*s.* on the Bombay, Baroda and Central India to 2·52*s.* on the Carnatic, the expenses ranging between 7·43*s.* on the Bombay, Baroda and Central India, 4·03 on the East Indian, and 1·64 on the Carnatic. The average train mileage receipts and expenses on the 14 open lines were 8·74 and 4·50 respectively. On the railways of the United Kingdom the average mileage receipts for the year 1870 were 5·13*s.*, and the expenses 2·54*s.*

Train mileage  
receipts.

48. The following tables furnish all particulars with respect to the traffic and working of the lines, and show the relative expenses of each in its various departments. It will be seen that it cost the East Indian Railway Company 92 61*l.* per mile open for the maintenance and renewal of their main line, and 9 66*d.* per train mile. The Great Indian Peninsula Company paid for the same description of work 153*l.* per mile and 11*d.* per train mile. This difference is owing partly to the greater wear and tear, from the steep inclines on the latter, and to the large outlay necessary to maintain what was imperfectly constructed in the first instance. Other railways show similar disparities in certain departments, the greater cost of fuel on the Western and Southern lines making a marked increase in the expenses of the locomotive department as compared with the railways in Bengal. On the Great Indian Peninsula and on the Bombay, Baroda and Central Indian Railways, for instance, the locomotive expenses per train mile during the year were 22 79*d.* and 27 41*d.*, while on the East Indian main line, and on the Eastern Bengal they were 15 07*d.* and 16 83*d.* At the same time on the Madras lines, where wood is more generally available at a moderate cost, and where it must be added good management prevails, the train mileage cost of the locomotive department is shown to be for the Madras Railway 15 02*d.*, and for the Great Southern of India 14 02*d.*

SUMMARY of TRAFFIC on the INDIAN RAILWAYS during the Year ended 31st December 1871.

Railway.	Number of Miles of Open Line.			Number of Miles of Sidings.	Passenger Traffic.													Goods Traffic.							
	Double.	Single.	Total.		Number of Carriages of each Class used.				Number of Passengers (exclusive of Holders of Season and Periodical Tickets).					Number of Holders of Season and Periodical Tickets.	Number of Carriages and Palkees.	Number of Horses.	Number of Deers, &c.	Number of Trucks used.	Live Stock.			Minerals.			
					First.	Second.	Third.	Fourth.	First Class.	Second Class.	Intermediate Class.	Third Class.	Fourth or Coolie Class.						Total Number of Passengers.	Number of Cattle.	Number of Sheep.	Number of Pigs, &c.	Number of Tons of Coal and Coke.	Number of Tons of other Minerals.	Total Number of Tons of Minerals.
<b>GUARANTEED.</b>																									
East Indian (Main Line)	415½	886	1,281½	275	—	—	—	—	31,360	91,463	505,763	4,552,347	—	5,310,905	3,888	976	4,775	7,395	—	647	1,001	—	263,995	—	266,252
“ (Jubbulpore Line)	—	223½	223½	41	—	—	—	—	8,190	8,701	3,523	212,900	—	224,515	—	74	575	600	—	82	12	—	46	—	48
Great Indian Peninsula	287	987	1,274	165 5/8	97	171	848	47	28,830	151,209	—	1,352,938	1,050,627	3,403,604	551	571	4,568	6,291	6,063	401	266,808	57	1,590	445,464	447,104
Madras	—	652	652	91	—	—	—	—	10,968	117,726	—	1,916,204	267,464	3,202,353	3	760	3,447	3,070	—	92½	3,206	721	661	—	591
Bombay, Baroda and Central India.	23	327	350	58	—	—	—	—	14,457	110,309	—	2,102,463 Mail 869,541	—	2,605,750	1,516	204	1,584	2,739	2,512	3,732	177,238	369	1,146	6,360	7,530
Scinde, Punjab and Delhi	4½	663	667½	115	90	253	152	—	13,923	36,659	11,307	1,914,763	—	1,075,462	—	281	3,011	5,467	2,234	120	633	13	1,173	—	1,173
Indus Flotilla	—	—	—	—	—	—	—	—	169	163	—	6,802	—	6,124	—	19	51	20	—	—	3	4	—	—	—
Great Southern of India	—	168	168	13 3/7	7	9	84	—	1,716	12,176	—	799,998	—	813,985	3	202	538	546	328	129	109	407	—	—	372
Eastern Bengal	—	156½	156½	—	—	—	—	—	36,819½	60,073½	—	252,411½	1,007,577	1,376,989½	2,256½	147	834	1,208	—	60	124	—	11,491	3,235	14,776
Oude and Rohilkund	—	42	42	5	—	—	—	—	3,973	5,019	—	—	320,391½	327,983½	—	81	510	847	—	4	38	—	167	—	167
Carnatic	—	19	19	2	3	10 4 composite.	16	—	801	6,923	—	84,941	—	91,065	—	18	—	22	12	1	3	3	—	—	—
<b>STATE.</b>																									
Calcutta and South-eastern	—	28	28	9	1 saloon.	6 upper.	26 lower.	—	—	4,073	—	341,860½	—	345,947½	38	—	30	62	24	63	40	—	52	14	71
Khangaum	—	8	8	0 3/7	—	—	—	—	—	—	—	—	—	19,966	—	—	—	—	—	—	—	—	—	—	—
Oomrawattee	—	5	5	7/6	—	—	—	—	—	—	—	—	—	50,973	—	—	—	—	—	—	—	—	—	—	—
Nalbuttee	—	27	27	—	2	1	8	—	550	965½	3,157½	67,563½	—	72,236½	—	41	40	52	20	—	—	—	2,191	410	2,601
Totals	780	4,539	5,063	—	—	—	—	—	141,215	612,645	623,740	14,113,436	3,516,540	15,940,526	8,5554	4,058	20,716	28,381	—	6,172	440,375	1,613	254,524	446,568	760,062

