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R E P O R T

FROM THE

SELECT COMMITTEE

ON

EAST INDIA (RAILWAYS);

TOGETHER WITH THE

PROCEEDINGS OF THE COMMITTEE,

MINUTES OF EVIDENCE,

AND

APPENDIX.

Ordered, by The House of Commons, to be Printed,
13 July 1858.

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Martis, 20^o die Aprilis, 1858.

Ordered, THAT a Select Committee be appointed to inquire into the causes that have led to the delay that has occurred in the Construction of Railways in India.

Martis, 27^o die Aprilis, 1858.

Committee nominated of—

Mr. Liddell.
Mr. Crawford.
Mr. Campbell.
Mr. Stephenson.
Mr. Cumming Bruce.
Mr. George Glyn.
Mr. Alexander Hugh Baring.
Mr. Cheetham.

Mr. Kirkman Hodgson.
Mr. Henry Danby Seymour.
Mr. Thomas George Baring.
Sir James Elphinstone.
Colonel Sykes.
Mr. Marjoribanks.
Mr. Henry Austin Bruce.

Ordered, THAT the Committee have power to send for Persons, Papers and Records.

Ordered, THAT Five be the Quorum of the Committee.

Martis, 13^o die Julii, 1858.

Ordered, THAT the Committee have power to report their Observations, together with the Minutes of Evidence taken before them, to The House.

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R E P O R T.

THE SELECT COMMITTEE appointed to inquire into the Causes that have led to the Delay that has occurred in the Construction of RAILWAYS in India;—HAVE considered the Matters to them referred, and agreed to the following REPORT :

YOUR COMMITTEE have taken evidence from many of the best authorities on the subject, viz., gentlemen connected with the Indian Government at home, officers of high standing and long experience of public works in India, as well as managing directors, secretaries, and engineers belonging to the different railway companies.

There are seven distinct companies at present engaged in constructing lines of railway in India, under the guarantee of the Indian Government, viz. :

1. The East Indian Railway Company engaged to construct a line from Calcutta *via* Rajmahal and Allahabad, to Delhi or Meerut, with a branch from Mirzapoor, to meet the East Indian Peninsula line at Jubbulpoor.

2. The Great Indian Peninsula Company, from Bombay in a north-easterly direction to Jubbulpoor, and in a south-easterly direction, *via* Poonah and Sholapore, to meet the Madras line in the neighbourhood of Bellary.

3. The Madras Railway Company, from Madras *via* Cuddapah to Bellary, to join the line from Bombay, and in a westerly direction to the Malabar coast, at or near Beypoor.

4. The Bombay and Baroda Company, from Bombay *via* Surat, to Baroda and Ahmedabad.

5. The Scind and Punjaub Railway Company, from Kurrachee to Kotree on the Indus, and from Moultan to Lahore in the Punjaub, with a connexion by steam navigation between Kotree and Moultan.

6. The Eastern Bengal Company, from Calcutta to Dacca, with a branch to Jessore.

7. The Great Southern of India Company from Salem *via* Trichinopoly to Negapatam, and Southward to Madura and Tinnevely.

(The first Indian Railway project was broached in the latter end of 1844, by Mr. MacDonald Stephenson, who submitted to the India House a scheme for a line from Calcutta to the north-west of India, based upon minute information and statistics collected by himself on the spot; and, almost simultaneously, Mr. Chapman submitted a scheme for a railway from Bombay towards the interior; a Company was also formed in 1845 for the construction of a railway from Madras to Arcot.)

The delays attendant upon railway construction in India may be classified under four distinct heads :

1. Delays arising from Government supervision at Home and in India.

2. Delays incidental to the execution of extensive and complicated public works under novel circumstances in a distant country.

3. Delays produced by political causes, such as insurrection and mutiny.

4. Delays arising from the natural difficulties which the face of the country presents.

Your Committee will proceed to notice each class of delay in the order thus given, but it is necessary, before doing so, to describe shortly the system of

railway construction pursued in India. (Indian railways are constructed by companies formed in this country, and incorporated by Acts of Parliament. In all their proceedings, operations, and expenditure they are subject to the control of the Government, who engage to grant for 99 years all the land required, free of expense, to the companies, and to guarantee interest, generally at the rate of five per cent. per annum, for the same term, upon the capital employed.

(The following conditions are attached to the guarantee and the granting of the land :)

The Railway Company have the power of surrendering the works at any time after the line is opened, upon giving six months' notice to the Government, and the East India Company undertake to repay the whole amount that has been expended by the Railway Company.

The East India Company have the power, within six months after the expiration of 25 or 50 years, of purchasing the railway at the mean market value, in London, of the shares during the three previous years. In case the Railway Company fail to complete the line or to work it satisfactorily, the Government is entitled to take possession, and repay within six months the sums expended.

The Railway Company to repay the guaranteed interests from the profits of the railway."

The supervision of the Government over the proceedings of the railway companies is of two distinct kinds, viz., that exercised in the person of the official Director over the Railway Boards in London, and that exercised by consulting engineers in India, to whom is committed the charge of superintending on behalf of Government all railway operations in that country.

Supervision at Home.—The duties of Official Director at the various Railway Boards have hitherto been performed by the same person, and he has, under the terms of the contract, a power of veto over all the proceedings of the Board, but it does not appear that this power has ever been exercised; indeed, until a comparatively recent period, his functions appear to have been confined to giving information to the Court of Directors upon points on which they might require it, and to co-operating in the promotion of the various undertakings; but authority has been lately given to him to sanction all indents (or requisitions) for stores and materials approved by the local Governments in India, and the acceptance of tenders for the supply of the same.

Previous to this important extension of the powers of the Official Director, every indent was submitted for the direct sanction of the Home authorities, by a process thus described by Sir James Melvill, the Official director: "The indent came from the railway authorities in India to the Railway Board in this country; the Railway Board then came to their decision upon it; and if they proposed to comply with it, they sent a resolution to that effect to the Court of Directors; the Court of Directors came to an opinion upon it, and their opinion was submitted for the concurrence of the Board of Control, and when the indent was returned with the opinion of both authorities, the decision was communicated to the Railway Board." Such a system necessarily entailed a very considerable amount of delay and correspondence, and the best results may be anticipated from the judicious changes lately effected in this respect.

The process of forwarding instructions from the Railway Boards to their agents in India also seems to Your Committee to require improvement. Sir James Melvill thus describes it: "The Railway Board prepares a draft of the instructions to its agent in India, and every such draft, without exception, is submitted to the Court of Directors; the Court, expressing an opinion upon it, submit it to the Board of Control, and when both authorities are agreed, the letter is returned to the Railway Board, with an intimation that the Court of Directors offers no objection to it." Considerable delays have not unfrequently resulted from this cause; and though it is, no doubt, important that instructions to their agents in India should go out backed by the whole weight and authority of the approval of the Home Government, Your Committee would confidently expect that the contemplated consolidation of the departments of the India House, and the Board of Control will materially expedite the future transaction

transaction of railway business. Before leaving this branch of the subject, Your Committee would remark that the harmony which has prevailed at the Railway Boards seems to be in no small degree attributable to the judgment and discretion exercised on all occasions by the Official Director, and to the respect shown to his opinion.

Supervision in India.—Under the terms of the contract the Government have an almost unlimited power of control over the acts and operations of the railway companies, the inspection and supervision of the works being in every case delegated to a military engineer, whose duty, as described by Colonel Baker, is, in the first instance, to examine the line of country over which it is proposed to construct a railway, to examine all the designs and estimates, to audit all expenditure, to report upon completed works, and to maintain a real check over all the acts of the railway officers.

Your Committee hesitate to express any opinion as to the policy of employing military men in the inspection of railway works and the control of civil engineers, but it is quite clear that to ensure cordial co-operation no small amount of forbearance and discretion must be exercised on both sides. Too minute an interference in details, while unnecessary for practical economy, involves constant controversy, lengthy correspondence, and consequent delay, besides engendering irritation and discord where friendly and united action ought to subsist. Your Committee are decidedly of opinion that to ensure the speedy and efficient completion of railways in India the utmost freedom of action ought to be allowed to the efforts of the different companies, consistent with the control necessary to protect from undue expenditure the Indian Exchequer, upon which the payment of the guaranteed interest must for some time remain a heavy charge.

Complaints of too minute an interference on the part of the Government consulting engineer have been strongly urged from the Madras Presidency, for the further details of which Your Committee would refer to the evidence, which complaints appear to be in part well founded; on the other hand, Your Committee cannot think that the proceedings of the chief engineer of the railway company have been wholly free from blame. Directions have been sent out from the Home authorities to the Madras Government to relax the extent of supervision in force there; but it does not appear in evidence that those instructions have as yet taken effect. Your Committee, however, have had no opportunity of hearing an explanation from the Madras Government on the subject.

Other complaints, but in a minor degree, have arisen, both in Bengal and Bombay, though in the latter Presidency the relations between the Government and the Great Indian Peninsula Railway officials appear to have been, for the most part, of a harmonious and satisfactory character.

The delays incidental to the construction of railways in so distant a country as India are of various kinds and degrees of magnitude. The cost and means of obtaining freight must always be regulated, and, in the opinion of many competent authorities, actually limited by the home demand for Indian produce; hence the transport across the sea of the vast mass of dead weight necessary for the construction of thousands of miles of iron way, besides locomotives, iron work for bridges, and other materials, forms a cause of delay second only in importance to the difficulties which impede the conveyance of these materials up the country, where the means of internal communication are in many places very imperfect, where river navigation during the dry season is liable to constant interruption, where boats are scarce, and native boatmen untrustworthy. To these difficulties may be added the want severely felt in many districts, and especially in Bengal, of fuel for lime and brick burning, and of timber suitable for sleepers, large quantities of which are now being supplied from England; the effects of Indian climate upon European constitutions; the frequent failures of contractors, unaccustomed or incompetent to undertake such extensive works; and lastly, the circuitous and lengthy correspondence carried on between the Railway Boards and their agents, on the one hand, and with the various Government departments, both here and in India, on the other; all these appear to Your Committee to form

sources of delay more or less serious, and must be classed among the main impediments to the rapid progress of railway enterprise in India.

Delays from Political Causes have been of frequent occurrence. In Bengal the Santhal rebellion in 1855, is described as having thrown back the works in the Rajmahal district for fully 12 months, and the evil influences resulting from it are not even yet at an end. The Mutiny subsequently suspended railway operations in Upper Bengal and the North-West Provinces from May to December of last year, and its disastrous consequences must be felt for some time to come, although the actual damage done to the works appears to be less than might have been anticipated. Railway operations in the other Presidencies have hitherto been happily free from the disturbing influences of insurrection and war.

Lastly come the delays arising from the natural features of the country, such as the bridging of large rivers, and the surmounting of the ghauts. Mr. Noad in his evidence states, that the whole question of the completion of the East Indian Railway resolves itself into the rapidity with which the enormous number of its heavy bridges and flood arches can be constructed. Along the Ganges Valley line, between Burdwan and the river Soane, a distance of about 400 miles, there are described to be no less than 47,000,000 cubic feet of brickwork, including the substructure of the gigantic bridge over the Soane.

On the Bombay and Baroda line, between Surat and Ahmedabad, three large and rapid rivers, the Taptee, Nerbudda and Mhye, present considerable engineering difficulties, and require costly and extensive bridges; on that important portion of the line between Surat and Bombay, no fewer than 18 rivers have to be crossed, one of which, known as the Bassein Strait, is described to be $1\frac{1}{4}$ mile in width. On portions of the Madras line also, the bridging works are described to be very heavy; but even the great works thus enumerated appear insignificant in comparison to the stupendous task undertaken by the Great Indian Peninsula Company of carrying their railway across the two mountain passes known as the Thull Ghaut and the Bhore Ghaut, the former on the north-easterly, the latter on the south-easterly portion of this line. On the Thull Ghaut the ascent is 9 miles, the total rise in that distance 972 feet, the steepest gradient, 1 in 37 for a distance of 11 miles 44 chains, and the works include 1,962 lineal yards of tunnelling, and 614 yards of viaduct, at an estimated cost of 49,988 £. per mile. On the Bhore Ghaut the steepest gradient is 1 in 67 for a mile and 38 chains, the total distance is 15 miles 68 chains, the total rise in that distance 1,831 feet, the tunnelling is 2,535 yards, and the viaduct 888 yards, the estimated cost being 48,188 £. per mile.

With the exception of the ghauts and rivers, however, the general face of the country seems favourable for railway construction, presenting for the most part easy gradients; and the very low price of labour keeps down the cost to an average for the whole country of about 10,000 £. per mile, while many of the less expensive lines are being constructed at a cost of 6,000 £. per mile.

Upon an impartial review of the early history of Indian railways, there can be no doubt that much valuable time was lost in the preliminary negotiations for the introduction of railway enterprise into India, and also on account of the commercial crisis having arisen while these negotiations were still incomplete; the novelty and magnitude of the undertaking, the remoteness of the scene of operations, and the natural difficulties of climate and country might well have raised doubts and hesitation in the minds of the Indian authorities at home; but Your Committee are decidedly of opinion that had the matter been taken up at first with the earnestness that its importance, both political and commercial deserved, in accordance with the proposal of the Court of Directors in 1846 to the Board of Control, and had the proposals of the originators been met with the same liberality which has since been displayed in the agreements with the different companies, our Indian possessions might ere this have been provided with many hundred miles of rapid internal communication, the value of which would have been felt in the facilities afforded for military concentration, and the more speedy development of their resources. But Your Committee have no means of judging of the considerations by which the Government were actuated in these proceedings. With reference to the actual prosecution of the works,
Your

Your Committee cannot in fairness omit to observe, that, though some cases have been cited in which the Government superintendence has been productive of vexation and annoyance to the railway officials, and has tended to impede that harmonious action between the Government and the companies which is essential for the rapid completion of these great works, no very material delay in the construction of the various lines appears to have resulted therefrom. From the evidence adduced, Your Committee are led to believe that the progress of railroads under construction in India will bear favourable comparison with that of English lines. Willing testimony has been given by many of the railway authorities to the value of Government control to the interests of the companies themselves, when rationally and temperately exercised.

