MADRAS RECORD OFFICE

Government of Madras

PUBLIC DEPARTMENT

G.O. No. [illegible] Pres. [illegible]

Dated [illegible] 18[illegible]

Not to be folded or roughly handled

No. 87. Read the following letter from Colonel A. COTTON, Commandant of Engineers; to T. PYCROFT, Esq., Chief Secretary to Government, dated

SIR,

I have the honor to transmit a memorandum, on the proposed Railway in the Southern Mahratta country, in obedience to the orders of Government dated 13th Sept. 1858, No. 1878.

I have in many late papers respectfully requested the earnest attention of Government to this fundamental question, the question of how money should be expended for the material improvement of India.

This proposal of the Bombay Government seems to bring us fully to an issue on it.

Will three millions expended on a Railway from Hyderabad to Beitkul, relieve that tract of country from its principal material evils? on the one hand; or on the other, will it, as I think I prove, be the most effectual step that could be taken to prevent that tract from ever obtaining the essential benefits of cheap production and cheap transit?

Most certain it is, that if the latter is the effect of spending money upon a Railway there, every additional million that is spent in this way, is an additional obstacle thrown in the way of the relief of India generally from its main material evils! The Railway interest is already very considerable, and its very existence depends upon its succeeding in depriving India of cheap transit, and it is absurd to expect that its influence will not be courted to resist that which is certainly directly antagonistic to it. And so also with respect to the other great fundamental point of finance.

Will this three millions if spent on a Railway afford a great and important relief to the at present insolvent state of the Government? or will it add a further permanent burthen of £150,000 a year? (for I doubt whether this Railway will pay its expences.)

This Government has in its most important Despatch of the 15th May last clearly declared the conclusion, which its ample experience had brought it to, that expenditure on Hydraulic works was extraordinarily remunerative, and would afford a complete relief to the finances.

Such a declaration from the only authorities in India who could give it from their own knowledge and experience, seems to me to be of the very first importance, but not second to it I think will now be as decided a protest against the proposed extension of the railway system to the Southern Mahratta country, if, as I cannot but hope, the facts and arguments of this Memorandum are sufficient to satisfy them, that my conclusions are in the main sound, as to the effects of such a work in that locality.

I look upon this opportunity as one of the most valuable that could be offered to India's authorities. A decided stand now made will certainly secure at length a real examination of this vital point, and I am quite sure nothing more is required than a real examination to satisfy every body who is willing to be satisfied about it.

The late Secretary to the Government of India in the D. P. W. was certainly right when he protested against "adverse discussion" on the Railway question; nothing but its suppression could secure the further expenditure of millions on works, which would shut out India from cheap production and cheap transit, and thus effectually prevent it from meeting other lands on equal ground in the markets of the world.

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*Memorandum of Colonel A. Cotton on the Bombay Minutes of the Members of Council on a Railway from Beitkul Harbour to Hydrabad, prepared in obedience to orders of the Madras Government,* 13*th September* 1858.

The order transmitted to me with these Minutes so clearly requires my explicit opinion on this subject, that I trust I shall be excused in stating opinions so entirely opposed to those expressed in all the Bombay Minutes. I regret that I should differ so entirely from those so much superior to me both in office and knowledge of other matters, but as my whole attention has been given to Engineering matters, and especially to this subject of communications, and I have had such peculiar opportunities of investigating the subject both from the information of others and

from that I have obtained from works with which I have been more or less connected, I am in hopes that I may be allowed to give an opinion without presumption on such a matter, even though contrary to the views held by those who have not such proffessional knowledge and experience.

I may premise that all these Minutes are written on the grounds, as if already established, first, that Railways in India will be profitable speculations; 2nd, that they will be more profitable upon the whole, that is, directly and indirectly, than any other way of spending the same money; 3rd, that they will answer the purposes of the country as communications, that is, that they can carry the great traffic of the country, that they can do what is required for that purpose both in respect of goods and passengers, and in respect of cost and quantity.

The Minutes take it for granted that Railways are such communications as will meet those three evident demands. What I beg to submit is, that they thus, in fact, beg the whole question.

This is certainly in accordance with what has been done by others respecting Railways. They were entered upon without the slightest investigation on either of the two latter points. On the first, indeed, there was a sort of enquiry, but no "adverse discussion" was allowed, and in consequence the calculations were never tested, and in my opinion, which is supported by present results, they would not have stood any test. I have not seen even a calculation of the cost of working a Railway in India, and I have every reason to believe that there was no careful investigation of this fundamental point. I have not the original papers about the Bengal Railway with me, but to show how loosely the whole subject was handled, I may mention that in the calculation of the present cost of transit by the river, two of the Items allowed were Interest and Insurance on an average value of goods at £40 a ton, for the whole traffic, the great mass of the traffic being grain, &c., value from £3 to £5 a ton, so that probably the average does not exceed £6, thus making a miscalculation in these items of 7 to 1.

As to the great question whether Railways were the communications that were suited to the particular circumstances of India generally or of certain parts of it, it was never, I believe, raised at all.

It seems to be a peculiarly suitable time to examine these points, so intimately connected with the material welfare of India, now that actual results of the working of some Railways in each Presidency afford in some measure sound grounds for our conclusions.

The question immediately before me seems to be; Is it expedient to construct a Railway (of course for high speed like those already constructed) from the proposed harbour of Beitkul to Hyderabad?

I conclude that this question may be fairly divided into the three above proposed, *viz.*—

1st. Will a Railway answer as a speculation?

2nd. Is it a more beneficial way of spending money on that tract of country than any other?

3rd. Will it answer its purpose, that is, will it carry such quantities and at such cost as the country requires?

The comparison of such a communication with other kinds, *viz.*, with common roads, light railways, and waterways, will necessarily be examined in the course of these enquires.

With respect to the 1st question, in one of the Minutes, it is given as an opinion, "that it would be a very profitable undertaking as regards the Company who carry it out," and in another, that "of the financial * * * value of it * * * * there can be no doubt."

Matters have now so far advanced that we may best form a judgment on this point by the actual results on the lines now in operation.

In Bengal the line from Calcutta to Burdwan, 120 miles, has been open 3 years. I give in the appendix returns of receipts and expenditure up to the end of last year.—They were

| | Rs. |
|---|---|
| For 1857, Receipts..... | 14,50,000 |
| Expences..... | 5,90,000 |
| | 120)8,60,000 |
| Profits per mile..... | 7,000 |



I don't know exactly the cost of this line up to the present time, but I believe it is about 1,20,000 Rs. a mile, including rolling stock, &c., on which the *apparent* profit has therefore been 6 per cent.

But I must observe that the publication of the accounts in this way, though true in the letter, is calculated to convey an entirely false impression of the financial results; the two great items of the current expenditure on Railways, *do not appear in them, viz., Depreciation, and Repairs.* For the first nothing at all is allowed, and for the latter a mere trifle, because there is not an old locomotive, or carriage, or rail on the line; everything is new. *It is therefore quite certain that this 6 per cent does not represent the true profits on this line.* What the actual cost of repairs and renewal will be in India we have no positive data, we can only form an estimate of it from such data as we have.

By a very complete account of the expenses, &c., of all the Railways in the State of Massachusets in the United States, the best Railway accounts I have been able to obtain, the average cost of repairs and renewal of the *road* only on 1367 miles, is 2½ per cent, and the *total* locomotive expence is 1½ per cent, so that adding for rolling stock, the total cost of repairs and renewal cannot be much under 3 per cent there.

The Report from which this is taken adds, "This experience of 9 years working cannot be very flattering to railway proprietors. The expence of keeping up the track, that is, of maintenance of way, has greatly disappointed expectation in America, as it has here" (in England). I should think, considering the great heat and heavy rains of Bengal, the cost under these heads will be greater than in Massachusets. Allowing the same, it reduces the profits to 3 per cent.

Now in considering this result, we must remember that this, the first 120 miles out of Calcutta, is without any comparison the line of greatest returns of any line that could be formed in India. Nothing like the great mass of passengers that go for a moderate distance to and from the most wealthy city of India, can be found at any distance from the great cities.

This is therefore an extreme case.

On the Bombay line I have not the traffic for any length of time, but the traffic receipts for the last half of June 1858, were 330 Rupees per mile open (130 miles) or at the rate of 8,600 Rupees per annum; 9½ per cent if the road has cost 90,000 Rupees, but I have no statement of the actual cost. I cannot however, I believe, be very far wrong in that sum. The per centage of expenses upon gross receipts was, in 1857, about 47 per cent, allowing the same for 1858, it will leave for profits, just 5 per cent. This line is like that of Bengal, it is the first 130 miles out of a great city, and the accounts include no sufficient sum for repairs and renewal, in consequence of everything being new. But this calculation also omits the cost of the Bhore Ghaut, I hear about 80 Lacs, which would add about 60,000 Rupees a mile to the cost of the whole 140 miles of which the road will then consist; and the above profits on 150,000 Rupees a mile would be only 3 per cent, and deducting from this 3 per cent, for repairs and renewal, there would remain no profit on this, one of the great lines, the first 140 miles out of one of the Capitals of India. If the cost of the Bhore Ghaut is distributed over a greater length of line, then we must allow diminished receipts; for the average receipts of 400 miles, for instance, from Bombay, cannot equal the average of the first 130. On the Madras line of 96 miles out of Madras, the present receipts are on an average about 90 Rupees a week or 4,700 Rupees a year, 7 per cent on 70,000 Rupees a mile, and allowing the same proportion of expences as last year the net profits would be 3¼ per cent, and deducting here also 3 per cent for renewal and repairs, ¼ per cent.

It is, in my opinion, impossible to mistake in the conclusion to be drawn from these actual results on three different lines, immediately adjoining three of the capital cities of India.

It is commonly said that the traffic will increase as the lines extend. It will undoubtedly increase on the *part now worked*, but *the average of the whole* will diminish. It cannot be imagined that the traffic on the 2nd and 3rd 100 miles from a capital will not be greatly less than on that of the 1st, and therefore if the whole of such traffic were added to the 1st, it would not very greatly increase the average, but in point of fact by far the greater part of the traffic of each portion will be local traffic, and will not affect that of the other portions. Of course, up to a certain distance, the average traffic will increase, because an extremely short line will not draw the whole traffic even of the tract through which it passes, but it is impossible that the average of 500 miles from a capital can equal that of the first 100 miles.

I therefore submit that these results are alone quite decisive as to the question of great railways being profitable speculations in India, while in its present state of wealth, and consequently that we have far stronger proof that on the particular line here proposed, not leading to a capital, even anything like interest for the capital can be obtained.

Further, we have the results in England. The net profits, according to the returns, are now just 4 per cent on the capital, and the average cost about £35,000 per mile. Certainly the average cost of Railways in India will be only about a qnarter of those in England, but if we compare the enormous disproportion of wealth in the two countries, it is also certain that nothing like one quarter of the number of travellers could afford to use Railways here at English charges. We cannot be wrong, therefore, in concluding that throughout India Railways will not make such profitable investments as in England.

Again, in Massachusets, where the average cost was only £9,000 a mile, the profits were 6¼ per cent, and the wealth of the community there is of course many times that of India. Also the value of money there is much less than in India, and the £9,000 a mile represents a less capital than 90,000 Rupees invested in India.

I must also observe, that there is great doubt thrown upon English accounts, as there must be till there are independent Government Inspectors appointed to examine them. Almost all the lines are making very small dividends, some, as the Great Western at this time, none at all, and of course, in such a state of things, there is a strong bias on all concerned to put as much as possible of the expenditure to the item of new capital, and also to have large sums under the head of unadjusted accounts, both which must necessarily cause considerable doubt as to the reality of the sums set apart for dividend.

Thus, the following railways have added these sums to their capital account in the last half year;

| | £ |
|---|---|
| London and North Western | 454,000 |
| South Western | 225,000 |
| Great Western | 62,000 |
| Brighton | 35,000 |

And the following are outstanding accounts.

| | |
|---|---|
| London and North Western | 469,000 |
| Manchester and Lincolnshire | 258,000 |
| Lancashire and Yorkshire | 230,000 |
| Great Northern | 143,000 |

While such enormous items as these appear in accounts which are not inspected and publickly reported on by Government Officers, there must be great uncertainty that the present dividends will be supported.

By a letter in the Railway Journal, 15th May 1858, it appears that 20 millions have been added to the capital of the Great Northern in 10 years; that while the gross receipts had increased by £730,000, the dividends had fallen from 10 to 4¾ per cent, the goods traffic having increased from 900,000 tons to 5,000,000. Of course no other possible conclusion can be drawn from this than that even after charging £20,000,000 to capital in ten years, the increase of goods traffic has still caused an enormous loss. Without, therefore, a strict inspection of accounts by officers publicly responsible and totally unconnected with any individual Railway, we cannot be certain that current expences are not charged to capital. From all the imformation I have been able to obtain, I have myself no doubt that the real profit on English Railways is considerably under 4 per cent.

I must also particularly notice the fact above stated, which is common to many English Railways, *viz.* continual increase of receipts with a constant diminution of dividends. There is, of course, also a strong bias in all concerned in order to keep up the appearance of prosperity, to show an *increase of receipts*, and hence to carry at losing rates, and that this is done, is certainly proved by the above fact. Consider also the following admission in an editorial in Herapath's Railway journal, the great advocate for Railways, "*In many Railways we have noticed that during the last half dozen years (and in some cases longer) they have spent each half year*" (as Capital) "*sums about as large as the profits paid away in dividends*".