SUMMARY of TRAFFIC on the INDIAN RAILWAYS during the Year ended 31st December 1871—continued.

Railway.	Goods Traffic.							Number of Trains Run.					Average Number of Vehicles in each Train.		Number of Miles travelled by Trains (except in shunting and in conveying Materials for Construction or Revenue Purposes).					
	Minerals.	Number of Tons of Merchandise (exclusive of Live Stock and Minerals).						Passenger Trains, including Special and Troops.	Goods Trains.	Mineral, including Construction Materials Trains for other Railways.	Mixed Trains.	Total Number of Trains.	Passenger.	Goods.	No. of Engines used.	By Passenger Trains, including Special and Troops.	By Goods Trains.	By Mineral, including Construction Materials Trains for other Railways.	By Mixed Trains.	Total Number of Train Miles.
		Number of Tons of Construction Materials for other Railways.	First or Lowest Class.	Second Class.	Third Class.	Fourth Class.	Fifth and Highest Class.													
<b>GUARANTEED.</b>																				
East Indian (Main Line)	267	—	—	—	—	—	760,531	{ 2,909 extra 8,221 }	4,125	1,020	16,686	33,601	—	—	{ 406 (average)	877,908 extra 868,634	1,361,395	118,043	1,673,195	4,759,375
" (Jubbulpore Line)	—	—	—	—	—	—	93,848	{ 730 extra 556 }	889	—	730	2,405	—	—	84	{ 163,083 84,711 extra }	39,311	—	163,596	449,707
Great Indian Peninsula	—	383,738	160,180	14,450	40,214	17,177	615,754	11,841	21,856	7,456	4,005	45,156	13.72	23.34	251	1,367,030	2,272,243	54,880	542,102	4,236,255
Madras	{ 10,626 for Co's. own line.	205,874	52,171	32,081	14,301	10,090	315,716	1,691	8,947	—	6,752	11,600	6	18	119	198,517	366,604	—	1,192,651	1,692,772
Bombay, Baroda and Central India	{ 24 59,941 for Co's. own line.	92,215	58,011	47,108	2,516	1,614	201,764	6,843	4,258	—	2,007	15,720	10	23	55	290,255	976,634	80,575	238,417	894,036
Scinde, Punjab and Delhi	—	137,975	42,738	14,909	21,384	3,117	220,073	5,324	1,844	—	734	7,903	11	31	70	893,363	243,000	—	77,964	1,314,957
Indus Flotilla	—	5,877	7,785	5,913	4,264	57	21,840	—	—	—	—	—	—	—	—	—	—	—	—	—
Great Southern of India	372	75,298	2,546	4,027	1,551	604	91,021	—	—	—	2,035	2,636	6	12	21	—	—	—	262,265	252,265
Eastern Bengal	—	136,028	23,284	2,293	1,213	158	163,546	4,063	1,300	—	644	6,103	—	—	—	215,975	158,170	—	58,568	432,707
Oude and Rohilkund	—	39,303	3,300	3,020	845	448	47,515	—	—	—	899	669	—	—	9	—	—	—	43,143	43,143
Carnatic	—	1,107	212	88	40	92	1,549	—	—	—	1,483	1,483	5	1	4	—	—	—	23,177	23,177
<b>STATE.</b>																				
Calcutta and South-eastern	—	—	399	—	48	21,018	22,265	59	—	—	1,804	1,863	7	26	8	1,473	—	—	30,258	40,736
Khangaum	—	—	—	—	—	—	24,115	—	374	—	730	1,104	—	—	—	2,900	—	—	5,840	8,330
Oomrawattoo	—	—	—	—	—	—	22,689	—	—	224	634	858	—	—	—	1,344	—	—	3,804	5,148
Nulhuttee	—	3,117	1,268	1,128	216	8	5,737	—	11	—	730	741	—	—	4	—	—	—	21,056	21,056
Totals	71,220	1,081,072	357,784	123,599	87,441	55,202	2,615,960	42,227	30,490	9,300	39,318	181,360	—	—	—	4,789,184	4,748,511	262,403	4,279,870	14,080,064