Your Committee have not thought it necessary to enter into any comparison of the respective merits of the contract and departmental systems of construction, the adoption of which must always materially depend on the circumstances of the district; and it appears highly necessary that both systems should have a fair trial before giving any decided preference to either.

In conclusion, Your Committee are of opinion, first, that the Government has acted wisely in committing to private enterprise the execution of these great public works; secondly, that a guaranteed interest on the requisite capital was indispensable to induce the public to invest their money in undertakings of this magnitude and novelty; and thirdly, that, in order to protect the Indian revenue from undue expenditure, Government control over the railway operations is requisite, and even valuable to the interests of the shareholders themselves. At the same time, Your Committee would observe that, under a system complicated in its character, and necessarily somewhat cumbrous in its machinery, a system, moreover, the greatest defect of which is the facility it affords for the evasion of responsibility, a clear and distinct definition of the duties, responsibilities, and extent of jurisdiction of all heads of departments, and those under them, is essentially requisite for its smooth and successful working; always assuming that due care be taken to entrust discretionary power only to men who are to be relied on as competent to distinguish an effective general control from too minute an interference in details. By a judicious adherence to the spirit rather than the letter of the contract, Your Committee feel assured that arrangements may be simplified, united action for one common object secured, and railway enterprise in India may before long assume proportions commensurate with the vast commercial agricultural and mineral resources of that country.

13 July 1858.

PROCEEDINGS OF THE COMMITTEE.

Lunæ, 3^o die Maii, 1858.

MEMBERS PRESENT:

Mr. Liddell.
Mr. Cumming Bruce.
Mr. Crawford.
Mr. A. H. Baring.
Mr. Geo. Glyn.
Mr. Austin Bruce.

Mr. K. Hodgson.
Mr. Stephenson.
Mr. Cheetham.
Mr. T. G. Baring.
Mr. Campbell.

Mr. *Liddell* was called to the chair.

Committee deliberated.

Mr. *Juland Danvers* examined.

[Adjourned till Thursday, at Twelve o'clock]

Jovis, 6^o die Maii, 1858.

MEMBERS PRESENT:

Mr. LIDDELL in the Chair.

Mr. A. H. Baring.
Mr. T. G. Baring.
Mr. C. Bruce.
Mr. H. A. Bruce.
Mr. Campbell.
Mr. Cheetham.
Mr. Crawford.

Mr. G. Glyn.
Mr. K. Hodgson.
Mr. Stephenson.
Sir James Elphinstone.
Mr. H. D. Seymour.
Colonel Sykes.

Mr. *David I. Noad* examined.

[Adjourned to Monday, at Twelve o'clock]

Lunæ, 10^o die Maii, 1858.

MEMBERS PRESENT:

Mr. LIDDELL in the Chair.

Mr. A. H. Baring.
Mr. C. Bruce.
Mr. Cheetham.
Mr. Stephenson.

Mr. H. A. Bruce.
Mr. Crawford.
Mr. D. Seymour.
Colonel Sykes.

Mr. *David Innes Noad*, Mr. *George Sibley*, and Mr. *John Freeman* examined.

[Adjourned to Thursday, at Twelve o'clock]

Jovis, 13^o die Maii, 1858.

MEMBERS PRESENT:

Mr. LIDDELL in the Chair.

Mr. T. G. Baring.
Mr. Stephenson.
Mr. H. A. Bruce.
Mr. Cumming Bruce.
Colonel Sykes.

Mr. A. H. Baring.
Mr. Crawford.
Sir James Elphinstone.
Mr. D. Seymour.

Mr. George Sibley further examined.

Mr. George B. Bruce examined.

[Adjourned to Monday, at Twelve o'clock.

Lunæ, 17^o die Maii, 1858.

MEMBERS PRESENT:

Mr. LIDDELL in the Chair.

Mr. A. H. Baring.
Mr. T. G. Baring.
Colonel Sykes.
Mr. H. A. Bruce.
Sir J. Elphinstone.
Mr. Crawford.

Mr. Cheetham.
Mr. Stephenson.
Mr. Cumming Bruce.
Mr. Campbell.
Mr. Glyn.

Mr. G. B. Bruce further examined.

Colonel John P. Kennedy examined.

[Adjourned to Thursday, at Twelve o'clock.

Jovis, 20^o die Maii, 1858.

MEMBERS PRESENT:

Mr. LIDDELL in the Chair.

Mr. A. H. Baring.
Mr. T. G. Baring.
Colonel Sykes.
Mr. H. A. Bruce.
Mr. Stephenson.

Mr. Cheetham.
Mr. Crawford.
Mr. Glyn.
Mr. D. Seymour.

Colonel J. P. Kennedy further examined.

Colonel Thomas Townsend Pears examined.

[Adjourned to Thursday, 3d June, at Twelve o'clock.

Jovis, 3^o die Junii, 1858.

MEMBERS PRESENT:

Mr. LIDDELL in the Chair.

Mr. T. G. Baring.
Mr. Cheetham.
Mr. C. Bruce.
Mr. Crawford.
Mr. George Glyn.

Colonel Sykes.
Mr. A. H. Baring.
Mr. Campbell.
Sir J. Elphinstone.

Colonel Pears examined.

[Adjourned to Monday, at Twelve o'clock.

PROCEEDINGS OF THE

Lunæ, 7^o die Junii, 1858.

MEMBERS PRESENT :

Mr. LIDDELL in the Chair.

Mr. T. G. Baring.
Mr. H. A. Bruce.
Colonel Sykes.
Mr. Crawford.
Mr. C. Bruce.

Mr. Cheetham.
Mr. Campbell.
Mr. A. H. Baring
Mr. H. D. Seymour.

Mr. *James Walker* examined.

[Adjourned to Thursday, at Twelve o'clock.]

Jovis, 10^o die Junii, 1858.

MEMBERS PRESENT :

Mr. LIDDELL in the Chair.

Mr. T. G. Baring.
Mr. Stephenson.
Mr. Cheetham.
Mr. C. Bruce.
Mr. Campbell.

Colonel Sykes.
Mr. A. Baring.
Mr. Crawford.
Mr. Glyn.
Mr. D. Seymour.

Mr. *James Walker* further examined.

Mr. *J. B. Bruce* and Mr. *Thomas R. Watt* examined.

[Adjourned to Monday, at Twelve o'clock.]

Lunæ, 14^o die Junii, 1858.

MEMBERS PRESENT :

Mr. LIDDELL in the Chair.

Mr. T. G. Baring.
Mr. Crawford.
Colonel Sykes.
Mr. D. Seymour.

Mr. Cheetham.
Mr. A. H. Baring.
Mr. C. Bruce.
Mr. H. A. Bruce.

Mr. *William Palk Andrew* and Colonel *William Erskine Baker* examined.

[Adjourned to Thursday, at Twelve o'clock.]

Jovis, 17^o die Junii, 1858.

MEMBERS PRESENT :

Mr. LIDDELL in the Chair.

Mr. H. G. Baring.
Mr. Crawford.
Colonel Sykes.

Mr. D. Seymour.
Mr. C. Bruce.
Sir J. Elphinstone.

Colonel *William E. Baker* further examined.

Sir *Macdonald Stephenson* examined.

[Adjourned to Monday, at Twelve o'clock.]

SELECT COMMITTEE ON EAST INDIA (RAILWAYS).

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Lunæ, 21^a die Junii, 1858.

MEMBERS PRESENT :

Mr. LIDDELL in the Chair.

Mr. Crawford.
Mr. Cheetham.
Mr. D. Seymour.
Mr. H. G. Baring.
Colonel Sykes.

Mr. C. Bruce.
Mr. A. H. Baring.
Mr. Campbell.
Mr. H. A. Bruce.
Mr. Glyn.

Sir James Melvill and Colonel Pears examined.

[Adjourned to Thursday, at Twelve o'clock.

Jovis, 24^a die Junii, 1858.

MEMBERS PRESENT :

Mr. LIDDELL in the Chair.

Mr. H. G. Baring.
Mr. A. H. Baring.
Colonel Sykes.
Mr. Cheetham.

Mr. C. Bruce.
Mr. Crawford.
Mr. H. Austen Bruce.

Mr. David I. Noad, Sir Macdonald Stephenson, and Mr. H. B. Bruce examined.

[Adjourned to Thursday, 8th July, at Twelve o'clock, to consider Report.

Jovis, 8^a die Julii, 1858.

MEMBERS PRESENT :

Mr. LIDDELL in the Chair.

Mr. Crawford.
Mr. Campbell.
Mr. A. Bruce.
Mr. D. Seymour.
Mr. Cheetham.
Mr. T. G. Baring.

Mr. Hodgson.
Colonel Sykes.
Mr. G. Glyn.
Mr. A. H. Baring.
Sir J. Elphinstone.

Draft Report proposed by the Chairman, read 1^o, as follows :—

"1. YOUR COMMITTEE were appointed 'to inquire into the causes of the delay which has occurred in the construction of railways in India.' They have taken evidence from many of the best authorities on the subject, viz., gentlemen connected with the Indian Government at home, officers of high standing and long experience of public works in India, as well as secretaries and engineers belonging to the different railway companies, and are agreed upon the following Report :—

"2. There are seven distinct companies at present engaged in constructing lines of railway in India, under the guarantee of the Government:

"1. The East India Railway Company engaged to construct a line from Calcutta *viâ* Rajmahal, Agra, and Delhi to Lahore, with a branch from Mirzapoor to Jubbulpoor.

"2. The Great Indian Peninsular Company, who have undertaken a line from Bombay in a north-easterly direction to Jubbulpoor, to meet the East Indian Branch, and a line in a south-easterly direction *viâ* Poona and Sholapore to Bellary, there to meet the Madras line.

" 3. The Madras Railway Company engaged in constructing a line from Madras to Bellary to join that from Bombay, and a south-west line to the opposite coast, at or near to Beypoor.

" 4. The Bombay and Baroda Company undertake a line from Bombay *via* Surat, to Baroda and Ahmedabad.

" 5. The Scinde and Punjaub Railway Company, who are to make a line from Kurrachee to Kotrie on the Indus, and from Moultan to Lahore in the Punjaub.

" 6. The Eastern Bengal from Calcutta to Dacca.

" 7. The Great Southern of India from Nizapatam to Trichinopoly, with a branch to Sotem.

" 3. The first Indian Railway project was broached in the latter end of 1844, by Mr. Macdonald Stephenson, who submitted to the India House a scheme for a line from Calcutta to the north-west of India, based upon minute information and statistics collected by himself on the spot, and almost simultaneously Mr. Chapman submitted a scheme for a railway from Bombay towards the interior.

" 4. The *East India Railway* was formed in June 1845, and the engineering staff sent from this country having made the necessary surveys and investigations, the Board, before the end of that year, expressed to the Court their readiness to discuss the terms upon which the work was to be carried on; great difficulties, however, were thrown in the way of any satisfactory settlement of conditions, the terms of the guarantee forming the main subject of discussion, and long negotiations ensued, for a more detailed account of which your Committee would refer to the evidence of Mr. Danvers, Mr. Noad, Sir James Melvill, and Sir Macdonald Stephenson.

" 5. At length, in August 1847, a large staff of engineers was sent out, and there seemed a fair prospect of commencing operations during the ensuing cool season, and a call was made on the shareholders with a view to provide the deposit, when, unhappily, the commercial crisis of 1847 intervened, followed by the French revolution of 1848; two events which, for the moment, completely paralysed all commercial operations. Owing to these untoward circumstances, the Railway Company appears to have experienced considerable difficulty in completing the deposits required by the Court, which refused to make any concessions, and threatened to suspend all further negotiations; this resulted in July 1848, in a fresh proposition on the part of the Railway Company, and difficulties were again raised as to the guarantee; and after the loss of much valuable time, these prolonged negotiations terminated in a compromise, which was brought into the form of a contract, and signed in August 1849. Some further time was subsequently lost in correspondence with the Home Authorities in regard to contracts, salaries of engineers, and other matters. And it was not until January 1851, that the Railway Company resumed active operations (the work being limited to an experimental section from Calcutta to Raneegeunge).

" 6. In February 1855, the whole of the first section out of Calcutta, of 121 miles, was opened for traffic, and during this time arrangements were concluded for the extension of the line to Delhi, a distance of 1,164 miles. These works are in course of construction; and in the present year another 125 miles between Allahabad and Cawnpore will be opened. The other sections will be completed in succession, and the whole may be expected to be open in 1862. The entire length of line sanctioned is about 1,400 miles, including the branch of 300 miles between Mirzapore and Jubbulpore, recently sanctioned; and the estimated cost is put at 12,381,000 *l*.

" 7. The *Great Indian Peninsular Railway Company* was formed in the spring of 1845, under the auspices of Mr. John Chapman, but they did not succeed in obtaining their Act of Parliament until August 1849, when an agreement was entered into between the East India Company and the Railway Company for the construction of an experimental line from Bombay to Callian, a distance of 33 miles. The first sod was turned in October 1850, and the whole length completed in May 1854.

" 8. The entire length of line sanctioned, and upon the capital for the construction of which interest at 5 per cent. is guaranteed, is 1,235 miles, of which only 88½ miles are as yet open; 442 miles more are now under construction, to be completed by the end of 1861; 595 miles are about to be let, to be completed by March 1862; and 110 miles are in abeyance; making a total of 1,235 miles, the whole of the companies' undertakings.

" 9. The *Madras Line*.—A company was first formed for the construction of a railway at Madras in 1845, but, after two years' unsuccessful application for a guarantee, it was dissolved in 1847. The present company was then formed, and applied, in May of that year, to the Court of Directors for a guarantee, which was at that time altogether declined, the Court replying that, until the result of the experiments already authorised in Bengal and Bombay had been seen, they were not disposed to grant any further guarantee.