The Consulting Engineer of the Madras Railway showed in his last half yearly report that there had been a clear loss both on 1st class Passengers and on all goods, though the latter are carried at an average rate of 10 P. (1¼*d*) per ton per mile, and though nothing is allowed for depreciation, and of course only a small proportion for repairs; as all is new there also. The results of the Madras Railway up to the end of 1857, were as follows:—Length 81 miles, cost without rolling stock, for a single way, 53,000 Rs. Receipts 104,000 Rs. for the half year, expences 56,000 Rs. or 54 per cent, which, on a supposed total cost of 70,000 Rs. a mile, would be a *nominal* profit of ¾ per cent, or for the year 1½ per cent. and allowing 3 per cent for renewal and repairs a loss of 1½ per cent.

It seems to me impossible that there can be any question, after this investigation, as to the line from Beitkul to Hyderabad being profitable. If none of the lines immediately adjoining the three capitals pay even merely the guaranteed interest, we have the most certain grounds for concluding that this line, in an out-of-the-way part of the country, will not do much more than pay its expences, if it does that. I don't see how we can be mistaken on this point. These data are surely quite sufficient to establish it.

Before proceeding to the other two points, I may here properly refer to a minor one started in these Minutes, *viz.*, as to how a line can be laid out, so as not to compete with the Bombay Line. It seems to me most certain that whatever line is laid to Beitkul must be a directly competing line with that to Bombay. Beitkul will become a large port and city, and will, even with a Railway, draw off a very large proportion of the traffic both in goods and passengers from the Bombay Line. I cannot see how there can be any question about this. Any line running from a certain tract of country to a port must compete with all other lines in that part, whether it runs nearly parallel to them or perpendicular. The only question with the producer and the merchant is, how he can get his goods cheapest to the port; and the passenger traffic must follow the line of the goods traffic in India, and it does not matter to them whether the line runs to a port due north, or due east or west. Thus, the North and South Canals at Madras compete directly with the Railway, although they run perpendicular to it, because the people of Madras don't care whether their consumable articles come from districts West of Madras, or North and South.

The proposed line, therefore, while it will not yield profit itself, will undoubtedly greatly diminish the traffic on the Bombay line.

My second question is, Is this Railway a more beneficial way of spending money on that tract of country than any other?

Surely this is only a question of common sense. The grand object is to promote the material improvement of the country, it is for this that Capital is spent on Public Works. Surely if we are going to spend a million on a certain tract, we should all conclude that we had made a great mistake, if we afterwards discovered that, as we had spent it, it had only yielded 1 per cent of total benefits, while a more judicious mode of spending it would have yielded 100 per cent.

I append to this Memo: a report on the traffic on the Bengal Railway, with some remarks I made upon it, at the desire of the Lieutenant Governor of Bengal, together with a comparison of the actual cost and results of that railway and an estimate of those of a canal on the same line. I give this as a striking illustration of the effects of taking a work in hand without properly examining this point. From this it will be seen that there is good ground for believing that even on the present traffic there would be a saving of 15 lacs a year, taking together the profits to the shareholders and the diminished cost of transit to the public, and probably, including the new traffic that would be produced by the lower rate of transit, not less than 25 lacs a year, had a canal been constructed on this line instead of a railway, and that had the same money that has been spent on this 120 miles of railway, been spent on waterways, it would have been ample to provide all Bengal with a complete system of such waterways of several thousand miles, conveying both passengers and goods at ½ or $\frac{1}{10}$ of the railway rates.

I cannot but think this is a sufficient example to warn us against entering upon such an expenditure as is now proposed without first examining the matter in this point of view. What possible object can there be in spending money upon the country in a way that will yield 1 per cent, if we could spend it in another that would yield 100? and of course we are liable to do this if we do not first make enquiry.

Even if it were settled that the most profitable expenditure would be on communications, it would remain to consider on what kind of communications in that particular tract of country; for instance,

Whether on Common Roads,
Light Railways,
Heavy do.
Canals,
or Rivers.

It will be sufficient for our present purpose that for the cost of a mile of heavy railway, we might have

16 miles of Road,
10 or 15 of Light Railway,
15 or 25 of Canal,
or 25 of improved River Navigation.

Now surely this is a real question. Tried by the test of direct and indirect profits, which I am convinced is the only true test of such expenditure, nobody could doubt that any one of these works would be many times more profitable than the same money expended on a heavy railway, in the actual circumstances of that tract of country. And I must again observe that no Road or Railway can carry the *quantity* required on a Main Road in India.

But there is also the question of Irrigation, particularly as that can be combined with navigation in the same works. Suppose that 400 miles of railway were to be laid at 80,000 Rupees a mile, costing 3¼ millions sterling, and that for the same money at 10 Rupees an acre, 3¼ million of acres could be irrigated. The cost per acre in Rajahmundry is only about four Rupees; and with respect to the value of the increase of produce; Captain Meadows Tayler shows that in those countries, the ryots water their lands at an average cost of 27 Rupees an acre per annum, showing that the value of produce must exceed that. In Rajahmundry we reckon an increase of 16 Rupees on one crop. At this latter rate, the increased value of produce on 3¼ million acres would be 500 lacs a year. But this would at the same time provide, probably, at least 2000 miles of canal navigation, besides connecting, perhaps, as much more of navigable rivers. Can there be any comparison between the benefits to be derived from the money so expended and those of the same sum expended on a railway, and what can possibly be said why a railway should be constructed in preference?

As I have quoted the case of the Bengal Railway, so also I may mention that of the Bhore Ghaut. It is said to cost 80 Lacs; the direct distance is about six miles, but it is lengthened to 13 to obtain the required gradients. Now compare the results obtained in this way with the same sum to be expended on Irrigation from the Kistnah and Godavery. The results there will be 20,00,000 of acres irrigated, and more than 2,000 miles of navigable Canal and river. The increase of produce alone will be on an average of 20 Rs. an acre, including some two crop land, 600 lacs a year, besides 2000 miles of communication conveying goods at 1 pie a ton a mile.

I cannot but believe that when these things are pointed out, it will be acknowledged that in future they warn us to consider this question; Whether under the present circumstances of India it is wise to spend money in one way rather than another? This one Ghaut has saddled India permanently with a charge of four lacs a year, while the same money might have certainly yielded a relief of 40 per cent. or 32 lacs a year to the finances, and have left an enormous amount besides in the hands of the land-owners. Were India like England, overloaded with wealth and covered with almost every kind of public works, it might be a question whether we might not amuse ourselves with spending three quarters of a million upon six miles of Ghaut, but while the country is so poor, almost entirely without Public Works of any kind, and insolvent in its finances, I must insist upon it that the question whether we are going to spend our money to something like the best advantage, is an essential one in every proposed work. Whether the work we are setting about will, like the Bhore Ghaut, be a great addition to the burthens of India, or whether like the same sum spent in the Hydraulic Works for Irrigation and Navigation in Rajahmundry, Masulipatam and Guntoor, it will be both an immense relief to the part of the country improved by it, and at the same time not only provide its own interest, but also afford a very large relief to the finances of India, already at least 10 lacs a year, and there is every reason to believe when the works are completed, much more than half a million sterling a year.



I come now to the 3rd question I have proposed, *viz.* Will this Railway answer its purpose? that is, will it carry such *quantities and at such cost* as the country requires?

Is a Railway the kind of work that will effectually carry the great traffic of a country?

This I urge is *the* question. Not—Will it carry a small portion of the passengers and goods that ought to be moved at a high speed and a high price, and that only at the cost of taxing the country in other ways to pay for this advantage? From the data and calculations above offered, I conclude certainly, that supposing on the 350 miles now at work at Bombay, Calcutta, and Madras, 2½ millions sterling have been spent, and that the bona fide profit does not on an average exceed 2 per cent, there is already a clear addition to the burthens of India of 7½ lacs a year, *which must be paid by additional taxes of some kind.* And every additional million, as it is expended in such works at a greater distance from the capitals, must entail a greater loss. On the 30 millions already guaranteed, we cannot suppose less than an average loss of 3 per cent, or nearly a million sterling, thus doubling the previous average deficit in the finances of India.

I return, therefore, to the question I propose myself.

Let us on this point go upon the same safe ground as in examining the former questions, *viz.*, the results on the Indian lines already open.

First, the Calcutta line. The total number of passengers per annum is something above a million, but they travel, on an average, only about 30 miles or a quarter the length of the Road (vide appendix A,) so that the average number travelling the whole length is 2,50,000 or 800 a day, on the first 120 miles out of the chief city of India, on the main line leading to the interior. From the vast numbers who travel in the populous parts of Indiaeven without any facilities, we cannot be wrong in supposing that on such a line as this, if they were carried cheap enough to meet the actual necessities of the people, this is not a *tenth* part of the number that could and would travel along it. On one of the four main approaches to Madras, 3,000 a day travel on one of the main roads. In Tanjore, away from any great city, 1,200 *men* a day; over a bridge three miles from Trichinopoly, a city of 100,000 inhabitants, 20,000 people a day pass. We may confidently conclude that if on those lines there were cheap facilities for travelling, these numbers would be greatly increased. I cannot think, judging from these and many other such facts, that less than 10,000 would travel on the first 120 miles of the Great North Western Line out of Calcutta, if they could be conveyed at prices suited to the state of the country.

On the Madras line, the number is 250 per day on the average of the whole line, and the Consulting Engineer says in his report dated 15th December 1856—"If Mr. Fletcher will take a trip any new moon on his own Rail, he will find occular demonstration to the contrary. He will find many travellers of both sexes, *but very few of them on the rail*, though the charge is reduced to 4 pie a mile." Again—"how does he account for all those crowds of people walking or driving in bullock carriages along the road to Trivelloor on occasions of festivals. The Railway authorities are prepared to give and do give any amount of special accommodation on those days, yet the people walk. They give them the means of going and returning the same day, yet they walk 26 miles and back, and probably lose three whole days in doing it."

Again, "the rate (4 pie) is altogether too high. It is too high, whether we consider the condition of the people, the value of money, or the cost of the line." Again, "the mass of the people do not travel on the line, yet they do travel—on foot and in bullock carriages." Again, "The actual results are notorious. As a rule none but the wealthier classes of the native community have travelled by this Rail. On all occasions of feasts at Trivelloor, which lies close to the Rail and at 26 miles from Madras, *a common and very inferior road*, running nearly parallel with it, has presented to the Railway officials the unsatisfactory spectacle of *thousands* of people, some in bullock carriages others on foot, passing to and fro between that town and Madras." All these quotations are not from opponents of the Railways, but from one of their strongest advocates. Colonel Pears wrote a book two or three years ago, strongly advocating Railways as the works which were best suited to the country.

That is, the Railway so far from accommodating many who could not travel before, carries only a *small proportion* of the numbers of previous travellers.

On the Bombay line the numbers were 2,000 a day, and as the average distance travelled was 24 miles, or rather more than a quarter of the whole length of the line, the average number for the

whole distance was about 550 a day, of which the 1st and 2nd class together were only $\frac{1}{20}$th part, or about 30 a day.

The results of the Bombay line up to the end of 1857 were, length 88¼ miles, of which double 33, single 55¼ miles. Average cost 91,000 Rs. a mile. Receipts per mile 4,000 Rs. Expences 1,900, *nominal* Profits 2,100 Rs. which on 91,000 Rs. gives per annum 4¾ per cent, and deducting from this 3 per cent for Renewals and Repairs, it leaves 1¾ per cent for the probable real profits.

Captain Rivers, the Consulting Engineer's remarks on this, are; "the ordinary traffic for this half year is 21,000 tons. The Railway had, at the close of this report, been open more than 18 months to the foot of the Ghauts, and yet on 89 miles there is shown an average of 60 tons each way daily, a traffic insignificant considering either the trade of Bombay or the cost of the line or the expectations which Government and the originators had in constructing it." But this remark supposes that the 21,000 tons were carried the whole length of the line. Probably they were not carried half of it, so that the average quantity carried along the whole distance could not have been 30 tons a day each way, or at the rate of under 20,000 tons per annum, a quantity insignificant indeed on the only land line leading into one of the Capitals of India, and had it been 50 times as great, or 1,000,000 tons, which a communication on such a line ought to carry, it would still be of no consequence, *while the goods are carried at a charge only a shade below that of the old means of transport.*

The remark of the Bombay Government on this is "the returns continue to show that the Company have succeeded in diverting only a very inconsiderable portion of the goods traffic of the interior, and strengthen the opinions of Government that the present rates operate injuriously to the Company's interest." But this supposes that the Company *could afford* to carry cheaper than it does, of which we have no proof. It is certain from the lowness of the profits, (probably not more than 1¼ per cent) of which by far the greater part must be derived from passengers, that the profits on the goods even at the present rates, are insignificant, but it is much more probable, that on this railway also (as the Consulting Engineer has shewn to be the case in Madras) there is an actual loss in the goods traffic. The fault is not in the managers of the Railway, but in the apparatus itself. After all this enormous expenditure, goods cannot be carried by it so cheaply as by the old means, without allowing anything for interest.

Compare these quantities carried by the railway on all the three most important lines in all India, the principal entrances into each of the three capitals, 20,000 to 30,000 tons a year on each, with the 150,000 tons already carried on the Coconada Canal, though it is hundreds of miles from any great city, and has not a town of more than 20,000 inhabitants any where near it, and though the supply of boats is so far from keeping pace with the demand, that the charges are three times as high as they need to be. There are no discussions there as to why the goods are not carried by the canals in preference to the old modes.