49. It is perhaps a truism to say that every department of a railway requires a careful and vigilant administration; but one of the most important points to keep in view is the work done by each train and the proportion of paying load to the dead weight as well as the cost of carriage. Until the cost of conveying a passenger or a ton per mile is ascertained there is no satisfactory basis for regulating charges for conveyance. High rates are frequently imposed in ignorance of facts which would show that a reasonable profit could be earned per ton or passenger, and a much better aggregate result produced, by lower charges. If it be found that on one line the average load per train of the same size is twice as much as on another, there must be some cause to account for such disparity, and some means of removing it.

50. If, also, great diversity exists in the cost of running a train, or of carrying a ton of goods or a passenger one mile, it is the duty of all those who are concerned in the management of the railways to reconcile the differences or to prevent them. The circumstances of the several lines may vary and results may appear to correspond with such variation; but more is apt to be attributed to this cause than is really due to it, and results will often be found to depend chiefly upon management. Where there is a sound and liberal system of administration; natural obstacles and difficulties diminish and sometimes disappear altogether.

51. The tables prepared by Mr. Rendel, which are given in the Appendix, contain some remarkable instances of the differences above alluded to, and are worthy of careful investigation and study.

Fuel. 52. Every year the question of fuel has been alluded to, and each year its importance increases. The expenditure last year on this item alone was 421,251*l.*, of which 273,024*l.* represents the cost of English fuel, 97,293*l.* the cost of Indian coal, and 50,934*l.* that of wood. The expenses of the locomotive department on those lines which are not yet accessible to native coal show the direct effect which the cost of providing English coal has upon the revenue. Coal has happily been found in various places in Central India, and when access to the beds by railway has been established, the Great Indian Peninsula and the Bombay and Baroda Railways will profit by its use. But, when available, the question of using it with care and economy requires attentive consideration. This part of the subject has recently been treated in an able manner by Mr. Frederick C. Danvers, of this office, in a book which has been printed by order of the Secretary of State in Council. In this treatise much information of a practical kind is given as regards the raising, conveyance, storage, and consumption of coal, as well as the utilization of slack coal, which will be useful to those who are concerned in the supply and use of coal fuel in India.

53. No coal has been discovered in the neighbourhood of the Madras lines, which have therefore hitherto been dependent upon English or Australian coal or native wood. But attention has been drawn to another description of fuel by Colonel A. Romaine Wragge, who strongly advocates the use of condensed peat, which, he says, may be obtained in large quantities from the deposits in the Madras Presidency, especially on the slopes of the Neilgherries. Any suggestion for improving our fuel supply is worthy of careful consideration, and if a new source in the shape of peat bogs exists it would be desirable that a trial should be made to test its practicability and real value. An interesting paper on the subject was read by Colonel Wragge at the Society of Arts, and many gentlemen of experience and local knowledge took part in the discussion which followed. It must be added, however, that the opinions hitherto expressed by the Madras authorities have not encouraged the hope that peat could be economically used as fuel on the railways.

Railway Company.	Cost of Coal.	Cost of Coke.	Cost of Patent Fuel.	Cost of Wood.	Total Cost of Fuel.
	£	£	£	£	£
East Indian	86,898	—	—	5	86,903
Great Indian Peninsula	184,668	—	—	—	184,668
Madras	9,878	15,496	2,529	19,048	46,951
Bombay, Baroda and Central India	42,759	—	—	—	42,759
Scinde, Punjab, and Delhi	10,486	—	650	30,308	41,444
Great Southern of India	3,546	—	2,163	437	6,146
Eastern Bengal	10,395	—	—	67	10,462
Oude and Rohilkund	502	—	—	1,069	1,571
Carnatic	349	—	—	—	349
Total Cost,	349,481	15,496	5,342	50,934	421,253



54. The number of locomotives and vehicles belonging to each railway, and the Locomotive number of the former employed to work the lines during the past year, are given in the following tables.