" 10. The application was renewed in February 1850, but more than two years elapsed before any arrangement was come to, and it was not until May 1852 that the East India Company conceded to the Madras Railway Company 4½ per cent. on 500,000 *l*. for an experimental line, beginning at Madras, and proceeding in a westerly direction. The Act of Incorporation passed in June 1853, and the first sod was turned in July of that year; and in July 1856 the first portion of the line, 65 miles in length, was opened.

" 11. In

"11. In September 1853 the railway company agreed to a proposal from the East India Company to extend the line to the West Coast, with branches to Bangalore, and the foot of the Neilgherry Hills; and for that purpose the East India Company agreed to increase the capital on which they would guarantee interest to 4,000,000 *l.* The Act of Parliament was obtained in June 1854, and the extended contract signed in December 1855; a further extension was subsequently proposed by the Court of Directors, and the railway company undertook the execution of a line from Madras, *viâ* Bellary, to a junction with the line coming from Bombay to the southward, and for which another 1,000,000 *l.* was raised in September 1856.

"12. Different rates of interest, varying from 4½ to 4¾ and 5 per cent., were guaranteed on the different amounts of capital thus raised, and considerable dissatisfaction seems to have been produced in the minds of the original shareholders in consequence.

"13. *The Bombay, Baroda, and Central India* scheme was sanctioned by the home Government in April 1855, the surveys having been completed in April 1854, when the Supreme Government of India approved and recommended the main extent of line from Bombay *viâ* Surat and Broach to Ahmedabad, but the home authorities withheld their sanction until November 1857 from that important portion of the line, which is to connect Surat with Bombay, the only real port of shipment for the rich products of Guzerat. The reasons assigned for this long delay are, that, owing to the difficulties presented by the country, doubts were at first entertained as to the practicability of the route, and differences of opinion prevailed among the local engineers; that subsequently reference was made to the Government of India on the subject, and a good deal of discussion arose in India between the Government of Bombay and the Supreme Government thereon. Great objections have also been and are still felt to the existence of two large railway termini in Bombay; the mode of entry thereto is still undetermined, and the arrangements for the use of a common terminus with the Great Indian Peninsular Company yet remain unsettled. For further particulars respecting this line, your Committee would refer to the valuable evidence of Colonel Kennedy, whose views and elaborate calculations upon the whole subject of railway communication for India are deserving of careful consideration.

"14. *The Scinde and Punjab Railway Company* was formed in December 1854, and the Act of Incorporation obtained in July 1855, but the necessary surveys had been all taken in 1853 (under instructions from the Bombay Government, and on the recommendation of the Scinde Commissioner), by Lieutenant Chapman, an eminent engineer in the Bombay service, and approved by the superintending engineer of the province, the Government having apparently had some intention of making the line themselves. The company commenced their surveys in June 1855, and all were completed by August 1857, during which time 11 different routes were surveyed by direction of the local government. Various schemes and conflicting propositions were mooted and discussed during the absence of Mr. Frere, the Commissioner of Scinde, and Colonel Crawford, the eminent consulting engineer to the Bombay Government, and no small confusion seems to have been created by the consequent change in the local authorities, who had every power to interfere and determine how the works were to be constructed, but no power to compel any deviation from the original points laid down as the termini of the line at Kurrachee and Kotree, a town on the Indus, opposite Hyderabad, because the contract had been executed, and the whole matter investigated on the spot, and approved by the then existing authorities; and after a loss of fully 18 months the identical line, as originally sanctioned, is now in course of construction. The whole distance from 'Kurrachee' to 'Kotree' is 110 miles, and the character of the country favourable. For further information as to the entire scheme of the Scinde and Punjab Railway, your Committee would refer to the evidence of Mr. Andrew.

"15. There are two other railway schemes for India guaranteed, and undertaken by separate companies, viz., the Eastern Bengal, from Calcutta to Jessore and Dacca, and the Great Southern of India, from Nizapatam to Trinchinopoly, with branches; but although each appears to offer great ultimate commercial advantages, being still in their infancy, your Committee have not thought it necessary to institute any minute inquiries into their history.

"16. The delays which appear to attend railway construction in India may be classified under four distinct heads:

"1. Delays arising from Government supervision at home and in India.

"2. Delays incidental to the execution of extensive and complicated public works in a distant country.

"3. Delays arising from the natural difficulties which the face of the country presents.

"4. Delays produced by political causes, such as mutiny, and those insurrectionary movements which have unhappily of late been too frequent in India.

"17. Your Committee will proceed to notice each class of delay in the order thus given, but it is necessary, before doing so, to describe shortly what the system of railway construction pursued in India is. Indian railways are constructed by companies formed in this country, and incorporated by Acts of Parliament; all their proceedings, operations, and expenditure being subject to the supreme control of the Government, who engage to grant all the land required, free of expense, to the companies, and to guarantee interest, generally at the rate of five per cent. per annum, for 99 years, upon the capital employed.

" 18. The following conditions are attached to the guarantee and the granting of the land :

" 'The Railway Company have the power of surrendering the works at any time after the line is opened, upon giving six months' notice to the Government, and the East India Company undertake to repay the whole amount that has been expended by the Railway Company.

" 'The East India Company have the power, within six months after the expiration of 25 or 50 years, of purchasing the railway at the mean market value, in London, of the shares during the three previous years. In case the Railway Company fail to complete the line or to work it satisfactorily, the Government is entitled to take possession, and repay within six months the sums expended.

" 'The Railway Company repay the guaranteed interests from the profits of the railway.'

" 19. The supervision of the Government over the proceedings of the railway companies is of two distinct kinds, viz., that exercised in the person of the *ex officio* Director over the Railway Boards in London, and that exercised by the consulting engineer in India, to whom is committed the charge of superintending on behalf of Government all railway operations in that country.

" 20. *Supervision at Home.*—The duties of Official Director at all the different Railway Boards are performed by the same person, and he has, under the terms of the contract, a power of veto over all the proceedings of the Board, but it does not appear that this power has ever been exerted; indeed, until a comparatively recent period, his functions appear to have been confined to giving information to the Court of Directors upon points on which they might require it, and his assistance and advice towards the promotion of the various undertakings; but authority has been lately given to him to sanction all indents (or requisitions) for stores and materials which may have been approved by the local governments in India, and the acceptance of tenders for the supply of the same, and to give consent to any purchases that may be originated at the Board without having been indented for from India.

" 21. Previous to this important extension of the powers of the official director, each individual indent was submitted to the home authorities, and the process is thus described by Sir James Melvill: 'The indent came from the railway authorities in India to the Railway Board in this country; the Board then came to its decision upon it; and if they proposed to comply with it, they sent a resolution to that effect to the Court of Directors; the court came to an opinion upon it, and their opinion was submitted for the concurrence of the Board of Control, and when the indent was returned with the opinion of both authorities, the decision was communicated to the Railway Board.' Such a system necessarily entailed a very considerable amount of delay and correspondence, and the best results may be anticipated from the judicious changes lately effected in this respect.

" 22. The process of forwarding instructions from the Railway Boards to their agents in India also seems to your Committee to require improvement. Sir James Melvill thus describes it: 'The Railway Board prepares a draft of the instructions to its agent in India, and every such draft, without exception, is submitted to the Court of Directors; the Court, expressing an opinion upon it, submit it to the Board of Control, and when both authorities are agreed, the letter is returned to the Railway Board, with an intimation that the Court of Directors offer no objection to it.' Considerable delays have not unfrequently resulted from this cause; and though it is, no doubt, important that instructions to railway agents should go out to India backed by the whole weight and authority of the approval of the Home Government, your Committee would confidently expect that the contemplated consolidation of the departments of the India Board and the Board of Control will materially expedite the future transaction of railway business. Before leaving this branch of the subject, your Committee would remark that the harmony which almost universally prevails at the Railway Boards seems to be in no small degree attributable to the tact and discretion exercised on all occasions by the Official Director.

" 23. *Supervision in India.*—Under the terms of the contract the Government have an almost unlimited power of control over the acts and operations of the railway companies, the inspection and supervision of the works being in every case delegated to a military engineer, whose duty, as described by Colonel Baker, is, in the first instance, to examine the line of country over which it is proposed to construct a railway, to examine all the designs and estimates, to audit all expenditure, to report upon completed works, and to maintain a real check over all the acts of the railway officers.

" 24. Your Committee hesitate to express any opinion as to the policy of employing military men in the inspection of railway works and the control of civil engineers, but it is quite clear that to ensure cordial co-operation requires the exercise of no small amount of tact and discretion on both sides; too minute an interference in details, while unnecessary for practical economy, involves constant controversy, lengthy correspondence and consequent delay, besides engendering irritation and discord where friendly and united action ought to subsist. And your Committee are decidedly of opinion that to ensure the speedy and efficient completion of railways in India the utmost freedom of action ought to be afforded to the efforts of the different companies, consistent with the control necessary to protect from undue expenditure the Indian Exchequer, upon which the payment of the guaranteed interest must long remain a heavy charge.

* " 25. Complaints

"25. Complaints of minute interference on the part of the Government consulting engineer have been strongly urged from the Madras Presidency, for the further details of which your Committee would refer to the evidence of Mr. Bruce, Mr. Walker, and Colonel Pears; and directions have been sent out from the home authorities to the Madras to relax the extent of supervision in force there; but it does not appear in evidence that those instructions have as yet taken effect.

"26. Other complaints, but in a minor degree, have arisen, both in Bengal and Bombay, though in the latter Presidency the relations between the Government and the Great Indian Peninsular Railway officials appear to be, for the most part, of a harmonious and satisfactory character.

"27. The delays incidental to the construction of railways in so distant a country as India are of various kinds and degrees of magnitude. The cost and means of obtaining freight must always be regulated, and, in the opinion of many competent authorities, actually limited by the home demand for Indian produce; and hence the transport across the sea of the vast mass of dead weight necessary for the construction of thousands of miles of iron way, besides locomotives, iron work for bridges, and other materials, forms an item of delay second only in importance to the difficulties which impede the conveyance of these materials up the country, where the means of internal communication are in many places very imperfect, where river navigation during the dry season is liable to constant interruption, where boats are scarce, and native boatmen careless. To these difficulties may be added the want severely felt in many districts, and especially in Bengal, of fuel for lime and brick burning, and of timber suitable for sleepers, large quantities of which are now being supplied from England; not to mention the effects of Indian climate upon European constitutions, the failures of contractors, unaccustomed or incompetent to undertake such extensive works; and last, though not least, the circuitous and lengthy correspondence carried on between the Railway Boards and their agents, on the one hand, with the various Government departments, both here and in India, on the other; all these appear to your Committee to form sources of delay more or less serious, and must always be classed among the main impediments to railway enterprise in India.

"28. *Delays from Political Causes* have been of frequent occurrence; in Bengal the Santhal rebellion in 1855, is described as having thrown back the works in the Rajmahal district for 12 months, and the evil influences resulting from it are not even yet at an end.

"The Mutiny subsequently suspended railway operations in Upper Bengal and the North-West Provinces from May to December of last year, and its disastrous consequences must be felt for some time to come, although the actual damage done to the works appears to be less than might have been anticipated.

"Railway operations in the other Presidencies have hitherto been happily free from the disturbing influences of insurrection and war.

"29. Lastly come the delays arising from the natural circumstances of the country, such as the bridging of large rivers, and the surmounting of the ghauts. Mr. Noad in his evidence states, that the whole question of the completion of the East India Railway resolves itself into the rapidity with which they can construct the enormous number of heavy bridges and valley arches. Along the Ganges Valley line, between Burdwan and the river Soan, a distance of about 400 miles, there are described to be no less than 47,000,000 cubic feet of brickwork, including the substructure of the gigantic bridge over the Soan.

"30. On the Bombay and Baroda line, between Surat and Ahmedabad, three large and rapid rivers, the Taptar, Nerbudda and Mhye, present considerable engineering difficulties, and require costly and extensive bridges; on that important portion of the line between Surat and Bombay, no fewer than 18 rivers have to be crossed, one of which, known as the Bassein Strait, is described to be $1\frac{1}{2}$ mile in extent. On portions of the Madras and Great Indian Peninsular lines also, the bridging works are described to be very heavy; but even the great works thus enumerated appear insignificant in comparison to the stupendous task undertaken by the Great Indian Peninsular Company of carrying their railway across the two mountain ranges known as the Thull Ghaut and the Bhore Ghaut, the former on the north-easterly, the latter on the south-easterly portions of the line. On the Thull Ghaut the ascent is nine miles, the total rise in that distance 972 feet, the steepest gradient is one in 87, for a distance of 11 miles 44 chains, and the works include 1,962 lineal yards of tunnelling, and 614 yards of viaduct, at an estimated cost of 49,988 £. per mile. On the Bhore Ghaut the steepest gradient is 1 in 67 for a mile and 38 chains, the total distance is 15 miles 68 chains, the total rise in that distance, 1,831 feet, the tunnelling is 2,535 yards, and the viaduct 898 yards, the estimated cost being 48,188 £. per mile.

"31. With the exception of the ghauts and rivers, however, the general face of the country seems favourable for railway construction, presenting easy gradients; and the very low price of labour keeps down the cost to an average for the whole country of about 10,000 £. a mile, while many of the less expensive lines are being constructed at a cost of 6,000 £. per mile.

"32. Upon an impartial review of the early history of Indian railways, there can be no doubt that much valuable time was lost in the preliminary arrangements for railway construction in India; and although the novelty and magnitude of the undertaking, the remoteness of the scene of operations, and the natural difficulties of climate and country might well

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"31. With the exception of the ghauts and rivers, however, the general face of the country seems favourable for railway construction, presenting easy gradients; and the very low price of labour keeps down the cost to an average for the whole country of about 10,000 £. a mile, while many of the less expensive lines are being constructed at a cost of 6,000 £. per mile.