I must especially notice the utter insignificance of the number of 1st class passengers, those for whom all this enormous expense has been incurred; in Calcutta the average for the whole length of the line is 15 a day, in Madras 3. Now we may safely say that, excepting these, almost the whole of the remainder would prefer, if they could obtain it, a lower speed and lower charge. They only travel in this way because they have no choice, therefore speed is not a benefit to them, but because necessarily united to a high charge, a real loss. Probably nine-tenths of these travellers if they could, would travel at half the speed, and half the charge.

I must also notice that after all this expense has been incurred, even the proposed object is not attained, *viz.*, high speed. These railways are all worked at from 10 to 18 miles an hour less, after all, than the speed at which the Hudson River is worked by steamers. The reason is, that after the expense of construction has been incurred, it is necessary, in order to keep the bare cost of transit down even to the present high charges, to work at a moderate speed. Were there a steam boat canal by the side of these railways it might be worked very cheaply at a higher speed than the latter. The charge on the Hudson is 2½ P. a mile for 1st class passengers, $\frac{1}{7}$ of the charge on these lines, without allowing for the difference in the value of money in America and India, which is 6 or 8 to 1, so that 2½ P. there, is not equal to ½ P. here, $\frac{1}{30}$ of the charge here. And so also in England, passengers are carried at from $\frac{1}{11}d.$ to ¼*d.* per mile from London to Edinburgh, with all the expences due to a very bad sea navigation, equal to from



⅝ to 4 P. per mile, and allowing for the difference in the value of money, from ½ to ⅝ P. in India, and it is evident that on a steam boat canal, these charges might be still reduced. Such is the difference between land and water carriage even at high speeds.

It is thus clear that at present the Railways don't meet the wants even of the 2nd class passengers, and they scarcely touch the 3rd class at all.

Let us consider this point also by means of the charges themselves. In Calcutta the lowest charge is three P. (⅜*d.*) this is equivalent to six times as much as at home, or 2¼*d.* nearly, 2¼ times the charge for the lowest class in England, and it is notorious that for one that has money to spare here, there are ten there. To put the people of India on a par with those in England, the charge ought not to be reduced merely in proportion to the value of money, but below that. It ought to be under ½ P. per head.

On the Rajahmundry canals, the charge is one P. and it is fully ascertained that this excludes by far the greater part of those who would travel. It is now proposed to reduce the charge to ⅝ P. in order to obtain greater profits. And if the boats were worked by steam instead of by men, they could afford to carry at ½ P. with a good profit. Worked by men and charging one P. they are yielding now 30 per cent.

How grievous it is thus to see this enormous expenditure incurred, and after all, the main wants of the country as respects even passenger traffic unsupplied by it. Even in this respect what is wanted is to convey from 5 to 10,000 persons a day at prices of from ½ to 2 P. and whether they go at 10 or 20 miles an hour, whether it takes two or four days to travel 1,000 miles, is a matter of entire insignificance in comparison.

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*The certain consequence of the construction of a Railway on the proposed tract will be that an insignificant proportion of those who used to travel will be carried at these ruinous charges, and that for this even, the country will have to be taxed in other ways to provide interest for the capital expended.*

Secondly, let us consider the goods traffic. I urge that this is in reality the first point in the question of communications, in the present state of India. India is not in the position of the gentleman whose question is not about money, but how he may travel most speedily and with the greatest ease; but in that of the farmer with whom the grand point is how he may get his produce to market at a charge that will enable him to sell it profitably. When India has by means of obtaining access to markets, been enabled to sell its produce, and so secured more than the bare necessaries of life, then it might entertain the question of travelling with ease and speed, if *the two questions were really separable*, but they are not; the same means that will provide them sufficiently cheap transit for their goods, will also provide them both speedy and pleasant transit for their persons.

We have then to consider the suitableness of Railways as respects goods traffic, using the actual results on present lines for this enquiry also. First, on the Calcutta Line. The total quantity of *goods* last year (not coals) was 49,000 tons; supposing that they are carried 50 miles, the average for the whole length of line would be 20,000 tons. The distance carried may be more than 50 miles, but the average quantity cannot be above 25,000 or 30,000 tons, which supposes the average distance to be 60 or 70 miles. But the highest of these numbers is utterly insignificant, even as respects *quantity*. Compare it with the water traffic to Calcutta. Compare it with the reported traffic in four months on the Nuddea Rivers 600,000 tons. I cannot find a memorandum of the total traffic on the two Calcutta canals, but unless my memory fails, it is about 3,000,000 tons a year. The *boats entering* the circular canal alone were 170,000 last year, a year of confusion, probably containing 2,000,000 tons.

When we look at these quantities and see the railway carrying $\frac{1}{80}$th or $\frac{1}{100}$th part, it is clear that even as respects quantity it is a matter of entire insignificance. But when we examine the prices we find that even if it carried fifty times as much, it would still be a matter of no sort of importance, because it *carries at prices only just a hair's breadth under those at which the goods, were previously* carried. What does it matter whether the goods are carried by rail or by road, if there is no tangible reduction of cost. It has an appearance of being a point gained, when the rail succeeds in abstracting the traffic from the old modes of conveyance, but the change is no real benefit to any body, that is, no benefit worth mentioning. In this case, suppose 30,000 tons have been transferred to the rail, and that there had been so great an actual reduction of

cost as ¼ A. per ton per mile, the total saving to the public is 500 Rupees a mile, or 60,000 Rs. a year, an insignificant sum in comparison of an expenditure of 150 lacs.

But there is also a traffic peculiar to this line, *viz.*, the coal traffic. It is evident that there may be any where a peculiar mineral traffic of this kind, which is in some important respects distinct from the general heavy traffic of the country, and each case requires separate consideration. This mineral was before carried entirely by the Damoodah, a small river flowing only a short distance, liable to sudden changes, and never affording a steady navigation; a river navigation, in short, of the lowest kind, for a great part of the year without water, and in the monsoon alternately in flood and very low. It also enters the Hooghly so near the sea that that river there is very wide and exposed, and the distance is 40 miles more than the direct line. The expense of transit on it is accordingly very high for water transit, *viz.* 6½ P. per ton mile of distance carried, and 8½ P. per mile of direct distance, while the cost on the Nuddea rivers is about four P. per mile of distance, and by the river and Soonderbunds two P. *for grain*, and it would be less for minerals. The coal trade up river to the Ganges is carried at 1 P. per ton per mile. The total quantity carried last year was 90,000 tons by rail, and 54,000 by water. The charges were 3 As. a maund=5¼ Rs. a ton by the latter, and 2 As. 10 P.=5 Rs. nearly by rail. Thus, as was stated for goods, the least possible difference is made, and were the whole of this ¼ R. saved it would only amount to 22,500 Rs. a year; but it is not, for at Howrah the coal has to be discharged into boats to be conveyed to the different points where it is required, so that the saving must be quite insignificant, and this is further proved by the fact that the difference of charge is not sufficient to transfer more than ⅔ of the whole to the rail. There is thus the least possible benefit to the public by the change.

It is no fault of the railway management; it is the defect of the apparatus itself; it is like a man cutting up firewood with a knife, he must of course charge high. The fact is, the railway is not suited for this work. A canal on this line could certainly carry the coal at one P. a ton a mile, or 10 As. for the 120 miles, and thus save 4 Rs. 6 As. per ton, or 5¼ lacs of Rupees on the whole present quantity, and as such a reduction amounts to 60 per cent. on the cost of the coal at Calcutta, it would certainly cause a very great increase of consumption; and probably a saving to Calcutta of 10 lacs a year would thus be produced on this one article, were a suitable means of transit afforded, instead of much under 22,500 by the railway. By the present arrangement it is, in fact, just as if all the grain on a gentleman's estate was carried to market in carriages instead of in waggons.

This is a striking proof of the entire unsuitableness of railways for the heavy traffic of India, and is surely a warning to us in planning future communications.

We may safely say that Calcutta is paying ten lacs a year in this one item for the privilege of having a magnificent railway to Raneegunge; and this is only a part of the loss, for a reduction in the price of coals from 9½ Rs. to 5 would give a vast stimulus to her in all sorts of ways, both to her internal trade, and to her external commerce. *And what also is the loss to the coal owners by this mistake?* What the effect of cheap transit will be in India, we have positive proof in the Rajahmundry Canals. There the supply of new boats cannot nearly keep pace with the increase of demand. On the day I left Dowlaishwarum more than 80 boats had passed through the head of the main canal by 5 P.M., and 33 were waiting to pass the lock, more than 110 in one day, containing probably 1,000 tons. In the first *year* about 700 boats passed, in the last *month* more than double that number of much larger boats; this increase is in seven years. And this is in spite of increased charges, in consequence of the inadequate supply, and in a part of the country without even large towns, and hundreds of miles from any city.

But there is another great point in this matter, and which is in fact one of the leading questions on the whole subject of Indian communications, it is no other than this, *what is the actual cost of carriage by railway?* Most strange to say, I have not seen any discussion of this essential point, in projecting those works, and yet most assuredly without a right decision of it, no right conclusion can be arrived at.

In the present case, how can we possibly settle the matter whether a railway ought to be constructed to Beitkul, without knowing at what cost it can carry. Suppose, when we have made it, we see five-sixths of the old traffic still going by the roads, as we do in Madras? It is strange, indeed, that this point should not have been thoroughly investigated. In one of the Punjaub Reports we have an example of the strange loose way with which this essential point has been dealt with. It is there said. "It will now be proper to state briefly what the advantages of this



line are likely to be." But in the following discussion, it is only said, "*If* the carriage by Rail should be kept low, so as to attract commodities which can only afford to pay *cheap* transit;" and again, "the present water traffic would preferentially take the railway, *provided always the cost of transit be cheap*," and so on. But not a word is said on the subject of what the cost would actually be at which the railway could carry. The carriage by river, with the present clumsy navigation by human power, is five P. per ton a mile, and it is certain it can be reduced, probably more than half. Is there from such data as we have, a probability that a railway would carry at two or three Pie.

On the Calcutta line, I have only these data. The receipts from coals were about 2,20,000, *viz.* 44,000 tons at 2 As. 10 P. per maund, and the total receipts were 7,50,000, the former two-sevenths of the whole. Now we may be sure that the profits on the coal were less than those on the passengers, the one carried at eight P. a ton, and the lowest passengers at three P. a head, or five As. a ton. And as allowing for repairs and renewal, the profits could hardly have exceeded 3 per cent, on the whole it follows that that on the coal must have been much less than two-sevenths of 3, or certainly not ½ per cent, that is, 60,000 Rupees on 44,000 tons, or 1 Rupee 5 As. per ton, equal to two P. a ton a mile, which would make the actual cost of carrying the coal, *exclusive of renewals and repairs*, six P. a ton a mile. It seems impossible that it can be less than this.

On the Madras line, there is a most careful examination of the actual cost by the late Consulting Engineer, and his result is above six P. a ton, without an allowance for renewals and repairs. And in the last Report on six months' traffic there, there is shown an actual loss on the goods traffic, though the average charge is ten Pie.

Judging from these things, from the very low profits on the Railways, even as the accounts are now kept, from my knowledge of the cost of carriage in England and America (for instance, the above case of the great diminution of profits on the Great Northern, attending upon an enormous increase of goods traffic, showing indisputably a positive loss upon the goods traffic, at the rates there charged) judging from these and other things, I must say, that at present there is no indication whatever that these high speed railways in India will carry at less than eight Pie a ton a mile; more likely ten Pie, for bare cost of carriage, without any allowance for interest.

The one fact that the Madras Railway has failed after two or three years trial, to take more than a small part of the traffic off the common road by the side of it, "and that not a very good one," is a fact that speaks pretty plainly; and we may be quite sure that rather than suffer such an opprobrium, all the parties connected with the railway would strain every nerve, and be under a strong influence to carry at the lowest possible charge.

I cannot but think that these facts and reasonings will be conclusive as to the necessity of a careful investigation of this essential point, before the Beitkul Railway is decided upon.

But this is by no means the whole of the question. It is not whether the railways can carry at eight Pie or ten Pie, nor even at four Pie. It is, Do we not require to carry at a much lower cost than the lowest of these? Even four Pie will not answer the purposes of the country. We have to carry goods of a very low value, hundreds of miles, and we *must* have *very* low rates, or India's resources will not be developed. A charge of four Pie on 500 miles is ten Rs. a ton, which would be thirty per cent. on the value of grain for instance, probably the great bulk of the traffic. Wheat, in Goandwanah, costs eight Rs. a ton; such a charge as four P. would more than double its cost. Thus we should throw away our peculiar advantage of cheap production if we only have a means of transport of eight or ten or even of four Pie a ton. We *must* have transit at half or one pie a ton a mile if possible.