Railway Company.	Locomotives supplied.			Passenger Carriages.		Trucks and Waggon.		Total Number of Vehicles on 31st December 1871.
	Former Number.	Added in 1871.	Total Number, 31st Dec. 1871.	Former Number.	Added in 1871.	Former Number.	Added in 1871.	
East Indian	535	—*	535	923	—	6,846	—†	7,767
Great Indian Peninsula	324	—	324	1,261	—	6,365	196	7,822
Madras	124	2	126	310	31	3,243	29	3,613
Bombay, Baroda and Central India	72	—	72	183	5	2,874	—17 withdrawn.	3,045
Scinde, Punjab and Delhi	133	—	133	335	5	1,826	62	2,208
Great Southern of India	20	—	20	41	2	319	22	384
Eastern Bengal	43	—	43	146	4	650	77	877
Oude and Rohilkund	10	18	28	34	61	93	294	482
Carnatic	4	—	4	33	—	43	—	76
Total	1,265	20	1,285	3,266	108	22,259	643	26,274

\* Two locomotives were condemned as worn out.

† Two burnt.

#### LOCOMOTIVES EMPLOYED IN THE TRAFFIC.

Railway.	Number.	No. per Mile of Railway open.	No. of Miles run by each.
East Indian : Main Line	406	3·15	11,722
"    Jubbulpore Line	34	6·56	13,227
Great Indian Peninsula	251	5·07	16,877
Madras	119	6·90	14,225
Bombay, Baroda, and Central India	55	6·36	14,643
Scinde, Punjab and Delhi	79	8·44	15,388
Great Southern of India	21	8·00	12,012
Eastern Bengal	43	3·7	10,063
Oude and Rohilkund	9	4·62	4,794
Carnatic	4	4·75	7,044
STATE.			
Calcutta and South-eastern	8	3·5	5,090
Nulhuttee	4	6·75	5,414

55. The following relates to each railway separately :—

#### EAST INDIAN RAILWAY.

Length, 1,504 miles. { Main Line, 1,280 miles.  
                                  Jubbulpore Line, 224 miles.

56. This undertaking having been completed by the opening of the Chord line on the 1st of January 1871, construction operations have been of a comparatively trifling character during the past year. Satisfactory proof was given of the stability of the works by their exemption from harm during the severe floods of last autumn, when considerable damage was inflicted on other lines by the extraordinary rainfall. The capital expenditure amounted to 30,724,268*l.* on the

31st March last, and unless the necessity for doubling the line in certain places, and for providing other means of accommodating a larger traffic should arise, no considerable addition need be made to the capital account.

57. The traffic during the year was less, compared with 1870, both in passengers and goods, but there has been a large reduction in the train mileage, and consequently in the working expenses. The chief falling off in the traffic was in railway materials for other lines. In oil and other seeds there was a considerable diminution, the seed crop having failed in the North-West Provinces, and a large amount of grain having been carried in the previous year in consequence of famine in certain districts. Depressed markets, and increased rates for certain goods carried more than 300 miles, also sent much of the up-country traffic to the river. Boats were in the early part of the year competing with the railway between Mirzapore and Calcutta.

58. The gross receipts last year from the two lines were 2,439,757*l.*, compared with 2,753,932*l.* of the previous year, and the net receipts 1,380,275*l.* and 1,549,938*l.* respectively. The train mileage receipts were 9*66s.*, and the expenses 4*03s.*

#### GREAT INDIAN PENINSULA RAILWAY.

Length, 1,270 miles. { North-east Line and Nagpore Branch, 860 miles.  
South-east Line, from Junction, 410 miles.

59. The whole of this railway is now open, the portion between the Kistna River and Raichore, the junction with the Madras line, having been finished, with the exception of the bridge over that river, in June last. Until this work is completed, the traffic is conveyed by a temporary tramway over the bed of the river in the dry season, and by means of a steamer and boats during the monsoon.

60. Capital expenditure, besides being applied to the bridge in question, is still being incurred upon the repair and restoration of the works which failed. The total amount expended up to the 31st March was 23,249,349*l.* It is estimated that a further sum of about 1,750,000*l.* will be required.

61. The traffic receipts were rather better than the previous year. The gross receipts were 1,855,879*l.*, compared with 1,659,947*l.*, and the net 843,688*l.*, compared with 627,317*l.* The train mileage receipts were 8*76s.*, and the expenses 4*77s.* A considerable interchange of traffic has grown up between the East Indian and the Great Indian Peninsula Railway.

#### MADRAS RAILWAY.

Length, 832 miles. { South-west Line, 407 miles.  
Bangalore Branch, 85 miles.  
North-west Line, 340 miles.

62. The North-west line of this railway was opened throughout in March 1871, completing the whole undertaking, with the exception of the branch to the Neilgherry Hills from Coimbatore. The capital expended amounted, on the 31st March last, to 10,041,792*l.* The completion of the Neilgherry branch and of a few minor works will take 250,000*l.* more.

