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MADRAS RECORD OFFICE.

Government of Madras.

Public Works DEPARTMENT.

G.O. No.	Press / Mis.
Dated	18

Not to be folded or roughly handled

Proceedings of the Madras Government, Public Works Department, 30th September 1862.

Read the following papers :—

No. 528. Read the following Despatch from the Right Honorable Sir C. WOOD, Bart., Secretary of State for India (Railway), to His Excellency the Honorable the Governor in Council, Fort Saint George, dated India Office, London, 30th June 1862, No. 8.

SIR,

1. With reference to the letter No. 299, herewith forwarded, addressed by the Directors of the Madras Railway Company to their Agent in India, on the subject of the improvement of Beypore Harbour, I think it necessary to acquaint you that, while authorizing its transmission I informed the Board that I was not to be considered as in any way pledged to the views expressed in it.

2. I have no intention to re-open the question (which was disposed of in my Public Works Despatch of the 1st December 1859, No. 40), of incurring a considerable expenditure to enable ships to discharge cargo and passengers at Beypore at all times during the south-west monsoon, but I will not object to consider any plan that you may be prepared to recommend for improving at a moderate cost, the natural advantages of Beypore as a Boat Harbour available during nine months of the year.

From J. WALKER, Esq., Managing Director, to the Agent and Manager, Madras Railway Company, Madras, dated Madras Railway Company, 33, new Broad street, London, 27th May 1862, No. 299.

SIR,

1. The completion of the Railway between Madras and Beypore, and the importance of making it available for the conveyance of mails and passengers to and from Europe, have given additional and more pressing interest to the question, which has been under consideration ever since its commencement, of improving the Port of Beypore so as to admit of goods and passengers being safely shipped or landed during the S. W. monsoon, as they already are with so great facility during the other nine months of the year. Without going back to the earlier correspondence that passed on this subject, it may be useful in again calling attention to it, with the view of your bringing it before Government, to advert to the proceedings that have taken place since Mr. Lovell's survey and report in April 1858, which showed that the object might be attained by forming a Boat Harbour south of the river mouth, by converting the island and rocks which there lie parallel to the shore into a break-water, within which boats and vessels of small burthen could enter at all times and load or discharge in safety. The natural provision which already exists for this purpose is, we observe, at present taken advantage of whenever the freshes in the river and the surf on the bar render its entrance dangerous; and our Officers have by this means landed cargo from ships in the Roads in every month of the monsoon but August, though not without difficulty and interruption when the weather was more stormy than usual.

2. Mr. Lovell's plans were approved and supported by Mr. Heppel, our then Chief Engineer, who observed that they had the great advantage that in adopting them we see our way with tolerable clearness to our object, inasmuch as what we do is only to promote by a moderate amount of artificial appliance the completion of a state of things already in great part effected by nature; while in attempting to improve the harbour by removing the bar, we should have to combat a natural obstacle, which would in all probability, if temporarily subdued, be found to exert persevering efforts to re-establish itself. The cost of carrying out Mr. Lovell's plan was estimated at about a lakh of Rupees.

3. These results of Mr. Lovell's survey were laid before the Government by the Agent, with a letter urging the importance of proceeding simultaneously with the harbour works and railway; and he again in September following, in consequence of a letter from the Board, requested the attention of the Government to the subject, pointing out the acceleration to be effected in the communication with England, by sending the Calcutta and Madras mails viâ Beypore on the opening of the railway.

4. In May, 1859, the Madras Government, referring to the opinion expressed by the Secretary of State, that "the time has arrived for taking active measures for improving the Port," resolved to take immediate steps for the construction of a harbour sufficient to secure the safe landing and shipment of the overland mails and passengers; and their Consulting Engineer stated in his letter of the 10th June, that by these means a saving of time of some four days in the transit will be effected.

5. The Government of India, however, while fully admitting that it is desirable to render Beypore as commodious and accessible as possible, doubted if the proposed boat harbour would meet the object in view, or the estimate of its cost prove sufficient, and directed further enquiry to be made. The questions were referred by the Madras Government to the Public Works Department, but their reply does not appear to have been communicated to our Officers.

6. A Despatch from the India Office, however, of the 1st December 1859, informed the Madras Government that the Secretary of State's views on the subject of improving Beypore Harbour had been greatly modified by the information furnished; the estimate having more than tripled, the depth of water only sufficing for very small vessels, and great doubts being entertained if Steamers even could safely anchor off in the monsoon months. Under the circumstances, nothing was directed to be done further at that time.

7. In April 1861, the Government Consulting Engineer forwarded copies of correspondence received from the Government of India, relating to the proposed boat harbour, to be laid before Mr. Lovell for his report. Accompanying these, was a letter from the Secretary of the Government of India, dated 13th February 1860, forwarding copy of a report by Lieutenant Taylor, and suggesting his being sent to Beypore "to concert with the Railway and Government "Engineers the measures most proper for securing the greatest possible advantage to the "Beypore terminus," adding that, "although the former scheme has not proved so promising as "was expected, the Government of India regard the subject with interest, and will be prepared "to give their cordial support to any suitable scheme for fostering the trade of that Coast in "connection with the Railway."