And further, this transit we *can* have; we have abundant proof that on a good steam boat canal traffic can be carried on at a rate not exceeding one P. Even on the Hudson, where men earn 1½ or 2 Rupees a day, the goods are conveyed at 1½ P. a ton a mile. And we have ample proof from the working of the river and canals in Rajahmundry that for long distances with steam power at the extremely low cost of fuel in India, goods can be conveyed for less than one Pie. This cost of fuel is a particular point. On the Godavery we pay one Rupee a ton for wood, equal to 2½ Rupees for coal, and I have every reason to believe that when the river is regularly worked it will be lower than this. This is about one-fifth of the cost of fuel on the Ganges, where the actual *cost* of carriage *up* river by steam, according to such information as I have is 4 P. a ton. The charge is from 2 to 3 times this, but the profits are enormous, 50 per cent and more. Every waterway in India will touch or approach some jungle, so that we may confidently

reckon upon very cheap fuel, and this is particularly the case in the tract of country under review. I should think ½ R. a ton for wood, equal to 1¼ Rs. for coal, might be calculated upon. We may not be aware of the extreme cheapness of water carriage when fuel can be obtained at such prices, till we make the calculations.

I am thus perfectly satisfied from actual results, that both in respect of passenger and goods traffic, these railways fail entirely to answer the purposes of the country, in respect of *cost of Transit.*

There remains the question as to numbers and quantity to be carried.

I will not go so closely into this part of the subject as the last.

I have no doubt that a Railway in India *will be able* to carry as great a traffic as *offers*, but this is only because its charges must be so high as to prevent $\frac{9}{10}$ or $\frac{19}{20}$ of the traffic there would be, if carried at such rates as are necessary; but it will thus effectually keep down the traffic, and the question, therefore, of whether it could carry such a traffic as there would be on many lines in India, is thus of small importance.

But on the line to the north-west from Calcutta for instance, where the traffic is even now so enormous, and rapidly increasing, with very low rates, I should think we ought certainly to provide for 10,000 passengers a day, and three millions tons a year, and it is quite certain not even a double railway could carry that. No railway in England carries one-fourth of this, and some of them are most seriously crowded, and, as in the case of the Great Northern, their expences are so great in consequence of the speed they are obliged to push on the goods in order to escape from the passenger trains, the constant delays in sidings while other trains pass, &c., that there is an enormous loss on the goods traffic, as I have shewn by the diminution of dividends.

I have no doubt that if Beitkul is made a port, and if the upper country is thoroughly opened up by a great extent of very cheap communication, that the main line will in a very few years have an immense traffic on it, and for this we must be prepared.

But it is a matter of very little importance that railways can neither carry at the rates nor the quantities that India requires when we have a means in our reach, procurable at ⅓ or $\frac{1}{10}$ of the cost of railways, that will in every respect most fully answer the purposes of the country, *as a communication*, and especially when it will not only do so, but will at the same time enable us to attain to an object of still greater importance even than communications, *viz.*, both as far as possible securing the produce and greatly diminishing the cost of production.

One of the principles on which I consider that the examination of the present question should be conducted, is this, that in India, at present, *communications are not the works of the first importance*, but that works which will as far as possible secure the population from famine and scarcity, and afford the cheapest production are the first, and that communications are certainly second to this. What satisfaction would there be in a railway passing through a population dying of famine and in abject poverty, because their means of raising produce was so imperfect that almost the whole population was employed in raising food, as is the case at this moment in the Southern Mahratta country as well as in almost all India. I am aware that railways were proposed as a means of preventing famines, and I allow that they would in a manner mitigate them; but, I urge, first, that they would do it in a very small degree, because in famines in India the great mass of those who perish, do not die for want of food, but for want of money to buy it with; second, that when a population are suffering from famine, no communication can possibly rescue them; 10 millions of people would require 5,000 tons of food a day, costing, at such a time, probably seven lacs of rupeees a day. What was the state of Ireland with its seaboard providing the cheapest possible conveyance of food to within a moderate distance of every part of the interior. Was famine prevented? How many hundreds of thousands perished even on the very coasts? And if the monsoon failed, hundreds of thousands would perish in the Southern Mahratta country in spite of a railway that cost three millions. Further, the expense of carriage, as I have shown, is so great by a railway, that if the grain should be brought 3 or 400 miles, which it of course would, the cost of carriage alone would be at eight P. a mile, 12 to 16 Rupees a ton, or 60,000 to 80,000 Rupees a day for 5,000 tons. And could a railway bring the quantity, and could all this money be found, still this would only bring it to the line of the rails, it would not distribute it throughout the tract, which would therefore remain to be done by other means. So utterly ineffective would a line of railway be in every respect. There is one more point to be considered with respect to this





proposed line of railway. When it arrives at the top of the Western Ghauts, is it proposed to make a locomotive line down them, like the Bhore Ghaut? Though it would not be so expensive, yet it would certainly be an enormous addition to the cost of the line, and would make the average cost very high.

What is first required is to make the country, as far as its circumstances admit of, independent of other countries for food, and *then*, to provide it with communications which shall both carry extremely cheaply, and also in some good measure *pervade* the tract. A single line of communication through a country is not what is wanted, it is a network of them, a mile of cheap transit to every 5 or 10 square miles of country.

I do not of course mean to say that we can absolutely secure the country from famine. If it pleases God to withhold rain for a certain time, all *our* works will be useless; but what I do say is, that beyond all comparison our first work in India should be for the purpose of securing a supply of water to the land, and happily in doing this, we cannot but at the same time gain our second grand point, the pervading the country with a network of the cheapest possible lines of transit, capable also of carrying an almost unlimited *quantity* and at ample speeds.

With respect to such works in this particular tract, I need not here go into detail, because I have already done so in the Report I have forwarded on the Beitkul Harbour.

I will only here state the leading points. The first is the remarkable fact that many hundreds of miles of the rivers here have so slight a fall, that they are either now good navigation, or can be made so at a trifling cost. The Mootah Moolah, Beemah and Kistnah for instance form one line with a fall of 900 feet in 600 miles, to near Kurnool, being a fall of only 1½ ft. per mile. Wherever the fall is so slight as this, one of two things is the case; either the fall is equally distributed and then the navigation is already good, or there are parts where the fall is rapid, and then these can be corrected by annicuts and locks, at a moderate expense, and the principal part of the river must have a still less fall than that average. For keeping up the navigation during the dry season on such small rivers as this, it can be done at a very moderate cost by storing water in tanks. Thus there can be no doubt that many hundred miles probably not less than 2,000, of good river navigation can be obtained there for probably 1 or 2,000 Rs. a mile, or $\frac{1}{100}$ of the cost of a Railway. The second point is that though a great part of this tract is liable to very scanty supplies of rain (there was a partial famine there only 4 years ago, and one threatens now) yet the *rivers* are as well supplied as any in India, because the sources of the Kistnah for a length of 400 miles are in the Western Ghauts, and the whole country is thus traversed at every few miles by streams which I believe have never been known to fail. We have therefore as sure grounds as we could have for hoping that an effective system of canals for irrigation and navigation led from these rivers would be completely effective, and would really in every way fully answer the purpose for that tract, both securing cheap production, and providing every talook with very cheap transit. One grand line in the southern borders of this tract, *viz.*, from the sources of the Toombuddra, past Bellary and Kurnool, and thence by Cuddapah and Nellore to Madras, has now been examined throughout, and it has been ascertained that it is a perfectly practicable line from the very summit of the Western Ghauts, for a line of river and canal navigation. This line would unite with the Beemah and Kistnah line near Kurnool.

For the connection with Beitkul, I have ascertained that the Kala Nuddee is capable of being made effective to about 40 miles from the coast, and from the information I have received, I have no doubt that a canal could be brought along the high country opposite to that point. I would then connect the two by a series of inclined planes, which might be done at a practicable expense.

Now surely it is a question whether under these circumstances it is best to spend three millions on 400 miles of Railway here or on irrigating probably at least two millions of acres, yielding thereby an additional produce at 15 Rupees an acre only, of 300 lacs a year, and as far as possible providing for certain and cheap production, in addition to at least 3,000 miles of water communications to carry at ample speeds for all our purposes, and at one-fiifty or one-tenth the cost of railway carriage. Or rather I should say, can there be the smallest room for question about it?

I must most earnestly urge a real consideration of these facts and arguments before so fatal a mistake is made as to enter upon this proposed work. It will not be the mere waste of

three millions; it will be incomparably worse; it will in all probability seal up this beautiful tract of country for an unknown time from all the blessings of cheap production and cheap transit. For men once committed to these unhappy railways in India, are under a sort of necessity to resist every attempt to give the country either of these two vital benefits.

I may just mention one most important point in this tract, *viz.*, that it is perhaps of all India the best suited for European colonization. The situation of a great part of it so near the sea, and at the same time at an elevation of from 1,800 to 2,400 feet makes it a delightful climate, and perfectly fit for European occupation. In this respect it is perhaps the most important tract in India and worthy of the most particular attention from Indian statesmen.

I must again apologize for expressing myself so strongly and decidedly opposed to the views contained in these Minutes, but I feel that it is a vital question to India, which requires the most explicit avowal of opinion by those who have had such opportuuities as I have, however they may unhappily differ from those who in office and every thing else are so much their superiors.

We are all agreed so far as that the grand object now is to bring to bear the energy, science and capital of the West upon the fertile soil and vast population of the East, as regards material things. The whole matter is resolved into the question, Is the connecting link between these two, to be Iron or Water? Which of these materials will most effectually accomplish our object?

Shall we make use of a material which we have on the spot in the utmost profusion, and which is procurable at an almost nominal cost in comparison of its value or shall we send to the other end of the world for one which is only procurable at a monstrous cost, and which when brought, will not accomplish the real objects in view.

Supposing we bring a ton of iron into the interior for 150 rupees, we might for the same money apply to the land permanently at least 150,000 cubic yards of water a year, watering 30 acres, with an increase of produce of 450 rupees, and providing the cheapest transit besides. But the total cost of the Iron including the actual application of it to the work for which it is intended is about 700 rupees a ton, *viz.*, 110 tons of rails per mile costing 80,000 rupees, and for this 700,000 cubic yards of water may be brought to the land.

Spending our money on Railways is in fact throwing away the greatest gift that God has bestowed upon India, and substituting for it that which can only be obtained at a cost entirely ruinous.

I am not surprised at these Minutes. They only partake of the almost universal misapprehension under which not only Indian Statesmen, from the late Governor General downwards laboured, but even the Mercantile community, who it might be supposed would have more readily perceived the necessity of cheap production and cheap transit.

There are happily strong indications that this misapprehension is now considerably weakened, and now that actual results of the Railways can be referred to, it seems to be a suitable time to make an effort to call attention to this great question, and to try to obtain for it a real investigation, of which, there has not hitherto been a shadow. Everything as in these Minutes has been taken for granted.

Among many such indications I may mention three which seem to me calculated to lead men to entertain the question whether they are right in thus taking for granted that railways are *the* remedy for India's material evils.

The first is, that when I had the honour of meeting the commercial community of Calcutta on the subject of the Rajmahal canal, rather to my surprise, I was not met by a single objection such as Railway men usually make. I cannot but gather from this that the Mercantile community generally have now great doubts about the railways answering the main purposes of the country.

Again many of the witnesses before the late Colonization Committee, strongly advocate Irrigation and Navigation. Mr. Balston for instance says, "a canal even if it were to cost 50,000£ a mile would be much more profitable in India than a Railway that cost 10,000£." He was a Railway Contractor.

Having thus called in commercial men, I trust I may be excused taking so great a liberty as to produce the testimony of a leading statesman also, viz., the Right Honorable the Secretary of State for India.



The following is a passage from a printed Report of that nobleman's speech at a meeting of the Manchester Cotton Supply Association last year.

"It seemed to him one of the most practicable functions the Association could perform to give information upon these points, and carefully avoiding being mixed up with Indian Politics they should keep to the two great things, Roads and Irrigation. As to roads he feared we were in danger of being misled by the precedent and example of England. It seemed to be thought that because costly lines of railway for high speed were suitable for this country, (before a line was constructed we had a complete canal system, adequate to our heavy traffic) they were equally suitable for India. He believed and so did more competent judges, that *that system of proceeding was a complete mistake.* What was wanted in India was not costly lines for rapid travelling laid down in a few parts, but a comparative inexpensive though slow means of communication extending over the whole face of the country. In that matter we should follow the precedent of the United States rather than of England. * * * It (the Association) aims at no victory but the victory of English knowledge, and energy and intelligence over apathy and ignorance and sloth. We do not ask of the State to conquer fresh territories for us, we simply ask it to make use of those it already possesses. We do not desire the political subjection and humiliation of the native population of India; we do desire to compensate so far as is in our power the people of that country for the loss which we have caused of their political freedom, by enabling them to share in the material prosperity of the race that has conquered theirs."

I cannot but think that these indications of a different view being taken of the Railway question from the almost universal one four years ago, are calculated to have a great effect in causing many others to pause before they proceed further in that direction.

I might add this Government's very decided testimony about Hydraulic works, in their Despatch of the 15th May 1858, where among many other things they say—"Further the Government question whether considering that the returns from Irrigation works *are always considerable and often immense &c.*" Again "the Government express their strong unanimous and earnest advocacy, that all irrigation works, which on a comprehensive view of the wants of the country may be deemed necessary to develope its undoubtedly great resources, be commenced at once, boldly and on a large scale, be pressed forward throughout all times and under all circumstances, and be looked on and practically treated, as in fact they are, the most economical because the most profitable in which the Government could possibly engage. It is needless now again to bring forward the innumerable instances in which money has in this Presidency been most advantageously invested in Irrigation works. The proceedings of Government have only been too desultory and too vacillating, and it is confidently asserted that India could be placed in a position to pay all her own expences and gradually discharge the debt, far more readily and speedily by a judicious expenditure than by any scheme of retrenchment and reduction." For the information of those who are unacquainted with this Presidency it is necessary for me to mention, that this was written just after a most searching discussion of the effects of these works of irrigation and navigation, in which everything conceivable was brought forward to prove that they produced no results; and this therefore is in fact the deliberate decision of this Government upon that controversy.