"32. Upon an impartial review of the early history of Indian railways, there can be no doubt that much valuable time was lost in the preliminary arrangements for railway construction in India; and although the novelty and magnitude of the undertaking, the remoteness of the scene of operations, and the natural difficulties of climate and country might well

have raised doubts and hesitation in the minds of the Indian authorities at home, your Committee are decidedly of opinion that had they taken the matter up at first with the earnestness that its importance, both commercial and political, deserved; had they met the proposals of the originators with the same liberality they have since displayed in their agreements with the different companies, our Indian possessions might ere this have been provided with many hundreds of miles of rapid internal communication, the value of which would have been felt in the facilities afforded for military concentration and the more speedy development of their wealthy resources. At the same time your Committee cannot in fairness omit to observe, that though several cases have undoubtedly been shown where the Government superintendence has been productive of vexation and annoyance in the minds of the railway officials, and tended to impede that harmonious action between the Government and the companies which is essential for the rapid completion of these great works, no very material delay in the construction of the various lines appears to have resulted therefrom; and testimony has been borne by many of the railway authorities to the value of Government control to the interests of the companies themselves, when rationally and reasonably exercised.

" 33. Your Committee have not thought it necessary to enter into any comparison of the respective merits of the contract and departmental systems of construction, the adoption of which must always materially depend on the circumstances of the district; and it appears highly necessary that both systems should have a fair trial before giving any decided preference to either. In Bengal, where the contract system seems to have been introduced somewhat hastily, extensive failures have occurred, and much delay and inconvenience has thereby resulted.

" 34. In conclusion, your Committee are of opinion, first, that the Government has acted wisely in committing to private enterprise the execution of these great public works; second, that a guaranteed interest on the requisite capital was indispensable to induce the public to invest their money in undertakings of this magnitude and novelty; and, third, that in order to protect the public revenue from undue expenditure, Government control over the railway operations is not only legitimate, but even valuable to the interests of the shareholders themselves. At the same time your Committee would observe, that under a system complicated in its character, and necessarily somewhat cumbrous in its machinery, a system, moreover, the greatest defect of which is the facility it affords for the evasion of responsibility, a clear and distinct definition of the duties, responsibilities and extent of jurisdiction of all heads of departments and those under them, is essentially requisite for its smooth and successful working; always assuming that due care be taken to entrust discretionary power only to men who are to be relied on as competent to distinguish an essential general control from special and minute interference in minor details.

" 35. By a judicious construction of the spirit rather than the letter of the contract, your Committee feel assured that arrangements may be simplified, united action for one common object secured, and railway enterprise in India may before long assume proportions commensurate with the vast commercial, agricultural and mineral resources of that country."

Draft Report proposed by Mr. *Baring*, read 1^o, as follows :—

" 1. YOUR COMMITTEE were appointed ' to inquire into the causes of the delay which has occurred in the construction of railways in India.' They have taken evidence from many of the best authorities on the subject, viz., gentlemen connected with the Indian Government at home, officers of high standing and long experience of public works in India, as well as secretaries and engineers belonging to the different railway companies, and are agreed upon the following Report :—

" 2. The first Indian Railway project was broached in the latter end of 1844, by Mr. Macdonald Stephenson, who submitted a scheme for a line from Calcutta to the north-west of India; and almost simultaneously, Mr. Chapman submitted a scheme for a railway from Bombay towards the interior. A company was also formed in 1845 for the construction of a railway from Madras to Arcot.

" 3. The Home Government, while recognising the proposals to be eminently deserving encouragement and co-operation, considered it to be indispensable that before proceeding further the applicability of railway communication to India should be accurately investigated by competent persons on the spot. This inquiry was ordered in the spring of 1845, and the result of it was received from India in the autumn of 1846. Questions then arose as to the terms upon which assistance should be given to the companies, in order to enable them to raise the requisite capital. While these were still undetermined, the commercial crisis of 1847-8 intervened; it was not till 1849 that money could be raised; and in August of that year contracts were entered into with two companies for the construction of experimental lines in the Presidencies of Bengal and Bombay. In 1852, the Home Government consulted the Government of India upon the extension of of these lines, and the adoption of others which had in the meantime been proposed; and the Minute of Lord Dalhousie of April 28, 1853, written after communication with the minor Presidencies, has been the foundation of the subsequent proceedings.

" 4. The terms of the contracts between the East India Company and the Railway Companies are, that the Government grant all the land required free of expense, and guarantee interest

terest (generally at the rate of 5 per cent.) for 99 years upon the capital employed. The Companies have the power of surrendering the works at any time after the line is opened, upon giving six months' notice, and the East India Company undertake to repay the whole amount that has been expended. The East India Company have the power, after the expiration of 25 or 50 years, of purchasing the railway at the mean market value of the shares during the three previous years. In case the Companies fail to complete their lines or to work them satisfactorily, the Government is entitled to take possession, and repay within six months the sums expended. The Companies repay the guaranteed interests from the profits of the railway. All their proceedings are made subject to the supreme control of the Government.

" 5. There are seven distinct companies at present engaged in constructing lines of railway in India, under the guarantee of the Government :

" 1. The East India Railway Company has engaged to construct a line from Calcutta *viâ* Rajmahal and Agra, to Delhi, with a branch from Mirzapoor to Jubbulpoor.

" 2. The Great Indian Peninsular Company have undertaken a line from Bombay in a north-easterly direction to Jubbulpoor, to meet the East Indian Branch, and a line in a south-easterly direction *viâ* Poonah and Sholapore to Bellary, there to meet the Madras line.

" 3. The Madras Railway Company are engaged in constructing a line from Madras to the opposite coast, at or near to Beypoor, and also one to Bellary to join that from Bombay.

" 4. The Bombay and Baroda Company undertake a line from Bombay *viâ* Surat, to Baroda and Ahmedabad.

" 5. The Scinde and Punjaub Railway Company are to make a line from Kurrachee to Kotrie on the Indus, and from Moulton to Lahore in the Punjaub.

" 6. The Eastern Bengal from Calcutta to Dacca.

" 7. The Great Southern of India from Nizapatam to Trichinopoly, with a branch to Sotem.

" Your Committee have received interesting evidence upon the proceedings of these Companies, with the exception of the two last, which are still in their infancy. Parts of the East Indian,* Great Indian Peninsular,† and Madras Railroads‡ are now open, and it is confidently expected that within the next four years, not less than 3,000 miles of the main trunk lines of railway will be completed, and opened for traffic.

* 121 miles.

† 88½ miles.

‡ 81 miles.

" 6. Your Committee are of opinion, that considerable delay has occurred between the proposals made by the different Railway Companies and the sanction of their lines by the grant of a guarantee; and that, in some cases, a more speedy decision might (as it now appears) have been safely arrived at. But your Committee are not disposed to attach any blame to the Home Government of India for having considered with great deliberation schemes for which the revenues of India are made responsible in case of failure; and the delay between the years 1846 and 1849 is to be mainly attributed to the impossibility of raising funds in consequence of the state of the money market. Your Committee desire to record their opinion, that the East India Company, throughout the proceedings under review, strongly advocated the rapid development of railway enterprise in India.

" 7. Your Committee have investigated, at some length, the complaints which have been made of the manner in which the control of the Government has been exercised over the proceedings of the Railway Companies; and they are not of opinion that any material delay in the construction of the several Lines has resulted therefrom. The conduct of the official Director of the Railway Board, Sir James Melvill, has been eminently calculated to facilitate the transaction of business in this country, and your Committee are glad to find that more extensive powers have recently been given to him. Some misconceptions appear to have arisen in India, both on the part of the Local Governments and of the Railway officials, as to the nature and extent of the supervision; but your Committee believe that these are rapidly being removed by experience, as well as by the orders of the East India Company. Much vexation and annoyance in the minds of the Railway officials at Madras, has been caused by the publication, in India, of reports containing matter of censure against them, but this practice has been discontinued in consequence of orders from home.

" 8. Your Committee are of opinion that, taking into consideration the difficulty of commencing railway undertakings in India, the physical obstacles presented in some parts by the nature of the country, and the delays caused by the Santhal insurrection and the mutiny, the progress hitherto made is satisfactory; that the works (so far as the evidence enables them to judge) have been substantially and economically constructed, and that the result is highly creditable to the railway companies.

" 9. In conclusion, your Committee are of opinion that the Government have acted wisely in committing to private enterprise the execution of these great public works; that a guaranteed interest on the capital was indispensable in order to induce the public to invest their money in undertakings of this magnitude and novelty; that, in order to protect the revenue of India, Government control over the railway operations is indispensable, and that it is also valuable to the interests of the shareholders themselves. At the same time, your Committee would observe that, under a system complicated in its character, and necessarily

somewhat cumbrous in its machinery, it is essential that the duties, responsibilities, and extent of jurisdiction of all heads of departments, and those under them, should be clearly defined; and they consider that the attention both of the home Government and of the governments of the different presidencies in India, should continue to be directed to the simplification of the supervision to the full extent that is practicable, consistently with the retention of complete control over the expenditure of the railway companies in the construction of their lines."

Motion made, and Question, "That the Report proposed by the Chairman be now read 2^d, and considered paragraph by paragraph," put and agreed to.

Paragraph 1, read, amended, and agreed to.

Paragraph 2, read, and amendments made.—Amendment proposed, To leave out the word "Lahore," in line 2, for the purpose of inserting the words "the north west" (Mr. Baring), instead thereof.—Amendment, by leave, withdrawn.

Paragraph 2, as amended, agreed to.

Paragraph 3, read.—Amendment proposed, at the end of the paragraph, to add these words: "and a company was also formed, in 1845, for the construction of a railway from Madras to Arcot" (Mr. Baring).—Question, "That those words be there added," put and agreed to. Paragraph, as amended, agreed to.

Paragraph 4, read.—Motion made, and question put, "That this paragraph be now considered" (Mr. Seymour). The Committee divided.

Ayes, 5.
Mr. Crawford.
Mr. Campbell.
Mr. A. Bruce.
Mr. D. Seymour.
Mr. Cheetham.

Noes, 6.
Mr. T. G. Baring.
Mr. Hodgson.
Colonel Sykes.
Mr. G. Glyn.
Mr. A. H. Baring.
Sir J. Elphinstone.

Paragraph 4 postponed.

Paragraphs 5 to 15, severally read, and considered.—Motion made, and question proposed, "That the paragraphs from 5 to 15, inclusive, be severally postponed" (Sir J. Elphinstone).—Amendment proposed, to leave out from the words "That the" to the end of the question, for the purpose of adding the words, "Committee now proceed with the consideration of the proposed Report," (Mr. Seymour) instead thereof.—Question put, "That the words proposed to be left out stand part of the question."—Committee divided:

Ayes, 6.
Mr. T. G. Baring.
Mr. Hodgson.
Colonel Sykes.
Mr. Glyn.
Mr. Alexander Baring.
Sir J. Elphinstone.

Noes, 5.
Mr. Crawford.
Mr. Campbell.
Mr. A. Bruce.
Mr. Seymour.
Mr. Cheetham.

Main Question put, and agreed to.

Paragraphs 16 to 22, severally read, amended and agreed to.

Paragraph 23, read, and agreed to.

Postponed paragraphs, 4 to 15, inclusive, severally again read.—Question, "That these paragraphs stand part of proposed Report," put, and negatived.

Paragraph 24, read.—Amendment proposed, after the word "co-operation," to insert the words "no small amount of forbearance and discretion must be exercised" (Mr. Crawford).—Question, "That those words be there inserted," put, and agreed to.—Paragraph, as amended, agreed to.

Paragraph 25, read, and amended.—Amendment proposed, after the word "Evidence," in line 3, to insert the words, "which complaints appear to be in part well founded" (Mr. Seymour).—Question put, "That those words be there inserted." Committee divided:

Ayes, 5.
Mr. Crawford.
Mr. Campbell.
Mr. A. H. Baring.
Mr. D. Seymour.
Mr. Cheetham.

Noes, 3.
Mr. T. G. Baring.
Colonel Sykes.
Mr. Glyn.

Amendment proposed, after the word "founded," to insert the words, "on the other hand your Committee cannot think that the proceedings of the chief engineer of the Railway Company has been wholly free from blame" (Mr. Seymour).—Question, "That those words be there added," put, and agreed to.

Amendments made,

Amendment

Amendment proposed, to leave out from the word "those," in l. 5, to the end of the paragraph (Mr. T. G. Baring).—Question put, "That the words proposed to be left out stand part of the paragraph." Committee divided:

Ayes, 4.
Mr. Crawford.
Mr. Campbell.
Mr. D. Seymour.
Mr. Cheetham.

Noes, 4.
Mr. T. G. Baring.
Mr. A. Bruce.
Mr. Glyn.
Mr. Alexander Baring.

Whereupon the Chairman declared himself with the Ayes.

Amendment proposed, at the end of the paragraph, to add these words: "Your Committee, however, have had no opportunity of hearing an explanation from the Madras Government on the subject" (Mr. Baring).—Question, "That those words be there added," put, and agreed to.—Question, "That this paragraph, as amended, stand part of proposed Report," put, and agreed to.

Paragraphs, 26, 27, 28, 29, 30, and 31 severally read, amended, and agreed to.

Paragraph 32, read.—Amendment proposed, after the word "Preliminary," to leave out to the word "and," in l. 2, for the purpose of inserting these words: "negotiations for the introduction of railway enterprise into India," (Mr. Crawford) instead thereof.—Question, "That the words proposed to be left out stand part of the paragraph," put, and negatived.—Words inserted.

Amendment proposed, at the end of the last Amendment, to insert the words "and also on account of the commercial crisis having arisen while these negotiations were still incomplete" (Mr. Baring).—Question put, "That those words be there inserted." Committee divided:

Ayes, 5.
Mr. Campbell.
Mr. T. G. Baring.
Mr. A. Bruce.
Mr. Glyn.
Mr. D. Seymour.

Noes, 2.
Mr. Crawford.
Mr. Alexander Baring.