63. The prevailing stagnation of trade has told upon the traffic, the gross receipts from which, however, have increased from 493,213*l.* in 1870 to 549,219*l.* in 1871. The net receipts were 213,520*l.* and 267,702*l.* respectively. The train mileage receipts and expenses 6*49s.* and 3*22s.* respectively.

#### BOMBAY, BARODA, AND CENTRAL INDIA RAILWAY.

Length, 388 miles.

64. The extension of this line to Wudwan, which was commenced in November 1870, has been completed and opened. Its length is 78 miles, and it has cost about 600,000*l.* The manner in which this work has been carried out furnishes an example of how expeditiously and cheaply a line may be constructed under favourable circumstances, and with skilful and energetic engineer officers to direct operations. A further branch from this line to Patree is being constructed, under a joint arrangement between the Company and the Government. Its length is 22 miles, and its object is to develop the production of salt at Patree, and to reduce the cost of preventive establishments. The works have been contracted for at rates which will bring the cost to about 4,000*l.* a mile. It is to be made on the broad gauge, and to be laid with rails 48 lbs. to the yard.

Damage was done to some of the works on the line between Surat and Ahmedabad by the floods of August last. The Mhye and Nerbudda bridges suffered slightly, but the bridge over the Watruck River was carried away, the whole of the superstructure being closed up with drift, and offering a solid dam to the stream, which overpowered it. The flood on this occasion was higher than the greatest recorded height which had ever been attained.

65. The capital expenditure on the 31st March last on the whole undertaking had reached 7,665,577*l*.

66. The traffic has improved during the year, and an increase in the amount of cotton conveyed is traceable to the Veerumgaum extension. The gross receipts were 501,729*l*., compared with 493,098*l*. of the previous year, and the net receipts 202,311*l*., compared with 194,572*l*. The train mile receipts were 12*l*.4*s*., and the expenses 7*l*.4*s*.. This large proportion of working charges was in great measure due to an expenditure out of revenue of upwards of 15,000*l*. upon the bridges injured by the severe floods just referred to.

#### SCINDE, PUNJAB, AND DELHI RAILWAY.

Length, 663 miles { Scinde, 110.  
Punjab and Delhi, 553.

Distance worked by steamers on River Indus, 500 miles.

67. The section of this line between Umballa and Sirhind suffered severely from the floods in June and July. Great damage was done to the bridges over the Guggar, Sirhind, and Beas Rivers. One pier of the last-mentioned yielded to the force of the water, and the girders were carried away and lost. It was here that a train so narrowly escaped being engulfed in the river, as described under the head of accidents in page 8 of this Report. The traffic was interrupted, but, through the strenuous exertions of the staff, was resumed within a few days.

68. The revenue has slightly improved, but the net receipts are still small. Great reductions have been made in the establishments. The true capabilities of the line will not be realised until railway communication to Kurrachee from the Punjab by the Valley of the Indus has been established.

#### EASTERN BENGAL RAILWAY.

Length, 156½ miles.

69. This line suffered great injury from the floods, both in respect to the works and the traffic. Viaducts, culverts, and embankments were washed away; and, besides an interruption in the ordinary traffic, a large traffic in jute, which at the time of the inundations was at its height, was suddenly lost. Vigorous efforts were made by the agent and staff to arrest the destruction, and, when that ceased, to repair the damages. The passenger traffic was resumed in a few days, but the line was not fit for the goods traffic for about eight weeks. There was, consequently, a decrease in the revenue receipts, instead of the increase, which the large traffic in the early part of the year promised. The works of restoration, which include considerable modifications in the structure of the embankments and the additional provision of flood openings, are in a fair way towards completion.

70. The extension of this railway to Goalundo may be regarded as a success. A large river traffic is intercepted there, and much additional up-country produce is brought upon the line. If it had not been for the breakdown occasioned by the floods, the earnings would probably have shown a considerable increase over the previous year's.

71. As it was, the gross receipts amounted to 201,343*l*., compared with 178,092*l*. of the previous year, and the net receipts 89,562*l*., compared with 78,905*l*. The receipts per train mile were 9*l*.3*s*., and the expenses 5*l*.17*s*.

#### GREAT SOUTHERN OF INDIA RAILWAY.

Length, 384 miles. Open 168 miles.

72. A commencement has at length been made with the extension of this line to Tuticorin. It has been decided to take it from Trichinopoly to Muniachee, and thence by branches to Tinnevely and Tuticorin, a length of 216 miles. The plans

have been made upon the metre gauge, and the previous estimates have been reduced by about 650*l.* a mile, the present being under 4,000*l.* a mile.