What I must insist upon is that this is not a light question. It lies at the very foundation; it is really *the fundamental point in the whole question of the management of India.* Everything without exception of course depends upon this one, the supply of funds. The denudation of India as respects European troops, which invited and gave the temporary success to the mutiny, was solely owing to the want of funds, and to nothing else. And at this moment the most peremptory orders are received to put a stop to those things, which are absolutely essential to the well-being of India; for instance Public Works, Education, &c., and so it must be till this only means of providing funds is resorted to.

Tanjore the most lightly assessed district in Madras, where the land is all saleable at a high price, yields 55 lacs a year, solely because its irrigation and communications have been attended to from its coming into our possession while all other districts in India yield only from 7 to 30 lacs; and Rajahmundry by the same means has been raised in a few years so as to yield 40 per cent more revenue than it did before, with at the same time a complete relief to the inhabitants.

The Revenue this year will be about ten lacs above the former average, and the works are far from finished. The increase already obtained, not nearly half of the ultimate increase, if obtained from all the other districts of India would add 13 *millions sterling to the Revenue*, and the means used there are of universal application. These works will probably cost ½ a million sterling; the 30 millions guaranteed for the railways would have improved in the same way 60 districts, yielding even at the rate only of the increase this year in Rajahmundry, six *millions sterling*. Expended as they are being, there is now a certainty that they will add not much less than a million a year to the burthen of India.

The Madras Government alone has had decisive experience on this point, and their testimony is of the highest importance at this moment, and must have the greatest weight with that of Bombay.

Surely we have now had proof enough of the dreadful effects of this unhappy Railway mistake. Take for instance the fruits that have been reaped from it in Bengal. Mr. Bourne though sent out by the Railway Company saw at once that water not iron was India's remedy. That to neglect its magnificent rivers, and send millions to England for iron was a "complete mistake." He therefore proposed to put powerful steam trains on the rivers. This was referred to the late Governor General, and under the influence of that fatal ignorance of the pundamental principles of the science of transit which was so general it was rejected by him. Instead of it, 150 lacs were spent on the Raneegunge Railway. When the revolt came to try these two schemes, what was the result? Did the Railway prevent the Cawnpore and numberless other massacres, did it reinforce our garrisons, pick up our hunted women and children on the banks of the rivers, &c. The whole revolt went on just the same as if this 150 lacs had never been spent.

Now had a small part of this money been spent on a large flotilla of river steamers, and even a small portion of the remainder in improving the rivers, 2,000 miles of river might have been covered by these most powerful protectors; garrisons might have been rescued or strengthened, the refugees might every where have been picked up, the Cawnpore and many other massacres could not have taken place, small detatchments might have been landed in an unexpected moment in the very heart of the enemies haunts, quite fresh, and taken on board again at any moment, every steamer would have been a moveable and at the same time an impregnable fortress, and the whole character of the contest would have been totally altered. Millions of money, and how many lives of men, women and children, would have been saved.

After these terrible sufferings, from the most grievous neglect of incomparably the most powerful instrument in the hands of our Government, surely we may at least make this use of them, to consider the mistakes we have made and let it warn us to consider a little before we commence upon another great expenditure upon similar works.

Nothing can be more probable than that if this scheme is undertaken, when a similar sum of 150 lacs has been spent upon it, a famine may take place and hundreds of thousands perish, without the slightest relief from that expenditure, while the same sum spent on Hydraulic works would probably entirely prevent a famine.

I would venture to suggest that Committees composed of one Engineer and one Mercantile man should be appointed at each of the Presidencies to investigate this important point, at what cost such railways as these will be able to carry goods in India. I think it essential that a non-professional man, but a good man of business should help in this enquiry. These three reports might then be remarked upon by the Chief Engineers of the Railways, and the whole of the papers published. It seems to me that there are now tolorable data for examining this point, and that it is of very great importance that something like a definite conclusion should be arrived at about it, if possible. At present all these schemes seem to be decided upon an *if*, of the value of which *if* there is no knowledge whatever. Of course the important items of Depreciation and Repairs must be estimated for in making this calculation.

There are in this paper many things repeated which I have said in former ones, but it is necessary to make the paper in a sense complete in itself as it may come into the hands of those who have not seen the others.

To shew the effect of irrigation and navigation, I append to this paper a statistical statement of the Rajahmundry district, showing its progress in Revenue, Exports, Internal traffic, &c., since the commencement of the works there. Certainly no other district in India ever made such progress in the same time.



## APPENDIX.

COMMISSIONER'S OFFICE, BURDWAN DIVISON,
HOOGLY, THE 14TH APRIL 1858.

No.

TO THE SECRETARY TO THE BOARD OF REVENUE, LOWER PROVINCES.
*Fort William.*

SIR,

Revenue.
Report on the effects of the Railway or other means of conveyance.

In reply to your letter of the 8th January last, No. 6, I beg to submit the following "remarks on the effect of the Railway or other means "of conveyance in the Districts through which it passes," and I greatly regret that the utter absence of any legal power to call for such statistical information, as may be easily obtained in more civilized countries renders me unable to submit a *complete* Report.

Line of Rail.

The Railway, commencing from Howrah, runs first through 5 miles of that District, then through about 45 miles of Hoogly, and finally through 71 of Burdwan, altogether 121 miles to Raneegunge, close to which terminus are the great collieries of Bengal.

Decrease of coal Boats on the River Damoodar.

3. The number of coal boats employed by the Bengal and other coal companies in 1844 was 2,252, which could be used only during the height of the rains, when the Damoodah River was full. That number has been now reduced (by about 30 per cent) to 1,594, and the quantity of coal conveyed by their means from 23,36,582 to 16,22,363 maunds, or from 77,886 to 54,312 tons. But the *Railway alone* in 1857 carried 90, 754 tons; far more than the larger number of boats used to transport.

4. I have recently been informed that the very high price of provisions has led the boatmen to make an attempt to raise their demands for the conveyance of coals, which has hitherto been (3) three annas per maund; while the Railway charge has been reduced from 3½ annas to 2 annas 10 pie per maund. This will of course yet further decrease the quantity of river borne coal, unless the river freight charge be speedily and considerable reduced.

| Year. | No. of Carts. | Decrease. | Goods conveyed (Maunds) | Decrease. | Remarks. |
|---|---|---|---|---|---|
| 1854 | 3,847 | ..... | 76,943 | ..... | |
| 1855 | 3,341 | 406 | 68,820 | 8,120 | |
| 1856 | 2,725 | 716 | 54,500 | 14,320 | |
| 1857 | 1,208 | 1,517 | 24,160 | 30,340 | |

5. At Howrah, some rich Chowdhries, each of whom could command several hundred carts, almost monopolized the Calcutta Trade with the upper Provinces, as to transport *by land*. The marginal statement shews what a remarkable effect the Railway has had in diminishing the demands at Howrah for carts, reducing it in 3 years, to less than one-third of what it was the year before the Railway was opened.

6. On the other hand, the number of carts starting from Burdwan to which place merchandise is brought by rail from Calcutta, is greatly and daily increasing. During last month I had them counted for several nights, in one halting place only, and found the number to be from 163 to 185 each night. The Burdwan carters refuse to go down to Howrah for the goods, and at Raneegunge terminus no carts are to be had. Thus the strange practice of taking their goods off the Railway at its centrical station has, in many cases, been forced upon the merchants.

7. It is remarkble that, during 1857, no less than 220,000 maunds about (70,000) tons of salt have been carried by rail from Howrah, and I regret that I cannot ascertain its destination, as it could hardly have been consumed in the chowkees on the line of rail, and I fancy it still goes up the country in boats.

Salt.

8. On and within easy reach of the line of Rail, the goods traffic has increased greatly. Before the close of the first year of the Railway working (1855) I myself have seen 1,000 bags of rice started from the Burdwan station in a day, whereas before the opening of the rail, I believe 1,000 never left Burdwan in a month.

Steady and large increase of traffic both of goods and passengers.

9. The annexed statement shewing the goods and passengers traffic of five half years is most remarkable. The *second class* passengers were more numerous in the first half year than they have ever been since, though the number is steadily increasing again, and the coal carried on the 5th was a trifle less than that in the fourth half year, but still nearly double of the quantity carried in the corresponding half of the preceding year. With these two exceptions, every entry shews a great and steady increase and the shareholders must look with no small gratification to the fact that the outlay has not, in any one period, amounted to a half of the incomings.

Very low fare for third class passengers and its effect.

10. The enormous number of third class passengers proves the wisdom of the resolve to reduce their rate of fare to the lowest possible limit. Our English Parliamentary rate is a penny a mile, while here a poor man is conveyed 121 miles for 45 pence, or nearly 3 miles for one penny.

Mania for Railway Travelling amongst the poorest class.

11. I was surprised to hear a few weeks ago, from a most intelligent Native gentleman, that the Railway has done great harm to the poor people in its neighbourhood! on asking for an explanation of his meaning, I was told that the mania for travelling by Railway has become such, that thousands of poor people deny themselves common necessaries, and pawn their petty Jewels, or pots and pans, for the pleasure of being able to say that they whose ancestors never knew any conveyance but their own legs or a bullock cart, and that within a circle of half a dozen miles round their homes, have visited Calcutta in a *fire ship*, as the Train is still very commonly called.

Epitome.

12. Again expressing my regret for the scantiness of my information, I must sum up my report thus.

First. Part of District not affected.

13. There are parts of the three Districts above named, such as the Southern portion of Howrah, between the Hooghly, and Roop Narayan rivers, and the North Eastern portions of Burdwan on the Hooghly, which are so well provided with water carriage, and so far from the rail; and other parts of all three Districts in which the want of roads makes approach to the rail so difficult, that they have been little, if, at all, affected by the rail.

*Second.* Part affected.

14. There are parts of all three districts so favourably situated, close to, or easily accessible by road from the rail, that they have been greatly affected as to goods—but perhaps, most of all as to third class passengers traffic.

Railway rates for goods should be reduced.

15. The transport of goods by carts, and yet more of goods and of passengers by water, along the first 30 miles of rail, (Howrah to Mugrah) is so very cheap, the trouble and expense of shifting goods from the rail to carts, and *vice versa* tells so seriously in short distances, and the Natives are yet so incapable of appreciating our English idea that "Time is money," that the Railway has not affected other means of conveyance hitherto, nor drawn goods traffic to itself *so exclusively*, as it doubtless would have done but for the aforesaid previously existing cheap means of transit; and as it will do where those means do not exist: and when the Company may be prevailed upon, as I hope they soon will be, to adopt the same enlightened policy, with regard to their rates of carrying goods, as they have done with regard to the third class passengers.

Trouble and cost of shifting Goods from Carts to Rail and *vice versa*, tell heavily on short distances.

16. I have above stated that the low rates of conveyance by carts and boats have prevented so much use of the Railway for goods traffic as might have been expected had those means been less cheap and accessible or had the rail distances been greater and the charge for transit lower. It is also evident that on any short line, the trouble and expense of carting goods from a Warehouse in Calcutta to the river side, of there unloading them, crossing them over the River, again moving them on carts or coolies to the Howrah Goods Station, forwarding them, say three miles by rail and lastly conveying them four or five miles on a cart to their destination will not be undertaken by any one, who can load them on a cart at his own office door, cross them on that cart over the ferry, and deliver them to the consignee without one charge of conveyance at less cost and in not much more time perhaps, indeed, in less time; for a cargo *may* be delayed 12 or 24 hours, or even more at the Railway station.



Difficulty of turning carts at Ranneegunge.

17. But another cause seriously affects the Rail at present. Those merchants who might avail themselves of it to send their goods for 121 miles, *enroute* to stations 500 or 900 miles distant, do so at present to an extent scarcely noticeable, I believe because at Ranneegunge it is next to impossible for them to procure carts. There has been during the last year a pressure on carriage for Military purposes, which may now be disappearing, but the country around Ranneegunge yields nothing but the miserable cart called a Suggar (a very small cart with wheels formed of a circular plank) and it is far better to engage carts in Calcutta for the whole journey or even in Burdwan as shewn in Para 5 than to use the rail for a small portion of it, and then to fall into difficulty from a want of carts at Ranneegunge.

*Fourth.* Far greater success may be expected.

18. I feel confident that even the great past success of the Railway will be eclipsed when it shall have been extended so far as to reach the great marts of the North Western Provinces and to absorb the vast traffic still carried on by *carts* along the Grand Trunk Road, and by *boats* on the river, which it cannot yet be said to have touched.

*Fifth.* The importance of Road.

19. I have from my youth up strenuously advocated road making, and I think the importance of multiplying roads as feeders to the Railway and as promoting generally the political and social advancement of the people cannnot be too much impressed on the Government and the community.

I have, &c.

(Signed). W. ELLIOTT,
*Commissioner.*

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*Memo: on Mr. Elliot's letter on the effect of the Railway or other means of conveyance.*

Para. 3. Coal traffic. The distance from Ranneegunge by rail is 120 miles, by the Damoodah and Hoogly 160.