Amendment proposed, in line 3, to leave out the words "and although" (Mr. Crawford).—Question, "That the words proposed to be left out stand part of the paragraph," put, and negatived.

Amendment proposed, after the word "home," in line 5, to insert the words: "But your Committee is decidedly of opinion that had the matter been taken up at first with the earnestness that its importance, both political and commercial, deserved, in accordance with the proposal of the Court of Directors in 1846 to the Board of Control; and had the proposals of the originators been met with the same liberality which has since been displayed in the" (Mr. Crawford).—Question put, "That those words be there inserted." Committee divided:

Ayes, 4.
Mr. Crawford.
Mr. A. Bruce.
Mr. Glyn.
Mr. A. Baring.

Noes, 3.
Mr. Campbell.
Mr. T. G. Baring.
Mr. D. Seymour.

Further Amendments made.

Amendment proposed, after the word "resources," in line 13, to insert the words: "But your Committee have no means of judging of the consideration by which the Government were actuated in these proceedings" (Mr. Crawford).—Question, "That those words be there inserted," put, and agreed to.

Amendment proposed, after the word "therefrom," in line 18, to insert the words, "from the evidence adduced your Committee are led to believe that the progress of railroads under construction in India will bear favourable comparison with that of English lines" (Mr. Alex. Baring).

Question put, "That those words be there inserted." Committee divided:

Ayes, 4.
Mr. Crawford.
Mr. T. G. Baring.
Mr. Glyn.
Mr. Alex. Baring.

Noes, 3.
Mr. Campbell.
Mr. A. Bruce.
Mr. Seymour.

Paragraph further amended.

PROCEEDINGS :—EAST INDIA (RAILWAYS).

Question, "That this paragraph, as amended, stand part of proposed Report," put and agreed to.

Paragraph 33 read. Amendment proposed, To leave out from the word "either," in line 5, to the end of the paragraph.—Question, "That the words proposed to be left out stand part of the paragraph," put and negatived.—Question, "That this paragraph, as amended, stand part of proposed Report," put and agreed to.

Paragraph 34 read, amended, and agreed to.

Paragraph 35 read, and agreed to.

Question, "That this proposed Report, as amended, be the Report of the Committee to The House," put and agreed to.

Ordered, To report the same, together with the Minutes of Evidence, and an Appendix.

EXPENSES OF WITNESS.

Name of Witness.	Profession or Condition.	From whence Summoned.	Number of Days Absent from Home, under Orders of Committee.	Expenses of Journey to London and back.	Allowance during Absence from Home.	TOTAL Expenses allowed to Witness.
				£. s. d.	£. s. d.	£. s. d.
Colonel Pears - - - - -		Burton-on-Trant -	3	{ (twice) 5 5 - }	3 3 -	8 8 -

MINUTES OF EVIDENCE.

LIST OF WITNESSES.

Lunæ, 3^o die Maii, 1858.

Mr. Juland Danvers - - - - - p. 1

Jovis, 6^o die Maii, 1858.

Mr. David Innes Noad - - - - - p. 23

Lunæ, 10^o die Maii, 1858.

Mr. David Innes Noad - - - - - p. 50

Mr. George Sibley - - - - - p. 69

Mr. John Freeman - - - - - p. 76

Jovis, 13^o die Maii, 1858.

Mr. George Sibley - - - - - p. 77

Mr. George Barclay Bruce - - - - - p. 79

Lunæ, 17^o die Maii, 1858.

Mr. George Barclay Bruce - - - - - p. 102

Colonel John Pitt Kennedy - - - - - p. 113

Jovis, 20^o die Maii, 1858.

Colonel John Pitt Kennedy - - - - - p. 129

Colonel Thomas Townsend Pears, c. b. - - - - - p. 149

Jovis, 3^o die Junii, 1858.

Colonel Pears - - - - - p. 155

Lunæ, 7^o die Junii, 1858.

James Walker, Esq. - - - - - p. 177

Jovis, 10^o die Junii, 1858.

James Walker, Esq. - - - - - pp. 199. 205

Mr. G. B. Bruce - - - - - p. 204

Mr. Thomas R. Watt - - - - - p. 211

Lunæ, 14^o die Junii, 1858.

William Patrick Andrew, Esq. - - - - - p. 221

Colonel William Erskine Baker - - - - - p. 230

Jovis, 17^o die Junii, 1858.

Colonel William Erskine Baker - - - - - p. 244

Sir Macdonald Stephenson - - - - - p. 249

Lunæ, 21^o die Junii, 1858.

Sir James Melvill, K. C. B. - - - - - p. 252

Colonel Pears - - - - - p. 273

Jovis, 24^o die Junii, 1858.

Mr. David Innes Noad - - - - - p. 280

Sir Macdonald Stephenson - - - - - p. 280

Mr. G. B. Bruce - - - - - p. 288

LIST OF APPENDIX.

Appendix, No. 1.

Papers delivered in by T. R. Watt, Esq., and referred to in his Evidence, 10 June 1858 :

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31 December 1857 - - - - - p. 292

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Engineers' Memorial to the Chairman and Directors of the Madras Railway Company - p. 293

Letter from G. B. Bruce, Esq., Chief Engineer, enclosing Extract from the Minutes of Consultation,
dated 14 February 1856 - - - - - p. 295

Extracts from a Letter of G. B. Bruce, Esq., Chief Engineer, Madras Railway, dated 2 October
1855, addressed to the Agent of the Railway Company at Madras, and forwarded by the Agent
under date the 8th of the same month to the Government Consulting Engineer, in compliance
with Mr. Bruce's request - - - - - p. 296

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Suggested Amendment of Supervision Clause of Indian Railway Contracts, 1858 - - p. 297

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Letter from C. Freshfield, Esq., to Colonel Sykes, Chairman of the Court of Directors of the
Honourable East India Company, dated 20 January 1857 - - - - - p. 298

A P P E N D I X.

Appendix, No. 1.

PAPERS delivered in by *T. R. Watt, Esq.*, and referred to in his Evidence,
10 June 1858.

Appendix, No. 1

GREAT INDIAN PENINSULA RAILWAY COMPANY.

PRESENT POSITION OF THE UNDERTAKING.

	Miles.	TOTAL.
OPEN.		
Bombay to Callian, including Mahine Branch - - - - -	34½	
N. E. Extension :		
Callian to Wassind - - - - -	16½	
S. E. Extension :		
Callian to Campeolee - - - - -	37½	
TOTAL Open - - - - -	- -	88½
CONSTRUCTING.		
S. E. Extension :		
Bhore Ghât; to be completed, June 1858 - - - - - 2½	15½	
Ditto - - February 1861 - - - - - 13½		
Bhore Ghât to Poonah; to be completed June 1858 - - - - -	89½	
Poonah to River Bheema; to be completed December 1858 - - - - -	68	
Bheema to Sholapore; to be completed September 1859 - - - - -	100	
N. E. Extension :		
Wassind to Rotunda Nulla; to be completed November 1859 - - - - -	25	
Thull Ghât; to be completed December 1861 - - - - -	9	
Thull Ghât to Bhosawul; to be completed June 1860 - - - - -	190	
TOTAL Constructing - - - - -	- -	442½
TO BE LET.		
N. E. Extension :		
Bhosawul to Nagpore; to be completed by March 1862 - - - - -	268	
Bhosawul to Jubbulpore; to be completed by March 1862 - - - - -	332	
S. E. Extension :		
Sholapore to Khistna; in abeyance - - - - -	110	
TOTAL to be Let - - - - -	- -	705
TOTAL Miles - - - - -	- - -	1,235½

3, New Broad-street, E. C., London, }
15 June 1858.

Thos. R. Watt,
Secretary.

Appendix, No. 1.

GREAT INDIAN PENINSULA RAILWAY COMPANY.

STATEMENT of RECEIPTS and WORKING EXPENSES, Revenue Account,
18 April 1853 to 31 December 1857.

D A T E.	Miles Open.	Receipts.	Expenses.	Net Profits paid to the Hon. East India Company in Reduction of Interest advanced.
		£. s. d.	£. s. d.	£. s. d.
18 April 1853 to 30 June 1854	34½	14,252 3 8	7,129 19 6	7,122 4 2
1 July 1854 to 31 Dec. 1854	- - -	6,634 8 4	4,345 13 10	2,288 14 6
1 Jan. 1855 to 30 June 1855 -	- - -	7,932 7 1	6,449 9 -	1,482 18 1
1 July 1855 to 31 Dec. 1855 -	51	8,252 6 3	4,914 11 11	3,337 14 4
1 Jan. 1856 to 30 June 1856 -	{ 51 for 4 months 88½ for 2 " }	15,191 9 -	7,115 9 4	8,075 19 8
1 July 1856 to 31 Dec. 1856 -	88½	24,555 9 1	9,646 17 1	14,908 12 -
1 Jan. 1857 to 30 June 1857 -	- - -	33,610 9 5	14,695 5 4	18,915 4 1
1 July 1857 to 31 Dec. 1857 -	- - -	32,867 11 8	15,396 6 6	17,471 5 2
	£.	143,296 4 6	69,693 12 6	73,602 12 -

3, New Broad-street, E. C., London }
15 June 1858.Thos. R. Watt,
Secretary.

Appendix, No. 2.

ENGINEERS' MEMORIAL.

To the Chairman and Directors of the Madras Railway Company.

Appendix, No. 2.

Gentlemen,

WE, the undersigned, engineers engaged on the Madras Railway, beg to call your attention to the enclosed extracts from the Minutes of Consultation of the Madras Government Financial (Railway) Department, No. 44, dated 14th February 1856, and to the accompanying letter from Mr. Bruce, the chief engineer, dated 23 April 1856, and to protest against the censures therein contained as wholly undeserved and uncalled for.

You will observe that our proceedings are said to have been marked throughout by a "deliberate disobedience of orders." This we most emphatically deny.

During the whole time we have been in your employment we have used our utmost endeavours to carry out all the orders of your chief engineer, and it has been no small gratification to us that he has more than once borne testimony to our zeal and perseverance.

In the case of the bungalows mentioned in the enclosed extracts we have equally obeyed his orders, the plans according to which the bungalows were built having been sent to us by him.

But it is said, "the Government cannot but view the sum spent on these buildings by the railway engineers as a reckless expenditure of the Company's money;" we should feel much regret if any grounds existed for so grave a charge, and believing as we do that it is utterly without foundation, we cannot quietly submit to a censure alike injurious to our honour and professional reputation.

We acknowledge that the expenditure has exceeded the sum sanctioned by Government. So it has in many other cases, while in others again the expenditure has fallen far short of the sum sanctioned. We have, in this instance, as in all others, endeavoured to execute our work as cheaply as was consistent with efficiency and despatch, and as we are acting in the capacity of engineers, not of contractors, nothing more can possibly be required of us.

Government too must have been well aware that the sum sanctioned for building these bungalows (rupees 350) would probably be far exceeded, for their own engineers have, to our knowledge, expended as much as Rs. 1,200 for the same purpose in connexion with works of very inferior magnitude to ours.

It should also be borne in mind that many of these bungalows have had to be erected in places where there existed the greatest difficulty in obtaining labour and materials, and in short we are convinced that any person really acquainted with what was required and done would at once acquit us of the charge of reckless expenditure.

We submit then that it is most unjust for Government to refuse "to comply with the request of the railway agent that the whole expenditure should be passed." Still more so that they should direct "that with respect to those districts in which the buildings have not already been commenced, the authority to expend money on engineers' temporary bungalows be considered cancelled."

Apart from the manifest injustice of making all suffer for the alleged excessive expenditure by some, we would remind you that we were informed that bungalows would be allowed us, and we submit that to deprive us of them will be totally at variance with our engagements. We would call your attention to the fact of our subordinates (inspectors and East Indian apothecaries) being allowed houses, as affording evidence that Government consider them essential, and we appeal to you whether it can be for the interest of the Company that in order to save a few pounds your engineers should be exposed in such a climate, and in all seasons, to the danger and inconvenience of living in tents.

We submit that such an arrangement is incompatible with the efficient superintendence of the works, and that instead of a saving to the Company, it must lead to a very considerable pecuniary loss, as it only can be carried out at great sacrifice of time, health, and possibly life. It cannot for a moment be entertained that we on a short engagement, and subject at any time to removal to other districts, should adopt the alternative of providing at our expense buildings which are in reality necessary for the transaction of the Company's business.

Appendix, No. 2.

We take this opportunity of expressing our earnest hope that you will interfere to prevent the repetition of the unmerited censures to which we are constantly subjected by Government, and which are published annually in the Blue Books, and frequently in the public prints, while our replies and observations are withheld at the discretion of the Government consulting engineer, so that we have not the means of setting ourselves right in the eyes of the public.

It is difficult for a person at home to form a correct estimate of the onerous duties that have to be performed by an engineer on the Madras Railway; but when it is considered that the superintendence exercised in England by skilled mechanics and good tradesmen, has here to be entrusted, unless in one instance (Poincy Bridge), to discharged soldiers, untrained Europeans, or East Indians, and ignorant and untrustworthy natives, few of whom, if any, have ever before seen a railway or been engaged on works, and all requiring to be instructed in the simplest details; when we add to this, that the Madras Railway Company are, as it were, their own contractors, the system of large contracts not having been adopted, and that nearly the whole of the line is constructed by day labour, many of the engineers having frequently from 4,000 to 6,000 people daily paid by tickets, and weekly by cash; when it is considered that the engineer has not only to give his constant personal attention to all the works on his district, but has also to design and construct a great portion of the tools and plant he requires, and even materials, such as lime, bricks, &c. have to be made by the engineer; that the districts are about 25 miles long, instead of 10 or 12, as is usual in England, and that all the accounts have to be examined, checked, and even occasionally made out by the engineer, who thus combines in his own person the resident engineer, the contractor, the manufacturer of materials, and the accountant; and that moreover we have had the disadvantage of having the whole native officials against us, and had to break through the tyrannical system of impressment and advances hitherto used by Government, it might be supposed that every encouragement would be afforded us, and every allowance made for the difficulty of our position; such, however, is far from being the case.