73. The gross receipts from the open line were 71,343*l.*, compared with 70,962*l.* of 1870. The net receipts were 39,866*l.* and 42,646*l.* respectively.

74. The earnings per train mile were 5*s.* 9*d.*, and the cost 3*s.* 2*d.*

75. The proposed amalgamation of this railway with the Carnatic is under consideration.

### OUDE AND ROHILKUND RAILWAY.

Length, 733. Open, 120.

76. No addition was made to this railway during the year 1871, but 78 miles have been opened since, including the sections from Lucknow towards Fyzabad, and from Lucknow towards Moradabad, and from Allyghur to Rajghat, towards Chumdosee. The works generally are progressing quickly towards completion. Bridges have yet to be finished over the Ganges, Saic, and Goomti. That at Cawnpore has been delayed by the necessity for sinking deeper foundations and larger wells than were at first proposed. The wells have now been sunk 60 feet below the low-water level. In the provinces of Oude and Benares the floods of last season proved the necessity for greater water way, which is accordingly being provided. In the opinion of the agent, General Beadle, the cost of the line will not exceed 10,000*l.* per mile, including the bridges, several of which are formidable works.

77. The expenditure up to the end of March last, was 3,400,000*l.* The gross earnings upon the 42 miles open was, last year, 25,614*l.*, and the net 17,754*l.*

### CARNATIC RAILWAY.

Length, 100 miles. Open, 19 miles, on a 3' 6 $\frac{3}{4}$ " gauge.

78. The operations in connexion with this line have during the year been confined to working the short section open for traffic and to surveying and preparing the plans for its extension south to join the Great Southern. No decision has yet been passed upon the route, but it has been determined to construct it on the narrow gauge, and it is in contemplation to form with the line south of Trichinopoly, now in the hands of the Great Southern Company, one continuous metre gauge railway from Madras to Tuticorin. It has been proposed, indeed, as stated at page 6, to amalgamate the two undertakings, and to place them entirely under one joint management. The subject is now under consideration.

79. The gross receipts from the 19 miles open were 3,560*l.*, and the net 1,249*l.*

80. The following railways are being constructed by the Government without the intervention of companies :—

### STATE RAILWAYS.

#### PUNJAB NORTHERN RAILWAY.

Length from Lahore to Peshawur, 270 miles.

81. The works on this line are at present confined to the section between Lahore and Jhelum, a length of 173 miles. Having been originally designed for the 5' 6" gauge, fresh plans and drawings had to be prepared when it was determined to adopt the new gauge of 3' 3 $\frac{3}{4}$ ". This led to the suspension of operations for a time, but during the past year there has been much activity in pushing on the works, and considerable progress has been made. It is estimated approximately that the line will be constructed for 10,000*l.* a mile. The expenditure had amounted on the 31st December last to 660,868*l.* The bridges over the Ravee, Chenab, and Jhelum rivers are amongst the most formidable works yet undertaken in India, and will not be finished so soon as the rest of the line, but the sections between the rivers may possibly be opened this year.

#### NULHATEE RAILWAY.

Length, 27 $\frac{1}{2}$  miles.

82. This line has become one of what are denominated "State" lines, Government having purchased it for 30,000*l.* from the Oude and Rohilkund Company. It was constructed by this company on a 4' 0" gauge, when, as the "Indian Branch"

Railway Company, they commenced establishing a system of light branch railways in connexion with the existing main lines.

83. Finding themselves unable to raise money without a guarantee they were obliged to limit the scheme to this short line and the branch from Cawnpore to Lucknow. When a contract for their present undertaking was made under a guarantee the Nullahtee line remained in their possession until sold as above mentioned. The line has been worked satisfactorily, and last year yielded a revenue of 4,421*l*.

#### RAJPOOTANA RAILWAY.

Length, 370 miles.

84. One division of this line commences at Agra, and proceeds by Bhurtpore and Jeypore to four miles east of Sambhur Lake, from whence salt will be transported by a branch line into British territory. Another division starts from Delhi and joins that from Agra at Khera, 85 miles from Agra. A contract has been made for the execution of the former section, including a bridge, suitable for ordinary as well as railway traffic, over the Jumna, at Agra, and it is estimated that the whole of these lines will be completed for 5,000*l*. per mile, including rolling stock.

#### INDUS VALLEY RAILWAY.

Length, 480 miles.