The water charge of 3 annas per Maund, is equal to 6¼ P. (⅜) per ton per mile, that by Rail was 3⅛ annas, or about 10 P. (1¼d) the reduced rate 2 annas 10 P. is 8 P. (1d) per ton and Mr. Elliott states that the charge of 6¼ P. by water has become insufficient in consequence of the altered value of money of late. The quantity carried by water was 78,000 tons, it is now 54,000, by Rail it is now 90,000 tons. The cost of carriage per ton for the whole distance was therefore 6 Rupees a ton by rail, and is now 4¾ Rupees and by water about 5¾ Rupees.

*Remarks.* 1st The water charge is increased by the short portion of the year, that it is open, by the increased distance 40 miles or ⅓ more than the Railway, but doubtless most by the boats, having to go down to the broad part of the Hooghly, which prevents their being loaded as they could be in smooth water, and causes great risk. This charge of 6¼ P. per ton per mile is enormously high for water carriage. In a thoroughly good water line, it should certainly be under 1 P. with such a length of carriage. That is if the Damoodah were kept open nearly or quite the whole year, and connected with the Hooghly at Calcutta by a canal making the line direct, the charge per ton of coal should certainly not exceed 10 annas, unless the present low value of money continues, when it might be 1 Rupee. Taking the present quantity at 1,44,000 tons the community are put to a needless expense of 5⅓ lacs of Rupees per annum, and the consumption of coal will of course continue to increase, this is the difference between 4¾ Rupees and 10 As. It is certain that a very moderate expenditure, perhaps 2,000 Rupees a mile on the water line or 2¼ lacs would make it a good navigation, direct to Calcutta just $\frac{1}{60}$th part of the cost of the Railway. In Rajahmundry the cost of carriage per mile in the Canals is about 1 pie for *short* distances.

2. There cannot be a greater mistake than thus to expend an enormous sum in improving land transit by which after all the cost of carriage must be ruinous while the water carriage is left in such a state from want of a mere trifle of expenditure, and when by no other means can the great traffic be carried cheaply.

Para. 5. The road traffic is so insignificant that it is matter of little consequence how those goods are carried. It *was* under 3,000 tons a year and is now under 1,000.

Para. 7. The statement of salt 70,000 tons does not seem to agree with the total quantity of goods mentioned in the table as being only 49,000 tons for the same year. This requires explanation.

Para. 8. Increase of goods traffic. The whole of it is a small amount, the total number of tons is stated at 49,000 tons, but it is not stated what is the average distance it is carried; probably not 50 miles, in which case the average quantity carried along the whole length of rail does not exceed 20,000 tons, quite an insignificant quantity in such a locality, about $\frac{1}{100}$th part of the river traffic, and one-seventh of the traffic last year on one of the Rajahmundry canals, which only connects towns of 15 to 17,000 inhabitants.

Para. 9. Passenger traffic. The total number of passengers for the year is above a million. The sum paid by each 2nd class passenger is 1 Rupee 3 Annas, and by each of the 3rd class $\frac{1}{2}$ Rupee, shewing that the average distance travelled is about 30 miles or $\frac{1}{4}$th of the whole length so that the average number of passengers on the whole line is $\frac{1}{4}$th of the total number or 250,000 per annum, equal to 800, a day. To judge of this we must as in other points compare it with known passengers traffic by other means. On the southern road out of Madras at 11 miles from the Fort the numbers were found to be 3,000 a day. On a high road in Tanjore far from a city 1,200 *men*. On a bridge four miles from Trichinopoly a city of 100,000 inhabitants 20,000 a day. By the transit boat on the Rajahmundry canal to Cocanada 100 per day, a canal leading to a town of 17,000 inhabitants. The number corresponding to this for Calcutta allowing 600,000 inhabitants should be 3,500 a day. It is evident from these that the railway only receives a small portion of the travellers, just as it is in the Madras Railway which does not convey $\frac{1}{10}$th of the travellers on that line. Thus it is certain that even as respects *passengers*, these expensive works *do not suit the country*. The charge of 3 pie or $\frac{1}{4}$ Anna or $\frac{3}{8}$ *d*. for the lowest class completely shuts out $\frac{9}{10}$th of those who require conveyance. On the Rajahmundry canals the charge is one pie and the Manager states that even that charge is sufficient to keep away by far the greater part of the travellers. These boats are now yielding 25 per cent, and it is under consideration to reduce the rates to $\frac{3}{4}$ pie as likely to be more profitable. The profits were increased much since they were reduced from two to one pie. Were these boats worked with steam instead of men, they would afford to carry very well at $\frac{1}{8}$ pie per mile, and no higher rate than that would bring the principal part of the travellers.

Of course just at the entrance of a large and wealthy city like Calcutta, there is a large number who can afford to go backwards and forwards frequently a very few miles, but the numbers diminish rapidly as the distance increases. Probably, the average number on this Railway being 800 per day, the numbers at each end are something like 1,400 at the Calcutta end and 200 at the other.

But the most important point to be observed on this subject is, that the total receipts are $7\frac{1}{2}$ lacs for a half year, out of which the 1st Class passengers pay 25,000 or $\frac{1}{30}$th part, showing that those for whom this enormous expense is incurred in order to provide them with high speed, are so far from paying their share of the expenses, that the profits from them, if any, are hardly perceptible. There cannot possibly be any mistake in concluding from this, that high speed is not what the country wants. The fact is, that the poor are paying for the rapid conveyance of a very few rich. They also travel quick themselves, but most assuredly they would much rather travel slower and pay less, but they have no option.

What the *average* passenger traffic will be as the Railway extends further, we have no data to judge, excepting that we know that in England with all its wealth, there are few travellers of long distances, the average for all England being only 13 miles for each traveller.

Probably, as the railway extends, it will carry at these prices few besides that class who in this return appear as 1st and 2nd class passengers, excepting for a few miles out of the great cities. The proportion of people who can afford to pay 8 Rupees for a journey of 500 miles will be very small.

Para. 10. The charge of $\frac{1}{8}$th of a penny here, is far higher than 1 in England. Even near Calcutta the proportional value of money is probably 4 to 1, and in the interior it is at least 6 to 1 compared with England. The price corresponding to that in England should not be more than



$\frac{3}{4}$ pie, merely allowing for difference in value of money, but the proportion of people at all well off in India, is far less than in England.

Para. 13. The greater part of the country will be totally unaffected by the railway. It is the greatest delusion to call making a single line of railway through a vast breadth of country "opening the country." Not a fiftieth part of the country is benefited by it. To open the country there must be a close network of communications. Tanjore with its 1,000 miles of just practicable roads on an area of 3,000 square miles, is incomparably more benefited than Burdwan with its 71 miles of grand railway, and the Deltas of the Godavery and Kistnah, with their 2,000 miles of water communication at $\frac{1}{2}$ to 1 pie per head or per ton a mile, are really opened up. The southern part of Burdwan, and the other districts with their wretchedly imperfect neglected water lines are immensely better off than the northern part with its one line of rail—and the cost of one or two miles of railway expended in improving the water lines would have had 100 times more effect than the whole line of railway. A comparatively most trifling sum would have given a first class steam boat communication at 15 or 20 miles an hour to Raneegunge, and at rates both for goods and passengers $\frac{1}{4}$th of those paid on the railway, and ten times the number of people would have made use of it. The vast natural advantages of this country are thus thrown away, because in England they had not what we have. The 150 lacs that have been spent on one single line of 120 miles worked at 10 pice a ton, and 3 pice a head would have completely pervaded almost all Bengal with a network of first class water-carriage to be worked at 15 miles an hour or more if wanted, and at from $\frac{1}{2}$ to 1 pie per ton and per head. Probably 5,000 miles of such communication would have been obtained, besides that in doing it, an immense area would have been secured as far as possible from both drought and flood.

It is indeed most grievous to see so monstrous a perversion of means, entirely through a want of consideration of the circumstances of the country. If we saw the Egyptians busily employed in carrying the earth from the Delta to make land on the sands of the desert, because they had heard that in some barren country the poor people were compelled to fetch earth from a distance, we should clearly comprehend their mistake, but this is exactly what we are doing. People suppose that because they have spent a great deal of money, they have necessarily accomplished a great object, but the amount of money expended may be simply the measure of the magnitude of the mistake they have made.

It is certainly no exaggeration to say that 5,000 miles of water communication carrying at rates that the poorest travellers, and the poorest goods could bear, would have conferred 1,000 times more benefit on the country than 120 miles of railway, carrying at prices only a hair's-breadth below the old rates. For instance 2 As. 10 h. for coals against 3 As. by the boats. Even were the whole traffic transferred to the railway it would be no proof of great benefit; if the diminution of charge is insignificant, the benefits are insignificant. With respect to coals also the railway has after all to discharge them into boats to be conveyed to the other side of the Hooghly, and the various points where they are wanted.

Para. 15. The natives are at least as capable of appreciating "our English idea that "time is money" as we are;" but they are too quick to think it is, when it is not. The Manchester people send $\frac{1}{12}$ths of their valuable manufactured goods at two miles an hour to Liverpool, by the canal with a railway running close to it, because they know that even in such goods 15 hours of time is not money; and the natives know well that a week in the conveyance of grain worth 3lb. a ton, is not money, at least it is only 1 A. or $\frac{1}{8}$ pie per ton per mile if it is carried 100 miles, allowing interest at 10 per cent, so that a difference of 1 pie per mile in cost of carriage,

would be eight times the loss in interest if a week of time were saved. The Americans are in this respect on a par with the Indians. While the Hudson and Lake Erie canal is closed by frost for five months together, 10,000 tons a month are carried by the railway, and as soon as the canal is opened again 300,000 tons a month are conveyed along it, so that there it is thought that five months of time is not money, for $\frac{2}{3}\frac{3}{0}$ths of the traffic is stopped in the winter, although it is at that time that all the common roads leading to the railway are in the finest working order.

With respect to the enlightened policy "of carrying cheap," the question is at how low rate the railways *can* carry. It is most certain that the bare expense of carrying by rail, where high speed trains run, is 8 or 10 times that by good water lines.*

Para. 16. Almost all the causes mentioned in this para. accounting for the small traffic by the railway, which would be greatly increased, if they were removed, are the irremediable objections to such a mode of conveyance inherent in the country. *If* goods could not be carried cheaper by water even with human power, than by land with steam power; *if* there were no water carriage; *if* Calcutta and Howrah and all the great towns and cities were not at the water's edge; *if* the nature of the country did not offer the greatest facilities for improving and extending water carriage; *if* the same circumstances did not offer essential obstacles to railway, (as for instance neither goods nor passengers being able to enter Calcutta at all by this railway &c., &c.,) *if* all these *ifs* were away, it might have been wise under such unhappy circumstances to spend $1\frac{1}{4}$ lacs on a mile of railway, but these *ifs* are unrealities and impossibilities, and the question with wise men always is, not "what should we do, *if &c.*," but *rebus sic stantibus*, what is best to be done?

Para. 18. "When the railway absorbs the vast traffic carried on by carts along the grand Trunk road and by boats on the river". With respect to the former, it is stated para. 6 to be from 165 to 185 carts per night, supposing 100 of them loaded with $\frac{1}{3}$ ton each, it would give 18,000 tons a year, a small item for a Railway. The water traffic is carried at about $\frac{1}{4}$th of the charge on the railway, how much of that will be transferred any body can judge, even supposing the unaccountable neglect of water carriage is continued, but it cannot be imagined, that under the new regime at least the immeasureable natural advantages of the country will continue to be entirely thrown away, as they have been under the old one. A mere trifle expended on even the present water lines will reduce the cost of carriage to half of what it now is, and a thorough system of water communications would reduce it to $\frac{1}{4}$th of what it now is, or to $\frac{1}{16}$th of the Railway charge.

Para. 19. "Common roads." All that is here said in the comparison of water and rail, is also in a measure true of water and road. The natural circumstances which are all in favor of water are against the roads. In Rajahmundry and Guntoor, if 80 lacs are ultimately spent, and 2,000 miles of navigable canal are obtained, the canals will have cost only 4,000 Rs. a mile, supposing that the whole were charged to navigation, but at least $\frac{3}{4}$ths should be charged to irrigation, leaving only 1,000 Rupees a mile of communication at $\frac{1}{3}$ or 1 pie a ton a mile. Whether in a similar country it is preferable to spend 1,20,000 Rupees a mile on roads, to carry at two or three annas a ton, can easily be decided.

It is nothing less than a vital question to India, what kind of communications are suitable to it. If a 1st class passenger could step into a Steamer on the Calcutta side of the Hooghly

* On the Madras line, the Consulting Engineer showed that there had been positive loss on the carriage of goods at 10 pie a ton, on the last half year, of 1857.



and go direct to Raneegunge at 15 or 20 miles an hour, he would accomplish his journey at $\frac{1}{3}$rd the cost, far more comfortably and conveniently, and as quickly as by rail, while the capital expended in completing a first class Steam boat communication would have been so ridiculously small compared with that which has been spent on the Railway, that the shareholders might be receiving 50 or 100 per cent, and instead of 800 passengers a day, 8,000 would probably have had the benefit of conveyance. In no one single respect has even a 1st class passenger an advantage in travelling by the rail, that he would not have in going by water, while all parties concerned, the travellers, and especially the poor ones, the producers, and consumers of goods, the shareholders, the Government, the whole community, would have had enormous advantages which the present line does not afford. What has been gained? the grand sight of a Locomotive with its train of carriages. But was the object of this expenditure to produce something to look at? The object was to carry goods and passengers, 1st cheaply, 2nd, at a *suitable* speed, not to have something grand to look at. Where the latter is the object, let the money be expended accordingly. But don't let us leave Calcutta with the object of going to Delhi, and travel on without observing in what direction we are going till we arrive at Madras.