In the Railway Department, Blue Books of Government censures on almost every engineer engaged by the Company are to be found, and the periodical receipt of these unfavourable observations is most discouraging to us, feeling as we do that we have done our best to merit approval. In our humble opinion the effect of these censures has decidedly "tended to retard rather than to facilitate progress."

The complaints by Government of delay in the progress of the work are particularly unreasonable; for in almost every instance where delay has occurred, which has certainly not been so frequently as might be supposed from the language of the Blue Books, it has been caused either by Government withholding the necessary funds, or from our not being able to obtain possession of the land. We have been repeatedly stopped by want of money. With all this, it is somewhat remarkable that the result of the only complete inspection of our works which has been made by the Government engineer since the commencement of the year 1854, was an expression on his part of great satisfaction with their state and progress, a favourable review on the part of Government, and an intimation of your satisfaction and approval.

This, we think, sufficiently shows that the previous censures and discouraging remarks were unfounded, and we believe that further investigation will show that those directed to us subsequently have been equally undeserved.

We are well aware of the right of supervision over all departments of the railway enjoyed by Government, but we protest most emphatically against the mode in which that right is exercised. If our works were subjected to the inspection of professional men possessed of a practical acquaintance with railways, we should not object to meet their criticisms, but it cannot be wondered at that we who have been educated as engineers, and have had in most cases experience of the duties, and the freedom from undeserved censures of engineers on works at home, should be impatient of the censures of men, who, however worthy of respect in the profession to which they belong, have shown that they are destitute of that peculiar knowledge which would fit them for the supervision of the details of railway construction.

We believe we have double the length of line entrusted to the charge of the Bengal engineers, who are moreover exempt, unless perhaps in exceptional cases and under peculiar circumstances, from the duties of contractors, and making tools and materials which, as already stated, devolve upon us. We submit, therefore, that we are entitled to equal allowances for bungalows, &c., and to equal freedom from petty interferences on the part of Government.

We trust that you will not on account of these remarks consider that we are dissatisfied with our position as regards you or your chief engineer. On the contrary, we received with the greatest satisfaction the approval of your Board already referred to, and willingly bear testimony, not only to the uniform kindness and consideration we have received from Mr. Bruce, but to his excellent mode of supervision, his indefatigable zeal for the Company's interest, and his high professional attainments.

We

We must, however, earnestly request your early and active interference to protect us from these unjust censures, which endanger our professional reputation and future prospects, and question our honour as gentlemen.

Appendix, No. 2.

We have, &c.

(signed) *Bryce M'Master*, Resident Engineer, Districts 1, 2, 3.
James Collins, Resident Engineer, District 4.
H. B. Hederstedt, Assistant Engineer, District 5.
George Latham, Assistant Engineer, District 6.
Wm. Henderson, Assistant Engineer, District 7.
Alex. Beattie, Resident Engineer, District 8.
Thos. Lovell, Assistant Engineer, District 9.
 Vacant, District 10.
Alex. Bryce, Acting Resident Engineer, District 11.
Alex. H. Macnair, Assistant Engineer, District 12.
A. D. Rose, Assistant Engineer, District 13.
D. Parker, Resident Engineer, District 14.
Robt. C. Rowlands, Assistant Engineer, District 15.
Chas. J. M. Dixon, Assistant Engineer, District 16.
Geo. Howard Fenwick, Resident Engineer, District 17.
Robt. Paton, Assistant Engineer, Madras Terminal Station.
Wm. Geo. Smart, Resident Engineer, Cuddapah Survey.
A. Stein, Assistant Engineer, Cuddapah Survey.
Chas. E. Purdon, Assistant Engineer, Cuddapah Survey.
T. M. H. Johnston, Assistant Engineer, Cuddapah Survey.

(A true copy.)

(signed) *Ja. Walker*,
 Managing Director, Madras Railway Company.

7 May 1856.

CIRCULAR.

My dear Sir,

Madras, 23 April 1856.

I ENCLOSE an extract from the Minutes of Consultation of the Government, showing the views they entertain regarding the expenditure on the bungalows on your district above the sum sanctioned for that purpose.

The agent and manager has desired me to carry them into effect.

Yours, &c.

(signed) *Geo. B. Bruce*, Chief Engineer.

(A true copy.)

(signed) *Ja. Walker*, Managing Director,
 Madras Railway Company.

(No. 44.)

Financial (Railway) Department.

EXTRACT from the Minutes of Consultation, dated 14 February 1856.

Para. 2. The Government entirely concur in the views expressed by Colonel Pears in paras. 5 to 7, of his review of this expenditure, and are of opinion with him that Mr. Bruce, the chief engineer, is greatly to blame in these proceedings of the railway engineers, which have been marked throughout by a deliberate disobedience of orders. These orders, as justly observed by Colonel Pears, are very clear and decisive, and there could therefore be no misunderstanding; considering the temporary object for which the bungalows are required, that not one of them, as remarked by Colonel Pears, can be regarded as a permanent structure, and that they are all built of inferior materials, the Government cannot but view the sum spent on these buildings by the railway engineers as a reckless expenditure of the Company's money.

3. Entertaining these views, the Government cannot consistently comply with the request of the railway agent, that the whole expenditure should be passed, and they resolve to call his particular attention to the total disregard of their orders by the railway engineers; and to inform him that the Government look to him to see their instructions obeyed, and expect that he will vindicate his own authority, and that of the Government, by suspending any officer of the Company who shall in future deliberately oppose himself to their orders.

Appendix, No. 2. 5. The Government further direct that with respect to those districts in which the buildings have not already been commenced, the authority to expend money on engineers' temporary bungalows be considered cancelled.

6. The Government also resolve to instruct the railway agent that money to the extent already sanctioned for that purpose, may be expended on temporary bungalows for inspectors, sub-inspectors, and apothecaries, and that when such temporary buildings are required in connexion with any particular work of magnitude, they be provided out of the contingencies for that work, and so entered in the accounts.

(True extract.)

(signed) *Robert Paton*, for Chief Engineer.

Madras Railway, Chief Engineer's Office,
23 April 1856.

(A true copy.)

(signed) *Ja. Walker*, Managing Director,
Madras Railway Company.

EXTRACTS from a Letter of *G. B. Bruce*, Esq., Chief Engineer, Madras Railway, dated 2 October 1855, addressed to the Agent of the Railway Company at Madras, and forwarded by the Agent under date the 8th of the same month to the Government Consulting Engineer, in compliance with Mr. Bruce's request.

(No. 284.)

Madras, 2 October 1855.

* * * * *

10. As to the charge, disregard of orders, and not supplying information, I can only say that I have never intentionally disregarded any orders; and if ever I have deviated from the strict line of official routine, I have been led into it by no other feeling than too intense a desire to forward the work.

11. As to the non-supply of information and plans, I can say conscientiously that I have never in one single instance withheld information which I possessed, or failed to endeavour to get it when required.

12. It is my most anxious desire to supply all papers, documents, and information called for, and when I fail in this, or the delay is greater than could be wished, it is owing entirely to the very limited staff placed at my disposal.

13. When drawings are not forwarded, it is only from the physical inability to get them done.

14. Compare for a moment this line with that in Bengal; there each engineer has about 12 miles, with surveyors and draughtsmen under him, as well as highly-paid inspectors from England. Besides all this, he has a contractor to do the work, who in turn has his engineers and superintendents.

15. The staff employed is as four to one, both in the office and the field.

16. I plead guilty to the charge of not having supplied either Government or our directors with information and drawings so fully and speedily as was desirable, and no one has deplored this more than I have done; but with my present small staff I cannot hope for much improvement.

17. It is probable I have myself to blame for having tried to keep down the expenses of the engineering establishment as much as possible, perhaps below the standard of efficiency, and have in consequence incurred your displeasure, and that of Government.

18. If Government and our directors will by increasing the staff of engineers, lighten their labours, and give me a more efficient office staff, upon a footing proportionate to the work, I shall not fail to satisfy all the requirements of Government.

19. I beg to repeat that I have not disobeyed the orders of Government, inasmuch as the Goriathim Bridge has not been begun. I regret the delay which occurred in sending the particulars required; this was partly accidental, partly unavoidable, but very far from being designed or intentional.

20. It is due to me that this letter should be forwarded to Government, and that the notice of the Board of Directors should be specially called to it.

(signed) *G. B. Bruce*.

(True extract.)

Ja. Walker.

Appendix, No. 3.

SUGGESTED AMENDMENT OF SUPERVISION CLAUSE OF INDIAN RAILWAY CONTRACTS, 1858. Appendix, No. 3.

MEMORANDUM.

ALL general plans, designs, and estimates to be submitted for approval of the Government engineer as at present.

The designs and estimates once approved, the carrying out of the work to be left to the engineers of the railway company.

The designs not to be varied in principle or in their essential character, and the sanctioned estimates not to be exceeded.

The work as completed to be reported to the Government engineer, who will inspect and certify to its being in accordance with the approved plans, and within the sanctioned estimate.

Certificates to be paid as at present on monthly measurements of work, and fortnightly on account, on approval of the railway engineer, who is responsible for the work executed corresponding with the payments.

Advances of funds upon security of mercantile houses, of plant, or otherwise than upon materials on the ground to be specially sanctioned by Government engineers. Advances on delivered materials to be made on the certificate and responsibility of the railway engineers.

On questions on which the Government engineer disagrees with the railway engineer, the locomotive superintendent, or the traffic manager, the subject should be considered in a committee of the Government engineer, the railway agent, and the railway officer whose department is affected, in order that the benefit of that experience and special qualification which the railway company's officers possess, may not be entirely neutralised and lost; that no avoidable delay shall take place in supplying the funds, or the engineering or other assistance, when required, and applied for by the railway companies. That the home supervision should be so far simplified and amended, that on all the usual business of the company, the sanction of the official director shall suffice, without increasing the delay by a reference upon minor details to the India House and the India Board, but that such reference to the supreme authorities should be limited to broad principles, and important questions exclusively.

The advantages over the existing plan are these. The responsibility is imposed, felt, and accepted by those on whom it at present virtually rests, and the check will be the more effectual from the fact of the responsibility being defined.

The decision upon all important questions is reserved to the Government engineers, who sanction and certify the due execution, at an approved cost, of all the works, while the responsibility of the details, and the observance of the conditions rests, where it ought to rest, upon the railway engineers.

The evil of the present practice may be concisely defined.

The railway engineers have the real responsibility, divested of the element which imparts the chief security—the acknowledgment of their responsibility, and the check is now really less effectual than it will be under the amended arrangement; the delays are alike injurious and unavoidable. The Government powers of selecting the route, and direction of the line, their financial audit, their approval of the whole of the designs, plans, and estimates of every portion of the work, and their complete control of all the expenditure remain undisturbed.

There is no alteration in the principles or conditions of the contract with the railway companies, it is only the amended interpretation or definition of one clause, which the practice and experience of several years have shown to be indispensable.

Appendix, No. 4.

Appendix, No. 4.

To Colonel Sykes, Chairman of the Court of Directors of the Honourable East India Company.

Dear Sir,

London, 20 January 1857.

On the recent occasion upon which I had the honour of waiting on you, at the instance of, and accompanied by, a deputation of the directors of the Oude Railway Company, I advanced the position that the arrangements between the East India Company and the various companies formed for making railways in India, embodied in the guarantee of interest, had not up to this point involved present burthen on the revenues or resources of India, and that the experience of the working of the railways (unfavourable as up to this time it must have been, as a fair test of their prospects) was sufficient to dispel the apprehension that there would be any ultimate charge on those revenues and resources resulting from the guarantee.

The fact which I assumed as the basis of the first proposition was that the East India Company had always hitherto (by reason of the stipulation contained in the contracts that all the capital of the railway companies, as called up, should be paid into their treasury) been in possession of a much larger amount of the capital of the railway company than it had ever been called upon to disburse in the form of guaranteed interest.

You appeared to doubt the correctness of that assumption; and, in reply, I ventured to express my conviction that, if the accounts were examined, it would be found that the East India Company had now in their hands several millions of the railway capital contributed by the various railway companies, and that even if from that sum were deducted the aggregate of interest paid by the East India Company to the several companies under their guarantee, there would still be a large residue.

You intimated surprise at this statement, and I had, of course, not the means at hand of following the matter further.

Neither have I since had the time necessary to collect the materials for precise information on the point. I have, however, felt it due, both to you and to myself, to make so much of inquiry as was necessary to enable me generally to test the accuracy of the views expressed; and I have been led by a sense of the importance of the subject into some further considerations, which I shall take the liberty of bringing under your notice.

To make my statement intelligible, it is necessary that I should premise a few facts connected with the early negotiations which led to the principle of arrangement between the East India Company and the railway companies, which is embodied in the contract between them.

The first suggestion of the introduction of the railway system into India originated, as you are no doubt aware, with Sir Macdonald Stephenson, so long ago as the year 1844, towards the latter end of which year a few gentlemen met in London, at his invitation, to discuss the subject on public grounds. The result of their deliberations was a conviction that the introduction of railways into India would be attended by incalculable advantage to the empire in every point of view, but that the inducements for the employment of capital in such an enterprise in India were not of a character sufficiently certain to afford the prospect of success in an attempt to raise money for the purpose, without the guarantee of a certain minimum rate of interest. These views were represented to the East India Company, accompanied by a proposal to enter upon the undertaking, provided the Court of Directors would give the guarantee. The Court of Directors, after considerable discussion, first upon the adaptability of the railway system to the Indian Empire, and subsequently on the policy of committing them to individual enterprise or undertaking them on their own behalf, and also on the question of which was the most important line on which to commence, ultimately entertained the proposal of the East Indian Railway Company, which had been formed in 1845 in anticipation of this decision.

It is unnecessary, and would be irksome, to follow the course of these proceedings and negotiations, which occupied a period of four years.