85. Starting from Moultan, it has been decided to take this line by Shoojabad (50 miles) and Bhawulpore (87 miles) on to Rohree (133 miles), the Sutlej being crossed by a bridge at Bhawulpore. The cost of the section to Bhawulpore, including the bridge, is estimated at 900,000*l*., or 6,500*l*. per mile. The cost of that from Bhawulpore to Rohree is estimated at 800,000*l*., or 6,000*l*. a mile. The southern portion of the line from Rohree to Kotree, which is 189 miles in length, is to proceed by the right bank of the Indus, which it crosses at Rohree. This section is estimated to cost 1,152,000*l*., or about 5,180*l*. per mile. The examination of the country traversed by the northern division exposed the difficulties that will be caused by inundations, and has proved the necessity for the most careful consideration before deciding upon the designs. It has wisely been determined to make no attempt to dam the floods, but to provide the necessary outlets through the embankments. In 68 miles in the Rohree district provision will, it is calculated, have to be made for 70,000 square feet of bridge opening. As a precautionary measure the embankments, when thrown up, are to be exposed to the influence of the inundations for one season, before the culverts or bridge work is commenced. The earthworks in the Shoojabad and Bhawulpore divisions are nearly completed. The line is to be made upon the metre gauge.

#### INDORE or HOLKAR STATE RAILWAY.

Length, 86 miles.

86. This line starts from Khundwah, a station on the Great Indian Peninsula Railway 352 miles from Bombay, crosses the Nerbudda River two miles south of Barwaie, ascends the Vindhya range through the Choral Valley, and passes through Mhow to Indore. Its length will be about 86 miles. The works have been commenced under a contract, and are being pushed on vigorously. It is estimated that the line will cost about 900,000*l*. Maharajah Holkar has engaged to lend the British Government 1,000,000*l*., at 4½ per cent. per annum, to carry out this line, it being understood that he will participate in half surplus profits over the 4½ per cent., if any, in proportion to the extent of his loan.

#### CARWAR AND HOOBLEE RAILWAY.

Length, 144 miles, to Gudduck.

87. Repeated surveys have been made of this line, and the difficulties, while still serious, are less than they were at first expected to be, but the question of its construction is still under consideration. The railway reaches the top of the Ghâts, at a level of 2,200 feet above the sea, by works extending over 24 miles, in the course of which one continuous incline, four miles in length, of 1 foot in 40 feet occurs. The estimated cost is 900,000*l*. The Bombay Government

considers that there is a fair prospect of a return of  $8\frac{1}{2}$  per cent. on this capital, if such a tariff is established as will give the best possible revenue, while it secures the whole of the existing export trade, the rates being fixed so as to be more favourable than cart rates but higher than ordinary railway rates.

#### HYDERABAD STATE RAILWAY.

88. Besides the line from Goolburga to Hyderabad, which is being constructed at the exclusive expense of the Nizam's Government on the 5 foot 6 inch gauge, and laid with rails formerly supplied for the extension of the Great Southern of India Railway, a further system of railways, in connexion with the Hyderabad territory, has been proposed by Mr. Johnson, C.E., Secretary to the Hyderabad Government. This system would include a narrow gauge line from Hyderabad, Secunderabad, and Warrungal in a north-easterly direction to the Chanda coal fields, to join the branch from the Great Indian Peninsula Railway below described; also a line from Warrungal in a south-easterly direction towards the coast at Masulapitam.

#### THE OOMRAWUTTEE AND KHANGAUM RAILWAYS.

Length,  $5\frac{1}{2}$  miles.

Length,  $7\frac{1}{2}$  miles.

89. These are branches from the Great Indian Peninsula Railway, constructed out of the revenues of Berar, which province belongs to the Nizam, but is administered by the British Government in the Nizam's behalf, and are worked by the company possessing that line.

90. The receipts on the Khangaum last year were Rs. 4,117, and the charges Rs. 4,497.

91. The receipts on the Oomrawuttee were Rs. 7,910, and the charges Rs. 4,102.

#### THE WURDA VALLEY COAL RAILWAY.

92. The proposed line from Wurda, on the Nagpore branch of the Great Indian Peninsula Railway, to the Chandah coal fields has been sanctioned for a distance of 15 miles, to a place five miles short of Hingunghat, the route beyond depending upon the site of the best coal beds, and whether the line may not be made to fulfil the further object of accommodating a cotton mart. This will be a British line.

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#### SUMMARY.

93. It now only remains for me to give a brief summary of what has been stated above.

94. Railways to the extent of  $5,204\frac{1}{2}$  miles are now open in India, of which 250 miles were completed during the year 1871 and 128 since. A further length of 2,438 miles is in course of construction, of which 1,503 are being executed under the direct orders of Government, without the intervention of companies. A fair start has thus been made with what, in contradistinction to the railways undertaken by the guaranteed companies, are termed the State lines, and considerable progress has been made with some of them during the past year.