It makes no difference to either the merchant, or the tea drinker, or the sugar grower, whether the sugar was carried in a grand procession, or in a poor looking canal boat, but it does concern them all whether it was carried cheaply or dearly.

And what is the difference to the poor, $\frac{9}{1}\frac{9}{0}\frac{9}{0}$th of the community. Suppose that in Rajahmundry, instead of protecting a million of people from losing their lives and their property by floods or by drought, irrigating 12,00,000 acres, conveying fresh water and cheap transit, throughout the year to every village, at a cost of 50 lacs, suppose instead of this, 50 miles of railway had been made, conveying 2 or 3 1st class passengers luxuriously, but leaving almost the whole population in every respect just where it was, liable to death by famine or flood, without communications, and in some places miles from drinking water in the hot weather. Would it have been a wise proceeding? What is applicable to one district is equally applicable to all India. How awful it would be if we were to see 100,000 people in Burdwan die of famine next year, with its grand railway passing through it. It might help to bring grain to a small portion of the district, but it *could not make the people able to purchase it.* In general the people of India do not die of famine for want of grain, but for want of money to purchase it. How poor a compensation it would be that the dying people saw daily a grand sight in the railway train, and knew that half a dozen gentlemen were travelling at a high speed. In Madras the number of 1st class passengers on the first 80 miles out of the capital is three a day, and on this line it is on an average 15 a day on the first 120 miles out of such a city as Calcutta.

With respect to the profits to the shareholders, the present statement does not show what they are. The balance, after deducting the *stated* expenses is 7,000 Rupees a mile, or 6 per cent on $1\frac{1}{4}$ lac. But *nothing is allowed for the two great items of repairs and depreciation.* All the works being comparatively new, the present cost of the former is of course trifling, and nothing is allowed for the latter. I suppose these two items would considerably reduce the apparent profit.* As the railway extends, the traffic on the present part will of course increase, but it by no means follows that the *average of the whole* will be greater than the average of the first 120 miles out of Calcutta, for the number of passengers going to and returning from the capital a few miles is enormous, compared with what it will be at a distance from any great city.

But we have now abundant data for this conclusion, that the returns, whether direct to the shareholders, or indirect to the community, will be utterly insignificant from a lac of Rupees

* On the whole of the Railways in the State of Massachusets in America, the repairs of roadway alone is in a series of years $2\frac{1}{4}$ per cent., to which must be added that of keeping up the rolling stock.

expended on a mile of railway, compared with that from the same sum expended on 25 miles of irrigating and navigable canal. And it is equally certain that the amount of these returns direct and indirect is the *true measure of the value of any works for the material improvement of the country.* "But why not do both?" Surely reason requires that we should rather ask, "why should we do both?" If we know how to spend any amount of money, so as to yield directly and indirectly 200 per cent "why should we" waste any part of it on schemes which would not yield 20.

If a merchant discover a way of employing his capital so as to return 20 per cent does he say "why should I not" employ part of it in another scheme which he knows will only yield two per cent.

2ndly. But the case of the railways is far worse than this, because it keeps all parties under the delusion that they are "opening India," and thus prevents their doing any thing else. But for this unhappy delusion, something would certainly have been done during the last ten years towards "opening India". For instance, most assuredly we should have had large steam flotillas on the rivers, which would have prevented $\frac{99}{100}$ths of the horrors and consequences of the late revolt.

Undoubtedly so far as the material welfare of India is concerned, no question can compare with this in importance, what is to be done in future? will the Home Authorities continue to guarantee interest on any number of millions to be employed in making railways, while they continue to refuse the same to capital employed in navigation and irrigation.

The question is now before the Home Authorities in several ways, and they have so far given way, as to grant an annual sum for the navigation of the Indus, which was refused by them on the decision of the late Governer General ten years ago. The question indeed is now becoming so urgent, that it will no longer be possible to defer a decision upon it.

A new case has now arisen. Which should be done; should a million be expended on a hundred miles of railway in the direction of Midnapoor, or should the same sum be expended on a canal from Calcutta by Midnapore to Cuttack and the Chilka, with the irrigation of $2\frac{1}{4}$ millions of acres lying between that line and the sea; rescuing the magnificent Deltas of the Mahanuddee, Braminy, &c., with their two millions of inhabitants from their present shameful state of exposure to drought and flood, and giving them 2,500 miles of water transit?

Upon the Delta of the Godavery 30 lacs have been expended, the revenue this year is about 10 lacs above the average of years before the works, and more than 60 lacs of excess of revenue have been received since the works were begun, or 30 more than the whole sum expended; and only about $\frac{1}{7}$th of the land watered yet pays any water rate, and the benefits to the people are of the value of a far larger sum. Compare this with the results of the Railways. What is the next excess of actual receipts over expenditure in their case? While $1\frac{1}{2}$ millions have been expended on the part of the Calcutta line finished have three millions been received? The statement shows a total excess of receipts over current expenditure of 16 lacs up to the end of 1857 or $\frac{1}{9}$th part of that sum, and certainly the proportion of benefits to the community are in a still smaller proportion. On the Madras line the results are far worse, and on the Bombay certainly not better than in this. And in all these cases, it is the first piece out of a capital city on which all the traffic of various main lines of country is concentrated. What will be the result in some of the distant and thinly populated parts of the country? Most certainly they won't pay the expenses of stations.

It is surely high time fairly to consider this vital question. It cannot possibly be deferred much longer.

(Signed) A. COTTON, Colonel,
*Commandant of Engineers.*



25

EAST INDIAN RAILWAY.

Statement of Traffic.

| Period. | No. of Passengers. 1st Class. | No. of Passengers. 2nd Class. | No. of Passengers. 3rd Class. | Tons of Goods Coal. | Tons of Goods Sundries. | Receipts of Passengers. 1st Clas. | Receipts of Passengers. 2nd Class. | Receipts of Passengers. 3rd Class | Receipts of Coals and Goods. Sundries. | Total receipts. | Gross expenditure. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Second half 1855.. | 4,966 | 26,564 | 3,14,137 | 13,217 | 4,833 | 17,440 15 ,, | 34,705 6 3 | 1,59,751 11 | 24,099 11 10 | 1,27,940 6 ½ | 3,63,938 1 10½ | 1,61,404 13 6 |
| First Half 1856.... | 6,379 | 23,137 | 4,00,123 | 19,443 | 13,811 | 28,886 2 ,, | 29,463 12 2 | 1,98,243 | 31,783 11 7 | 2,19,543 15 6 | 5,07,921 1 9 | 2,06,951 10 10¾ |
| Second Half 1856. | 6,562 | 25,702 | 4,30,162 | 23,864 | 20,897 | 26,439 14 ,, | 32,678 6 10 | 2,07,744 | 23,362 7 7 | 2,40,376 8 5 | 5,30,601 8 8 | 2,18,944 2 5 |
| First Half 1857.... | 6,906 | 26,181 | 5,32,024 | 46,462 | 22,142 | 29,089 6 9 | 34,874 ,, ,, | 2,43,597 | 49,824 7 7 | 3,41,024 7 8 | 6,98,410 13 2 | 2,63,241 4 2 |
| Second Do. ..... | 7,026 | 26,389 | 4,89,171 | 44,292 | 27,083 | 25,516 1 ,, | 32,626 2 8 | 2,39,762 | 93,444 2 6 | 3,61,717 ,, 4 | 7,53,066 5 8 | 3,27,515 9 1 |

E and O. E.
(Signed) FRED. COX,
*Traffic Manager.*
(Signed) W. ELLIOT,
*Commissioner of the Burdwan Division.*

Hoogly, 15th April 1858.

(True Copy)
(Signed) EDWARD PALMER,
*Agent.*

*Comparison of a Railway from Calcutta to Raneegunge, with water communication in the same line.*

| | Railway. | Water Communication. |
|---|---|---|
| Length | 120 Miles | 120 Miles. |
| Cost per mile | 1,20,000 Rupees | |
| Do. improving Damoodah | ..... | 2,000 Rupees. |
| Do. complete Canal | ..... | 10,000 do. |
| Total Cost | 150 | Lacs. |
| Do. improving Damoodah. | ..... | 2½ Lacs |
| Do. complete Canal | ..... | 12 do. |
| Charge for interest at 5 per cent | 7½ Lacs | |
| Do. in Damoodah improved | ..... | 12,500 Rupees. |
| Do. in complete Canal | ..... | 30,000 do. |
| Speed 1st Class Passengers | 17 Miles | 15 Miles. |
| 2nd | 17 „ | 12 do. |
| 3rd | 17 „ | 8 do. |
| Goods | ..... | 15 to 3 do. |
| Coals | ..... | 6 do. |
| Train 1st Class | 7 | 8 |
| 2nd | 7 | 10 |
| 3rd | 7 | 15 |
| Goods | ..... | 8 to 40 |
| Coals | ..... | 20 |
| Charge 1st Class | 18 P | 6 P. |
| 2nd | 9 | 3 |
| 3rd | 3 | 1 |
| Goods | 8 | 1¼ |
| Coals | 8 | 1½ |
| Total charge for 120 miles. | | |
| 1st Class | 11¼ Rupees | 3¾ Rupees. |
| 2nd | 5½ „ | 1½ do. |
| 3rd | 2 „ | ½ do. |
| Goods | 5 „ | 1 do. |
| Coals | 5 „ | 1 do. |
| Nos. of 1st Class Passengers | 15 per day | 150. |
| 2nd do. | 40 | 500. |
| 3rd do. | 740 | 7,000. |
| Tons of Goods | 20,000 per | 200,000. |
| Coals | 90,000 | 300,000. |
| Profits deducting 2 per cent from the stated profit on the Railway for repairs and depretiation | 4 per cent | 40 per cent. |
| Saving to the community on present traffic only | | |
| Passengers 1st Class | ..... | 35,000 Rupees. |
| 2nd | ..... | 50,000 |
| 3rd | ..... | 4 Lacs. |
| Goods | ..... | 2 do. |
| Coals | ..... | 3½ do. |
| No. of places for receiving and discharging | 20 | Every point. |
| Terminus | One on the Howrah side | Every point on the Hooghly the Canals, &c. |

The estimated cost of construction and of working the water line is taken from the known cost of canals in similar situations, and the estimate of numbers of passengers and tons is made from the reduction of charge. The cost of the Banka canal was 1,500 Rupees per mile, the sum here allowed is 10,000 Rupees. The tons of goods passing down the Rajahmundry canal to a town of 17,000 inhabitants is 1,50,000 and it increased by 60,000 tons last year; the quantity here estimated to a city of 6,00,000 inhabitants is only 200,000 tons.

(Signed) A. COTTON, Colonel,
*Commandant of Engineers.*



No. 88. ORDER THEREON, No. 2698; dated 14th December 1858.

Resolved that the above letter and Memorandum accompanying it, as well as the Resolution of this Government dated 13th September 1858, No. 1878, to which they have relation be forwarded to the Government of Bombay in reference to Mr. Secretary Hart's letter dated 20th July 1858, No. 2065.

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No. 89. Ordered in consequence that the following letter be despatched.

From W. H. BAYLEY, Esq., Acting Secretary to the Government of Fort Saint George, ; to W. HART, Esq., Secretary to the Government of Bombay, dated 14th December 1858, No. 2699.

SIR,

I am directed by the Governor in Council to convey to the Right Honorable the Governor in Council of Bombay the thanks of this Government for the papers transmitted with your letter of the 20th July 1858, No. 2065, and to forward at the same time a copy of the Resolution passed on that communication, as well as of a letter and Memo, submitted by Colonel A. Cotton in reference to it on the proposed Railway in the Southern Marattah Country.

Extract Minutes of Consultation 13th September 1858, No. 1878.
From Colonel A. Cotton with printed Memo.