It will be sufficient for the present purpose to say that, in September 1848, after having, as the promoters of the movement supposed, adopted the principle of a guarantee, the Court of Directors eventually proposed to the East Indian Railway Company (who were the pioneers in the great movement) an arrangement by which they were to advance interest at 5. per

5 per cent. on the capital necessary for the construction of an experimental line from Calcutta to Burdwan, on the route to Delhi. The interest was to be guaranteed for 99 years; but it was expressly stipulated by the Court of Directors that if the receipts of the railway did not pay its expenses, the railway company must bear the loss. It was pointed out that such an arrangement implied no guarantee, and amounted to no more than the railway company could do for themselves out of their own capital; but the East India Company were inflexible.

In this conjuncture the railway cause had almost succumbed—one of its earliest and staunchest advocates and adherents, the first chairman of the company, Sir George Larpent, had been compelled from circumstances to withdraw from it—the sympathy of others of its supporters had grown cold, and the hearts of all had become sick from hope deferred. Fortunately there still remained a few indomitable spirits, who regarded the cause as worthy of a more protracted struggle, and eventually, after much negotiation, conducted mainly by the late Mr. Aglionby, the then chairman of the company, and Mr. Wilson, then Secretary of the Board of Control, the difficulty was met in the way of compromise. An arrangement was proposed to and accepted by the railway company, by which, while the East India Company's obligation was limited to the guarantee of interest, the railway company were to have the liberty, if dissatisfied with its working prospects, to deliver up the railway at any time, after it had been at work for three months, to the East India Company, and be entitled to receive from them the capital expended, either in money or an annuity. This arrangement embodies the principle common to all the existing railway companies, and is adopted and viewed by the public as a practical guarantee of a dividend, with the qualification only of the possible loss of interest for the period intervening before the railway could be surrendered. The effect of this qualification, and of the complicated provisions of the contract, has however been, as you will readily understand, to render necessary the payment of a higher rate of interest than would have been requisite if the arrangement had been one of simple guarantee of a certain return, with the contingent prospect of some addition to it. I pointed out this inevitable consequence at the time, and even suggested that the East India Company, in return for the unqualified guarantee, might stipulate for one-half of the net profits, after payment of the guaranteed rate, which would have been a very beneficial arrangement for the East India Company; but the proposition did not meet with favour.

In addition to this unsatisfactory feature in the arrangement, the East India Company stipulated for an absolute control in all the arrangements of the railway companies, extending both to the selection of the route and to the mode and cost of construction of the railway; the rate of fares to be taken; the number of trains to run; and numerous other restrictive provisions; which stipulations were necessarily attended by the consequence of withdrawing from the enterprise the element of reasonable calculation of return from inherent merit. It was impossible to estimate the profit of a railway—the course, the cost, the working, and the fares of which, were all to be prescribed by an external authority whose interests must in many respects be at variance with those of the company.

Another stipulation embodied in the contract, at the instance of the Court of Directors, and forming a leading feature in the arrangements, was, that the East India Company should be at liberty to appoint an ex-officio director at the Board, with a veto on the proceedings of the railway company. This condition was understood at the time to imply the appointment of an officer of high reputation and ability, who should aid the councils of the Board, and carry with him the weight of the authority of the East India Company; and in this view of it the stipulation was not objected to. But it was assumed that the ex-officio director thus appointed would impersonate their views; and it was never contemplated that the proceedings of the Board, at which he sat, would have to be submitted, first, to the Court of Directors, and afterwards to the Board of Control, and be approved by both authorities before they could be acted upon. Nevertheless, such has been the system adopted; and to this cause must be attributed much delay and complication which has necessarily attended the progress of the various undertakings in course of execution.

Among the other provisions in the arrangements with the East India Company were these: that the whole of the capital of the railway companies should, as called up, be paid into the treasury of the East India Company, who should also have custody of all the revenue of the companies when their lines were opened. The net receipts of the railways were first to be applied in relief of the East India Company's guarantee, in payment of the current interest, and any surplus to be appropriated, one half towards repaying the aggregate of interest advanced by the East India Company with interest, and the other to be the property of the railway company.

I have touched thus slightly on these points in the history of the Indian railways, because a knowledge of them is necessary to enable you to understand and to account for their past course and present position.

Under this system three principal companies grew up, one in each of the three Presidencies. The East India Railway Company, the contractors for the railway from Calcutta to Delhi and Lahore, in the Bengal Presidency; the Great Indian Peninsular Railway Company, the contractors for the line from Bombay to the Kristnat, to Nagpoor, and to Jubbulpore, in the Bombay Presidency; and the Madras Railway Company, the promoters of the line from Madras, across that Presidency, to Calicut, on the coast of Malabar.

These companies have now progressed so far on their course, as each of them to have completed and opened for traffic a section of their lines, one in each Presidency.

Of these, the Bombay line is at work for about 70 miles, but its course is such as hitherto

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to afford no fair test of its prospects. The Madras line is also open for about 70 miles, but it has been in work too short a time to admit of any opinion being formed of its results. Both these sections have, however, from the first more than paid their expenses, with evident capacity for a return in a short time exceeding the rate of guaranteed interest. The first section of the East Indian Railway to Raneegunge, about 120 miles, has been in work since February 1855, and though short in length, and by no means fully organised, has already not only paid its working expenses, but furnished from its traffic the means of repaying some 60,000*l.* on account of current interest to the East India Company, and its net receipts are understood at the present time to exceed the rate of guarantee of 5 per cent.

Besides these undertakings, the East India Company have entered into contracts with two other companies, the Scinde and the Baroda Railway Companies, but neither of them have any portion of their lines in operation.

From returns made to Parliament in the last Session, it appears that up to the 30th of April last, after deducting the interest paid to the railway companies, there remained in the hands of the East India Company the sum of 1,705,087*l.* 7*s.* 11*d.* of the railway capital.

My time has not permitted me to refer to the earlier returns (if such there be), nor to ascertain the present position of the two more modern of the five railway companies above enumerated; but, from inquiries I have made, I believe that the following propositions will be found to be substantially correct as to the three great lines, namely, the East Indian, the Bombay, and Madras companies (and the principle, I have no doubt, will extend to the other two railway companies), namely:—

1. That the East India Company (under the stipulation by which all the capital raised by the railway companies has been, and must be, paid into the treasury of the East India Company) has always been in possession of a much larger sum than the aggregate interest advanced by them under their guarantee.

2. As to the East India Railway Company, that the East India Company have now about 1,250,000*l.*, or thereabouts, of the capital of that company in their hands, while the aggregate amount of interest paid to that company does not exceed 600,000*l.*, or thereabouts.

3. As to the Bombay Railway Company, that the East India Company have now in their hands about 2,000,000*l.* of the capital of that company, while the aggregate amount of interest paid to that company does not exceed 220,000*l.*, or thereabouts.

4. As to the Madras Railway Company, that the East India Company have now 1,000,000*l.*, or thereabouts, of the capital of that company in their hands, while the aggregate amount of interest paid by the East India Company to that company does not exceed 150,000*l.*

5. During all the time that the railway capital has lain in the hands of the East India Company, it has been employed at interest, or with equal advantage, for the purposes of the East India Company.

Consistently with this state of facts, it is quite clear that, up to this time, not only have the railway companies not been a burthen on the revenues or resources of India, but that the East India Company has actually, during the period of seven years which has intervened since their establishment, been in possession through means of their capital, of considerable, not to say large sums, over and above the sums advanced for interest, which have been available for their own purposes. This state of things will continue at all times, so long as the capital of the railway companies is in course of subscription, and until their capital accounts are closed. The railway companies are always ready and willing to call up capital, in order to secure the guaranteed interest, and the East India Company, as their self-stipulated bankers, have at all times the control and use of the money subscribed.

These facts sufficiently bear out the first position which I assumed in my interview with you. The other proposition, viz., that the railways in India will not at any future period form a burthen on the revenue or resources of India, is one on which the existing evidence is not, from its nature, so decisive.

The only line hitherto open which has afforded anything like the approximation to a test of its results, is that of the East Indian Railway Company.

Taking the experience of the first section of that line, the revenue already realised will more than pay the guaranteed interest on the cost even of the first section, and that notwithstanding that hitherto the traffic on that section has been but little developed, the rolling stock has been limited, the arrangements imperfect, the working expenses comparatively heavy, the trade comparatively small. When the line is further advanced, and communication is open with the Ganges and the commerce of that vast district, there is no doubt that it will increase to a vast extent. But that is not all. The increase of revenue will be in a ratio much larger relatively to the cost than the increased distance, while the fixed expenses will relatively decrease, and this will be the case as each section opens. Moreover, the charge for interest on capital unproductive, while the railway is in course of construction, will also diminish in proportion as it opens. If the receipts of the first section pay the current interest, the receipts of two continuous sections will do more, and as the traffic develops by each extension, the revenue will extend not only to pay the current interest, but to accumulate a fund

fund towards repayment of the interest already paid. For example, while the Bengal line is only open to Raneegunje, the whole of the capital not employed in that section is unproductive, and the interest paid is a dead charge upon it. Thus, at present, the productive capital does not much exceed 1,000,000 £, while the unproductive is 5,000,000 £; but, as soon as the line is open to Rajmahal, the capital productive will be raised to 3,000,000 £, while the capital unproductive will be reduced to 3,000,000 £. It is true that, by that time, further capital will have been expended, and the proportion of productive and unproductive capital may not therefore have become materially changed, but this will not continue, because as the completion of the work advances the productive capital will gradually absorb the unproductive. But as the traffic develops on the extended line, it is only a reasonable and natural conclusion based on the experience already attained, that the revenue increased by the increasing traffic, with the expenditure reduced by being wider spread and by improved arrangements, will not only supply the current interest, but will provide a surplus above the guarantee, which at first as to the whole, and hereafter as to a moiety of it, will be immediately applicable by the East India Company, as a fund to repay the interest already advanced. This operation will be repeated as each section opens; the dead capital will decrease as the productive capital increases, and while the current interest will be provided out of the capital as heretofore, the surplus receipts will be accumulating in the hands of the East India Company (as the interest made on the surplus capital will or should have done), towards defraying any dead charge of interest advanced in excess of that receivable from the profits of the railway.

Thus the working of the arrangement between the East India Company and the railway companies is this. The East India Company grants a conditional guarantee, by means of which the capital is raised. In return for this guarantee, it stipulates for the custody of the railway capital. Out of this capital, it provides for the current interest, employing the balance for its own purposes; and it repays itself the money thus advanced, with interest, out of the revenues of the railway.

In discussing the subject, however, the possible contingency must not be excluded from view, that in the case of some or one of the railways, when completed, and in work throughout, the revenues from traffic may not, at the first opening, realise more than sufficient to pay the current interest. It is not reasonable to contemplate their falling short of this, because, the lines having been selected by the East India Company, and worked under their direction, they are not likely to be so worked as to be burthensome. Assuming the case contemplated to arise, and the capital account of the railway to have been closed, whatever sum shall have been paid by the East India Company up to that time, in the shape of interest, will form an advance by the East India Company to the railway company. Even in that case, however, the East India Company may be protected from actual pecuniary advance by an arrangement with the railway company, to leave in their hands, at interest, such a sum as may be necessary to cover the amount of interest paid. Or assuming that arrangement to be open to any objection or difficulty, the principal sum might form a portion of the money borrowed by the East India Company on loan. It is not probable that the amount would be large, and if the railway receipts develop as rapidly as the experience hitherto renders probable, the surplus above the guaranteed rate will probably more than provide the interest necessary on the dead charge, regarded as money raised by the East India Company. Let it be assumed, for instance, that the line to Lahore is completed at an outlay of 15,000,000 £ sterling, the capital account closed, and the railway company unwilling to allow the surplus capital raised to remain on loan, and that the money advanced for interest amounts to the improbable sum of 1,500,000 £. If the revenues of the railway should realise only 6 per cent., one-half of the surplus above 5 per cent. would be appropriable by the East India Company in repayment of back interest; and that sum would amount to 75,000 £, or 5 per cent. on 1,500,000 £, the debt assumed to be incurred on the account of that railway. But if the railways proceed on the scale of which the interests of India admit, and seem to render desirable, the great trunk lines in the three Presidencies will have opened and been in full work long before the supplies of capital constantly being paid to the East India Company on account of other railways in progress will have ceased. These funds will always be in excess of the drafts on them for the current outlay (as those of the present trunk lines have been and are); and will always extend to meet a large aggregate advance of interest on account of those companies whose capitals are closed. In the meantime, the traffic on the lines open will have developed, and the surplus receipts above the guarantee will form an available fund to provide the interest on a loan, if it should be found necessary to raise it, for railway purposes.

But while this is the immediate financial view of these transactions, there are broader and larger considerations involved in them, which sink the mere pecuniary question into insignificance. Let it be assumed that the construction of the trunk lines of railway in the three Presidencies should leave the East India Company with a dead charge of the large sum of five millions sterling, composed of interest advanced on capital unproductive during their construction.

The numerical force (if I am correctly informed) of the armîes of India does not fall short of 300,000 men; the yearly cost of the military establishment considerably exceeds ten millions sterling.

Can it be doubted that the direct saving to the East India Company in the economy of their military and administrative arrangements, through the introduction into the country of a system of locomotion, which would enable the East India Company to concentrate their forces on any one or more point at a rate of speed of 400 miles a day instead of 10, would

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far more than redeem a charge of 200,000 £ or 250,000 £ paid in annual interest on five millions sterling thus expended.

I do not enlarge on this point, because my knowledge on subjects of Indian finance, and arrangements generally, is not sufficient to entitle me, and the limited time at my disposal does not allow me to do so; while your information on all these subjects is consummate. But even if the economy thus involved were less certain and extensive, can it be doubted that, on a large view of the resources and revenue of India, both would increase under the influence of the railway system, to an extent which would far more than outweigh any moderate increase on the actual expenditure?