95. The capital outlay on all the railways had, at the close of the official year 1871-72, reached 91,963,510*l.*, of which 1,953,888*l.* had been applied to State lines, and 2,704,451*l.* was expended last year. This is exclusive of the cost of land and Government supervision, interest, and the amount contributed by Government through the operation of the rate of exchange under the contracts. The capital held by proprietors, of whom there are about 61,000, consists of 80,972,386*l.* capital stock, 1,954,100*l.* of debentures convertible into shares, 5,473,100*l.* of inconvertible debentures terminable at certain periods, and 4,671,808*l.* of irredeemable debenture stock.

96. The net revenue last year was 2,844,000*l.* Assuming the amount which has been expended upon the lines carrying traffic to be 85,000,000*l.*, they yielded a return at the rate of about  $3\frac{1}{2}$  per cent. per annum. This left a deficiency below the 5 per cent. guaranteed interest paid by Government upon all the capital raised, including that for lines not yet finished, of about 1,500,000*l.* It must be borne in mind that the past year was a bad one for trade and consequently for traffic, and that a considerable portion of the present system has been open only for a few years and cannot be regarded as duly developed. It should also be noticed that while the traffic, taken as a whole, has been nearly stagnant

when compared with the previous year, most of the lines show an increase, and only two a falling off; and that when the average earnings of one five years are compared with another a steady progress is found to have taken place. The average mileage receipts, for instance, on the five principal lines have increased from 415% for the five years ending 1866 to 651% for the last five years. At the same time it must be confessed that expectations have been disappointed, and that every effort should be made to increase the traffic and to reduce the expenditure. The success which has already attended attempts in the direction of retrenchment may be judged by the fact that last year, on the East Indian Railway alone, the expenses were 145,000% less than in the previous year. Last year the gross receipts amounted to 6,146,130%, and the working and maintenance expenses to 3,302,050%, or at the rate of 53.70 per cent. The amount received from passengers was 1,940,549%, from goods 4,025,309%, and the remainder from miscellaneous sources. Compared with the previous year the net revenue was 2,500% less.

97. The number of passengers carried was 18,940,585, of whom 144,215 were first-class, 642,645 second, 523,740 intermediate, 14,113,436 third, and 3,516,549 fourth. Thus 93.02 per cent. consisted of the two lowest, 6.15 of the second and intermediate, and .83 of the first class. The third and fourth classes contributed 1,405,225% of the 1,941,978% received from passengers.

98. The merchandise conveyed amounted to 2,529,479 tons, besides 284,524 tons of coal and 455,568 of other minerals. This was 444,000 tons less than the previous year. The number of train miles run was 14,080,064. The average receipt per train mile was 8.74s., and the average expense 4.50s. The falling off may be accounted for in a great measure by the diminution in the quantity of railway materials conveyed, and by the absence of the necessity, which existed in the previous year, of carrying a large amount of grain to districts where scarcity prevailed.

99. Unprecedented rains occurred in different parts of the country during the year, producing disastrous effects upon some of the railways. The Punjab and Delhi, the Eastern Bengal, and the Bombay, Baroda, and Central Indian lines suffered the most damage. The cost of the necessary repairs and alterations on these lines will amount to at least 300,000%.

100. Materials have been sent out from this country for the railways during the year to the amount of 168,049 tons, of the value of 707,765%, and at a cost for freight of 223,617%. Since the commencement of operations 4,361,297 tons of railway materials, the cost of which was 28,880,893%, have been sent to India.

101. The return of accidents for the year bears a favorable comparison with former years. While in 1869 31 passengers were killed and 63 injured from causes beyond their control, and in 1870 four were killed and 92 injured, last year there was only one killed and eight injured; and the one fatal case was not caused by any accident to a train but by a fall on a platform through insufficient lighting.

102. A great deal has been said lately about the burthen thrown upon the Indian revenues by the railways, in consequence of their failure to earn the amount paid by Government for the guaranteed interest upon the capital. This result is no doubt greatly to be lamented, and is contrary to the expectations of those who advocated and sanctioned the existing system. But taking a broad view of the subject, these undertakings may claim, as a set-off against their shortcomings, credit for many direct and indirect benefits which they have produced. To say nothing of the moral and social improvements which, as civilising agents, they have conferred upon the country, there can be no doubt that railways have added to its security, have greatly advanced the material prosperity of the people, and have been the means of increasing the revenue and of saving much expenditure, both on account of the army and post office. They are still in their infancy, and their direct contributions to the revenue are capable of expansion. Experience has taught us lessons, and we have paid for them, but I venture to think that there is more ground of hope for the future than regret for the past. And as regards the present, difficulties and uncertainty should furnish a strong incentive to skilful administration and increased exertion.

I have the honour to be,

My Lord Duke,

Your Grace's very obedient humble servant,

JULAND DANVERS.