*Statement of Revenue, Exports, &c. of the Districts of Rajahmundry, from ten years before the new works of Irrigation and Navigation, to 1857-58, taken from the Returns furnished by the Collector and Civil Engineer.*

| Years. | Total Revenue of District. Annual. | Total Revenue of District. Averages. | Price of Rice per Ton. | Bullion re-circulated from Treasury. Annual. | Bullion re-circulated from Treasury. Averages. | Balance of Bullion. Against District. Annual. | Balance of Bullion. Against District. Averages. | Balance of Bullion. In favour of District. | Imports by Sea. Grain only. | Imports by Sea. Average. | Imports by Sea. Total Imports. | Cloth. | Exports by Sea. Averages. | Exports by Sea. Total Exports. | Exports by Sea. Averages. | Expenditure on Public Works. | No. of boats passing Main Channel to the Port of Coringa. | Total No. of boats passing the three Main Channels from the Weir. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 14 | 15 | 16 | 17 | 18 | 19 | |
| | £ | £ | £ S. | £ | £ | £ | £ | £ | £ | £ | £ | £ H | £ | £ | £ | £ | | | |
| 1836-7 | 216,000 | | 4—1 | 124,000 | | 92,000 | | | | | | 44,000 | | 69,000 | | 900 | | | Insufficient rain. |
| 7-8 | 214,000 | | 4—9 | 111,000 | | 103,000 | | | | | | 41,000 | | 65,000 | | 590 | | | Unseasonable rain. |
| A 8-9 | 173,000 | | 6–19 | 78,000 | | 95,000 | | | | | | 43,000 | | 43,000 | | 1,690 | | | Hurricane and inundation of the sea causing much damage. |
| 9-0 | 174,000 | | 5–10 | 74,000 | | 100,000 | | | | | | 19,000 | | 36,000 | | 1,980 | | | Extreme distress these two years. |
| 1840-1 | 174,000 | | 5—2 | 74,000 | C | 100,000 | D | | | | | 21,000 | | 30,000 | | 4,080 | | | Scanty rain. |
| 1-2 | 210,000 | 196,000 | 3—3 | 18,000 | 98,000 | 121,000 | 98,000 | | | | | 17,000 | 36,000 | 46,000 | 57,000 | 1,720 | | | Seasonable weather. Abundant crops. |
| 2-3 | 196,000 | | 2-17 | 95,000 | | 101,000 | | | | | | 16,000 | | 57,000 | | 1,220 | | | Ordinary season. |
| 3-4 | 173,000 | | 2-13 | 106,000 | | 67,000 | | | | F | | 11,000 | | 64,000 | | 3,780 | | | Sayer abolished. Great distress from severe (river) floods. |
| 4-5 | 233,000 | | 2-18 | 127,000 | | 106,000 | | | 19,000 | | 23,000 | 10,000 | | 73,000 | | 3,420 | | | Favorable year. |
| B 5-6 | 200,000 | | 4—5 | 106,000 | | 94,000 | | | 25,000 | 22,000 | 39,000 | 14,000 | | 91,000 | | 4,470 | | | Scanty rain. |
| 6-7 | 242,000 | | 4—5 | 154,000 | | 89,000 | | | 19,000 | | 41,000 | 40,000 | | 137,000 | | K 24,400 | | | Abundant produce. |
| 7-8 | 250,000 | 237,000 | 3–19 | 159,000 | 150,000 | 91,000 | 87,000 | | 34,000 | 23,000 | 64,000 | 18,000 | 93,000 | 110,000 | 114,000 | 18,700 | | | Do. Two Talooks received water. |
| 8-9 | 233,000 | | 3–11 | 132,000 | | 101,000 | | | 23,000 | | 44,000 | 12,000 | | 115,000 | | 27,500 | | | Heavy (river) floods and inndations. Considerable loss. |
| 9-0 | 224,000 | | 3—7 | 157,000 | | 67,000 | | | 17,000 | | 33,000 | 15,000 | | 96,000 | | 18,200 | | | High floods. Ponasa failed. Rice crop abundant. |
| 1850-1 | 242,000 | | 3—3 | 148,000 | | 94,000 | | | 12,000 | | 30,000 | 16,000 | | 140,000 | | 24,100 | L | | Ordinary year. |
| 1-2 | 245,000 | 245,000 | 2–18 | 159,000 | 197,000 | 86,000 | 48,000 | | 9,000 | 7,000 | 35,000 | 13,000 | 140,000 | 131,000 | 154,000 | 16,600 | 752 | | Rain abundant. |
| 2-3 | 250,000 | | 2–17 | 233,000 | | 17,000 | | | 3,000 | | 23,000 | 11,000 | | 163,000 | | 33,700 | 2,300 | | Very high floods. Damage inconsiderable. |
| 3-4 | 244,000 | | 5–11 | 247,000 | | | | 3,000 | 4,000 | | 26,000 | 16,000 | | 183,000 | | 36,900 | 7,400 | 11,300 | Drought and consequent high prices. |
| 4-5 | 251,000 | | 4–15 | 250,000 | | 1,000 | | | 8,300 | E | 45,000 | 13,000 | | 163,000 | | 45,300 | 8,300 | 18,800 | Heavy rains and high freshes. |
| 5-6 | 259,000 | | 4–12 | 266,000 | | 7,000 | | | 1,700 | 6,000 | 57,000 | 11,000 | 164,000 | 190,000 | 176,000 | 47,400 | 9,400 | | Rains moderate; singular failure of freshes in the Godavery. |
| 6-7 | 268,000 | | 4—8 | 236,000 | | 32,000 | | | 10,000 | | 75,000 | 13,000 | | 175,000 | | 59,900 | 13,400 | | Not reported. |
| 7-8 | 2,750,000 | N | 4—7 | | | | | | | | 51,000 | 13,000 | 280,000 | 293,000 | 293,000 | | 9,600 | M | Scanty rains. |
| | | | | | | | | | | First 5 months of 1858-9 | | 1 | | | | | | | |

A. Some trifling repairs began this year.

B. The great works began this year.

C. These sums show the amount of bullion paid out of the Treasury within the district on account of 1st, Government establishments; 2nd, Public works; 3rd, Private Drafts granted for money paid into the Treasury at Madras.

D. The balance of bullion sent out of the district.

E. The Import of food is now insignificant.

F. The Imports exclusive of grain were about £10,000 a year, they are now about £60,000 showing that as the district has more to sell, it buys foreign articles more extensively.

H. The Cloth trade has declined through the competition of England, and is not much affected by the state of the district.

I. The exports excepting cloth are almost exclusively agricultural produce of the district; the increase was last year £244,000 above the former average of 36,000, or nearly eight fold. It is a bona fide increase of Income to that amount, and £160,000 more than the increase of Revenue paid to Government. This is beside Exports by Land.

K. The sums from this date are those expended on new works only; they amount to £352,000 which includes all new works in the upper Talooks as well as the Delta, and also in half of Masulipatam.

L. This is the number of boats. The average tonnage of the boats is probably more than doubled, and there were besides 2,230 rafts of timber and bamboos; estimated tons carried 150,000 in 1856-7.

M. This Canal was closed for 3 months.

N. The increase of Revenue in Rajahmundry alone has been £80,000 and probably more than £10,000 in Masulipatam, about 40 per cent upon the old Revenue, and 25 per cent upon the outlay. But by far the greater portion of the lands watered have yet paid no water rate, and only 2 Rupees an acre for one crop, where it is levied. At the same rate fully £100 000 more Revenue would be paid, if the rate was lowered on all the lands. And the water carriage is all free, about 1,000 miles of connected Canal and River.

*Compo[rison] of the two Years 1845—6 and 1857—8.*

| Years. | Rice per Ton. | Revenue. | Exports of Produce. | Collector's Remarks on the Seasons. |
|---|---|---|---|---|
| | | £ | £ | |
| 1845-6 | 5s. | 200,000 | 77,000 | Scanty rains. |
| 1857-8 | 7 | 275,000 | 280,000 | Do. |
| | e or nt. | 75,000 | 203,000 | |
| | | 37½ | 260 | |

That is in similar good seasons, before and after the Works, the Revenue now is 37½ per Cent. higher and the Exports 260 per Cent. greater than in the period.

*Comparison of the years 1841—2, and 1855—6.*

| Years. | Price of Rice per Ton. | Revenue. | Exports of Produce. | Collector's Remarks on the Seasons. |
|---|---|---|---|---|
| | | £ | £ | |
| 1841-2 | £3—3s. | £10,000 | 29,000 | Seasonable weather Abundant Crops. |
| 1855-6 | 4—12 | 279,000 | 170,000 | Rains moderate, singular failure of freshes in the Godavery. |
| | Increase or | 49,000 | 141,000 | |
| | per Cent. | 23 | 490 | |

That is in similar good seasons (when such works are least required.) The Revenue lately was 23 per Cent. higher and the Exports 490 per Cent. higher than before the Works.

*Comparison of the years 1841—2 and 1857—8.*

| Years. | Price of Rice per Ton. | Revenue. | Exports of Produce. | Collector's Remarks on the Seasons. |
|---|---|---|---|---|
| | | £ | £ | |
| 1841-2 | £3—3s. | 210,000 | 29,000 | Seasonable weather Abundant Crops, but large Imports of grain from Arracan. |
| 1857-8 | 4—7 | 275,000 | 280,000 | |
| | Increase or | 65,000 | 251,000 | |
| | per Cent. | 32 | 870 | Scanty rains. |

That is in a year of scanty rain, the Revenue is now 32 per Cent. higher, and the Exports of produce 870 fold greater than in a n abundant season before the Works.

From Colonel A. COTTON, Commandant of Engineers; to T. PYCROFT, Esq., Chief Secretary to Government, dated

Sir,

I have the honor to transmit a memorandum, on the proposed Railway in the Southern Mahratta country, in obedience to the orders of Government dated 13th Sept. 1858, No. 1878.

I have in many late papers respectfully requested the earnest attention of Government to this fundamental question, the question of how money should be expended for the material improvement of India.

This proposal of the Bombay Government seems to bring us fully to an issue on it.

Will three millions expended on a Railway from Hyderabad to Beitkul, relieve that tract of country from its principal material evils? on the one hand; or on the other, will it, as I think I prove, be the most effectual step that could be taken to prevent that tract from ever obtaining the essential benefits of cheap production and cheap transit?

Most certain it is, that if the latter is the effect of spending money upon a Railway there, every additional million that is spent in this way, is an additional obstacle thrown in the way of the relief of India generally from its main material evils! The Railway interest is already very considerable, and its very existence depends upon its succeeding in depriving India of cheap transit, and it is absurd to expect that its influence will not be courted to resist that which is certainly directly antagonistic to it. And so also with respect to the other great fundamental point of finance.

Will this three millions if spent on a Railway afford a great and important relief to the at present insolvent state of the Government? or will it add a further permanent burthen of £150,000 a year? (for I doubt whether this Railway will pay its expences.)

This Government has in its most important Despatch of the 15th May last clearly declared the conclusion, which its ample experience had brought it to, that expenditure on Hydraulic works was extraordinarily remunerative, and would afford a complete relief to the finances.

Such a declaration from the only authorities in India who could give it from their own knowledge and experience, seems to me to be of the very first importance, but not second to it I think will now be as decided a protest against the proposed extension of the railway system to the Southern Mahratta country, if, as I cannot but hope, the facts and arguments of this Memorandum are sufficient to satisfy them, that my conclusions are in the main sound, as to the effects of such a work in that locality.

I look upon this opportunity asone of the most valuable that could be offered to India's authorities. A decided stand now made will certainly secure at length a real examination of this vital point, and I am quite sure nothing more is required than a real examination to satisfy every body who is willing to be satisfied about it.

The late Secretary to the Government of India in the D. P. W. was certainly right when he protested against "adverse discussion" on the Railway question; nothing but its suppression could secure the further expenditure of millions on works, which would shut out India from cheap production and cheap transit, and thus effectually prevent it from meeting other lands on equal ground in the markets of the world.

*Commandant of Engineers.*

Before this has been printed
for his signature, Col. Cotton
left the Presidency, and the memorandum
will have therefore to be submitted
on his return.

No. 2698 C. W. D. 33

Extract from the Minutes of Consultation
Under date the 14th December /58

Read the following letter
from Colonel A. Cotton
Commandant of Engineers

(Here enter 28th October 1858)

Resolved that the
above letter and memorandum
accompanying it, as well
as the resolutions of the Govt
dated 13th September 1858 No 1878
to which they have relation
be forwarded to the Government
of Bombay in reference to
Secretary Barr's letter dated
20th July 1858 No 2065.

W. H. S

Public Works Dept
Camp 14th December.

No. 2932

From Colonel A. Cotton
Commandant of
Engineers.
To P. Willoughby Esqr
Secy to Govt

Submits for consideration
the Enclosed Application
of the Bombay Harbour Steam
Ferry Co. Burdett Fontaine
Bentley. Requests
Explanation in Relation
and advocates the
measure as worthy
Genl. Govt Encouragement
Bentley's Work
Mr Langford
Chief Engr

No. 2698 dated 14th Dec. 1858.

Dft. from 14th Dec. 58 to 28/12/58

1087

Q. M. Genl's Office

Pol. Sec. Works 1858 Despatch
Cons. 14th December.

No. 2698.

To
Extract Mins of Cons.
of 14th December 1858.

From Col. Colleton Commandt of
Sangor 8th Dec. 58 - No 3098 in Cons. 11th Jany 59

To Govt of Bombay - 10th Jany 59.

Forwarding to the Government
of Bombay correspondence on the pro-
posed Railway to the Southern
Mahratta Country.

No 87-88-89.

With Letter to the Govt of
Bombay - No 2699 - of 14th Dec. 58.



Pol. Sec. Letter
Govt of India
No. 2699.

To

W. Hart, Esqre
Secretary to the Government
of Bombay.

Sir,

I am directed by the Governor in Council to convey to the Right Honorable the Governor in Council of Bombay the thanks of this Govt for the papers transmitted with your letter of the 20th July 1858 No 2065, and to forward at the same time a Copy of the Resolutions passed on those Communications, and of the letter and Memo: submitted by Colonel Colleton in reference to it on the proposed Railway in the Southern Mahratta Country.

Pol. Sec. 13th Sept. 1858 No 1878
From Colls Colleton with printed
Memo

Fort St George
11th December 1858

W. H. B.

Public Works 1858 Dept.
Cons 14th Dec.

No 2699.

To the Secretary to the
Govt of Bombay.
Dy 14th Dec 58.

Rd 16 Jany 59.

No 89.

Forwarding to the
Government of Bombay
correspondence on the pro-
posed Railway to the
Southern Mahratta
Country.