The fixed debt of five millions, which I have assumed, presupposes the outlay of capital imported into India from Great Britain, amounting to thirty millions and upwards, and laid out on that class of works most promotive of trade and commerce, viz., public highways. Can it be doubted that the revenues of India would be increased to the extent of interest on the smaller sum of five millions? But, if so, the great object will have been attained of attracting British capital into India to the amount of thirty millions sterling, at no present cost to the Indian revenue, with the ultimate certainty of great resulting advantages to the country.

But even these are narrow views of the subject. The East India Company derive an annual revenue exceeding twenty-five millions sterling from India; and surely it is not too much to expect that they should lay out some portion of that money annually in public roads, and not look for the means wholly to capitalists in Great Britain, accepting their assistance only to an extent that can be proved to involve actual pecuniary profit.

I now pass on to the question which was more immediately involved in the object of the interview sought with you by the Oude Railway Company, viz.:—Whether the East India Company ought to be called upon to extend the principle of guarantee to other companies than those embraced in their present arrangements?

It appeared to be considered as matter of doubt on the part of yourself and your colleague whether future railways should not be left to their own inherent prospects. I have given much consideration to this question, and my own mind has arrived at two main conclusions bearing on this point, which I may thus state shortly, viz:

1. That the railway companies, as individual enterprises, would be better without the guarantee of the East India Company, if its absence would secure them immunity from the control and restrictions imposed in the contract, and submitted to for the sake of the guarantee, assuming always that the capital could be raised without a guarantee.

2. That the East India Company derives a large benefit from the guarantee through the conditions which it enables the Court to impose upon the railway companies, and through the means which it affords of obtaining the necessary capital, and that it is neither their interest nor their policy to resign it.

In arriving at these conclusions, I assume that the restrictive stipulations in the contract submitted to by the railway companies are the price of the guarantee, and that if the guarantee were not given those conditions could not be exacted, but that the railway companies must be, as in England, free and unfettered.

I assume further that the interests of India require that the railway system should have full scope in that country, at the earliest period, and that there is no class of public works there which is of such primary importance as the establishment of roads through the country.

It is not necessary here again to examine very critically the cost of the guarantee to the East India Company.

I have already explained its nature; that it extends simply to an advance of interest by the East India Company, pending the unproductiveness of the railway; that the means of its payment have hitherto been found in the railway capital lying in the treasury of the East India Company; that this will always be the case until the railway in respect of which it is paid is completed; and, supposing that climax attained, so long as the capital of other railways to a sufficient amount is in the treasury of the East India Company; that immediately the railway is productive, its first receipts are to be appropriated in discharge of the obligation of the East India Company to pay current interest; that one moiety of the surplus receipts above the guarantee are also thenceforth applicable to payment of the interest theretofore advanced, and that that interest is to be repaid with interest.

It is obvious that there is nothing in these provisions, viewed as the price of the railways, burthensome to the East India Company, unless in the contingency of the revenues of the railways not paying current interest. That risk is undoubtedly undertaken by the East India Company, and is involved in the guarantee; but, in assuming that the railways are a work of corresponding advantage to India, I assume also that, if not constructed by a company, they must have been undertaken by the Government. But if the Government had undertaken the work on its own account, it must have provided the funds for the purpose, and, if so, it must have raised the money by loan, and found interest for the money so raised. Would the Government have been better by such an arrangement? In that case the East India Company, as the Government of India, would (if they could have raised the money) have had to provide the interest either out of capital raised directly for the purpose, on their own account, or out of the revenues or resources of India. Under the present arrangement, it is provided for them out of capital raised by others during the construction

struction of the line, and the first receipts of the line are no less charged with its payment now than they would be if the railways had been in their own hands.

It is true that the rate of interest charged against the railway is higher in respect of money raised through the machinery of the railway companies, than it would be if raised by simple loan; but that is a result due to the complex and artificial character of the guarantee, and which might be removed at any time by adopting a simple guarantee.

It must also be admitted that if the East India Company had decided on constructing the railways on their own account, their position would have been better in the event of the railway paying more than the guarantee, because in that case they would have been entitled to the whole, instead of a moiety of the excess. But this view has no bearing on the inquiry as to the burthensome quality of the guarantee to the East India Company under the existing arrangement. The surrender of the moiety of the surplus profits is a sacrifice by the East India Company if the line produce them, but it is only by the adoption of a principle of personal construction which they have repudiated on grounds of policy that this benefit could have been realised.

The cost of the guarantee to the East India Company therefore lies only in the risk of the railway not paying that sum in revenue. That is a risk which the East India Company must have borne if they had undertaken the work themselves. All the other provisions of the contract are to their advantage.

Let us now see the effect of the stipulations exacted by the East India Company from the railway companies, and examine how far they involve benefit to the East India Company, corresponding with the burthen of the guarantee, and how far on the part of the railway companies they amount to an adequate consideration for the guarantee.

The first stipulation secured by the East India Company is the choice and direction of the line and route of railway to the exclusion of competition, and the adoption of their own interests in preference (when they may happen to differ), to those of the railway company. This privilege has been considered in foreign countries so great as to induce the French and other governments to concede a guarantee of interest, or to give other equivalents, in return for it. In India the object is still greater, because it has enabled the Government to select political rather than commercial lines. But this is only a small feature in the restrictions imposed on the Indian railway companies. In the construction of the works the East India Company reserve the power to direct the most costly and most permanent material and work, instead of that which the more immediate interests of the existing speculators might prescribe. They secure the possession of the capital subscribed, and the revenue as received, and stipulate for a right to charge interest on all money, even though advanced out of the railway capital. They stipulate for the right to prescribe and regulate the fares of the railway, bargaining for themselves that their mails shall be carried free of charge, and their troops and stores at the lowest rates. They stipulate for the right to regulate the number of trains to be run, and the rate at which they shall travel; for the repair and maintenance of the road and works, and for the supply of such a plant as they may consider necessary, and for the liberty to execute the repairs themselves, and charge the railway company with the cost of them, if not executed when required, and to their satisfaction. They stipulate for the right to regulate and audit the whole of the railway expenditure—to prescribe the charges that shall appertain to revenue, and to allow only such expenditure as they shall certify. They secure all these provisions by the appointment of an ex-officio director, and assume and exercise a right of supervision and control both in London and in India, not only by the Home and Local Government, but by officers representing them in both places. Finally, they stipulate for the right to purchase the railway at the expiration of 25 or 50 years from the date of the lease either for money or an annuity.

It is obvious that these stipulations not only involve great advantage to the East India Company, but leave the railway company tied and bound in their hands. The power in all things is in the will of the East India Company; the executive only, in the hands of the railway company, as the agents, to do their pleasure. Could the East India Company substantially have had more power if they taken the construction of the railways upon themselves? Could they have obtained the money more easily, or have paid a less price for it? Finally, could they by that or any other mode have attained the outlay of so many millions of British capital, under a simple obligation to repay it in the form of an annuity for 99 years?

On the other hand, is it possible that any association of capitalists could be found to undertake the construction of such works at such a distance, and under such circumstances, without a clear and satisfactory guarantee, independent of all risks, of such a rate of interest as would be an adequate return for the capital so employed. The ingredient of estimated profit is by the nature of the arrangements withdrawn from the undertaking. What remains but the guarantee as the inducement, not to say the justification, for the venture? It is true that there is an expectation of profit beyond the rate of guarantee, because the parties investing in the undertaking trust to the East India Company as a government, to exercise their power with reason and equity, and to the prospects of the railways, as possessing inherent merit, ensuring profit, even under unfavourable circumstances. But it would be unreasonable to expect that the confidence of any shareholder in the East India Company, or the railway system, or both, would be sufficient to induce him to risk his money in an undertaking every productive element of which was under the control, and in the hands of a body whose interests were not only not identical with his own, but on some points absolutely conflicting with them.

Upon all these grounds, and many more that might be stated, it is clear that it would be

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unreasonable to expect that railways in India should be undertaken on the scale and subject to the conditions which appear to be considered desirable, without the guarantee. It remains to say a few words upon the question, whether the East India Company should be prepared to relinquish the control and stipulated advantages embodied in the existing system; and whether, if willing to do so, capital for future railways could be raised without a guarantee.

The first proposition thus enunciated is one peculiarly for the Court of Directors. Assuming companies willing to embark in railways in India without a guarantee, it might be well worthy of the consideration of the Government whether they should not be permitted to do so. If they did, it must of course be stipulated that the companies should be free to select their own lines and route; prescribe their own mode of construction; stipulate for their own rates of fare; be paid alike by the Government as by individuals for the carriage of mails, troops, and stores; receive their land free of cost; and be the guardians and controllers of their own capital and financial arrangements.

Assuming the East India Company to be willing to leave the railway companies free on all these points, provided the railway companies would relinquish the principle of a guarantee, would the railway companies be better or worse by the arrangement? In considering this question, let us see what the railway companies gain by the guarantee. The guarantee secures them a certain rate of interest until the line is open, with power then and thenceforth to relinquish it, and receive back their capital. But no association of capitalists would be found to subscribe their capital for a railroad in India without first satisfying themselves that it would yield a much larger rate of interest than any guarantee hitherto conceded. There exists no authority sufficiently certain to satisfy the British public of such inherent prospects in any line of railway in India, and therefore it must be assumed that the project of obtaining money without the guarantee must at once be abandoned. If the fact could be established, it is obvious that the company would in every respect be better by the withdrawal of the stipulations of the contract. Having selected a profitable line, they would then invest their capital as paid up (calling it up only as the necessity arose); they would pay the current interest out of the capital so invested; they would execute the line with all rapidity, and on the result the interest advanced pending construction would be a simple and not a heavy addition to the capital; they would construct their works and conduct all their arrangements on the simplest and least expensive principle; and they would work the line in such a manner, and at such rates, as regard to their own interests prescribed.

In all these respects their position would be far better than it is at present. The line would be constructed much more rapidly; the cost would be reduced greatly; and the whole control of their own interests would be in the hands of their own administration.

But it is in vain to speculate on this point, unless the money necessary for the purpose could be raised without the guarantee, and a little consideration will show that this cannot be accomplished. The capital for Indian railways is required on a large scale, and with promptitude, independently of the periodical fluctuations of the money-market. Under the present arrangements it is derived from a class of persons who are not essentially speculators. The stock has for some time been sought for permanent, in many cases for trust, investment, and this is increasing daily. It is the guarantee that produces this effect.

The portion which would be subscribed by speculators without the guarantee would, under any circumstances, be insignificant; while, on the other hand, that obtainable, if free scope be given to the disposition to treat the stock as in the nature of a government security, is almost unlimited. The Government of India, therefore, if the railways are important to them, are the parties most interested in giving the guarantee, as, without it, it would be vain to hope that money would flow from England into India as it has done, and is at present doing, as freely as it is called for.

But it may be urged, that the time has not arrived for considering the necessity of encouraging further railways in India. The three trunk lines are not complete, and there are two others in progress; these will require a large outlay, and it has not yet been ascertained with certainty that they will be profitable.

If there were any risk of the new railways interfering with the subscription of the capital for those under contract, it would be matter of grave doubt whether they ought to be now encouraged. Or, if there were any serious doubt of a value in the railways to the revenues and resources and material interests of the Indian Empire equal to the burden of the guarantee, the same considerations would arise. But the time is past for the former, and I assume that there is no doubt, in reference to the latter point, that there are numerous lines of railway the construction of which, whatever their immediate results to the companies undertaking them, would have the effect of enhancing the revenues and resources of India to an extent far beyond their cost, in the form of an annual guaranteed interest. As to these, it appears to be a most desirable object to secure the capital while it can be procured, and to employ it to the extent, first, of making the necessary surveys and arrangements, and afterwards at such rate of speed as is consistent with the progress of the existing trunk lines now in hand, in the construction of the new lines. The advantages of such a course appear to be beyond a doubt. Already, even under the adverse circumstances of a rate of interest hitherto unexampled, there is a disposition to invest moneys freely in distant and uncertain speculations. Undertakings in which Great Britain has no interest, but which are likely to be attended with results menacing to her welfare, are only awaiting a fall in the money-market to absorb our resources. Contracts have been entered into for railways in Russia, at an outlay of some thirty millions sterling. France is about, in the course of the year, to enter

enter upon an outlay of eight to ten millions sterling for further railways in that country. English capitalists have in immediate contemplation railways in Austria, to the extent of many millions. In Spain and Portugal large outlays of a similar nature are alike in preparation. Expenditure amounting to many millions is under immediate discussion for banks and railways in Turkey; and similar works in our colonies and other distant countries are in contemplation. Nearly if not all these undertakings are encouraged by the prospect of a guaranteed interest, and most of them will be greedily sought by British capitalists, so soon as money becomes more plentiful. Can it be doubted, that it is the policy and interest of the nation and of the East India Company, to anticipate these proceedings by taking up all money which can be profitably employed in our own Indian empire on works of manifest public importance, rather than to allow it to be absorbed in undertakings of questionable value to the speculators, and still more questionable result to the interests of the nation? But even still stronger grounds exist for this policy in the state of political events affecting our Indian dominions. It is said by some persons, that India in its internal position is free from risk of events making the existence of first-class roads essential. Recent experience has proved the contrary. But if it were otherwise, the events of the last few months show that her territories are liable to be menaced from without. It is unnecessary to enter on the contingency which may make the power of moving and concentrating troops with rapidity a most momentous object. Experience has shown that the people of India, however quiet in time of peace, are ready for an outbreak under any menacing state of external appearances. Who can say how soon such a state of things may develope, or what may be the value of lines of railway traversing and intersecting the country?

It is for the East India Company, as the Government of India, to consider whether they should be backward in undertaking and encouraging these great works, and lose the opportunity of securing the capital for the purpose, while it is open to them.

I have to apologise for troubling you at so much length, and have only to plead the vast importance of the subject as my excuse for doing so.

I have, &c.
(signed) *Charles Freshfield.*

P.S.—I propose to send a copy of this letter to the directors of the Oude Railway Company.