8. On the 17th of May, Mr. Lovell, in reply to this reference, drew up a second report, in which he maintains the accuracy of his original estimate of the cost of executing his plans for the formation of an adequate boat harbour, although on account of the increase in the rates of labour, &c., which has since taken place, and as a very liberal estimate, he would now say £15,000 for the work. With regard to the doubts expressed whether steamers could safely anchor off during the monsoon, he refers to the case of the ship "Argaum," which was in the roads during the burst of the monsoon in 1858, and rode in safety with only one anchor down, not dragging an inch. After ten days the stormy weather subsided, and her cargo was landed in safety. Mr. Lovell, after the experience of three monsoons at Beypore, could not think that a steamer would run any extraordinary risk in lying off the port during that season; and his conclusions have since been confirmed by the experience of the monsoon of 1861, when the two vessels "Chalmers" and "Eudora," not only stood the burst of the monsoon without damage or apparent danger, but remained on in the roads, discharging cargo at intervals, till the 18th of July, when they left for Bombay.

9. Mr. Lovell appears to us to have satisfactorily met other objections made by Captain Rennie and Lieutenant Taylor, and to have shown that the chief of these might equally be brought against Madras as a landing port. Comparing the two, he considers that Beypore in every respect surpasses it as to the facilities for landing or shipping,

10. Mr. Ross in forwarding this report has stated that from his personal acquaintance with Beypore and frequent opportunities of discussing the matter there with Mr. Lovell, he is able to uphold to a great extent that Officer's views with reference to the proposed boat harbour, and has no doubt that his estimate of the cost is a correct one.

11. The only point on which it appears to the Board that any ground of doubt remains as to Mr. Lovell's plan, is the proposed connection of the Break-water with the main land by a solid embankment along the bank of sand at the northern extremity of the boat harbour. Lieutenant Taylor, as the result of his experience of the winds and currents on the Coast, has expressed his

opinion strongly against closing this opening, as likely to cause the silting up of the harbour. Mr. Lovell has stated in reply his reasons for retaining his opinion that no such result would follow, while the effect would incontestably be beneficial in confining and directing the scour of the river in the monsoon against the bar. It is to be regretted that the suggestion of the Government of India to send Lieutenant Taylor to Beypore to concert with Mr. Lovell was not carried into effect, so that a common understanding might have been arrived at. Additional observation may by this time, however, have set these doubts at rest, or confirmed the expediency of restricting the cross embankment as proposed in Mr. Ross' letter of the 30th May 1861. If a solid barrier be objectionable, and a communication between the break-water and the shore be deemed desirable, a structure on screw piles might be substituted.

12. But in any event, with so much evidence of the feasibility of making at a comparatively small cost, a boat harbour which will render the terminus of the Railway on the Malabar Coast a safe and certain point for embarking and disembarking passengers, mails, and goods, throughout the year, the Board cannot doubt that the Government, on your bringing the question again before them, will at once proceed to satisfy themselves as to the accuracy of our Engineer's statements and estimates, and if so satisfied, that they will lose no time now in carrying the plans into execution. The importance of the object in view has been too fully recognized by the Home Government, the Government of India, and the local Government, to require further observation.

Transferred to the Public Works Department for consideration.

Fort Saint George,
The 1st August 1862.

(Signed) A. J. ARBUTHNOT,
Acting Chief Secretary.

No. 529. Extract from the Proceedings of the Madras Government, Financial Railway Department, dated 12th August 1862, No. 431.

RAILWAY DEPARTMENT.

CONSULTING ENGINEER'S OFFICE.

No. 133.

On letter from the Agent and Manager of the Madras Railway Company, No. 508, dated 30th July 1862, forwarding a copy of letter to his address of the 27th May 1862, from the Managing Director, and Extract of Letter from the Honorable Sir Bartle Frere, dated 8th May 1862.

Observations by the Acting Deputy Consulting Engineer in charge.

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1. The Agent remarks on the subject of improving the Port of Beypore so as to admit of passengers, goods, &c., being safely shipped and landed in the monsoon, that his hopes of the ultimate success of the South West Railway, rest mainly on the benefit expected to accrue from the Line forming part of the through route between England and Calcutta. He believes, from personal observation, and the experience of his Officers, that the landing at Beypore could be effected at all seasons of the year, with as much facility, as is now the case at Madras; and trusts that only a comparatively small outlay will be requisite for this object, as proved beyond a doubt by the 8th paragraph of Mr. Walker's letter. The Agent suggests arrangements being made for the Calcutta and Bombay mails passing though Beypore, when he will be prepared to run special trains, from Madras and Beypore, on the arrival of the Steamers, performing the journey, between the two Coasts, in sixteen hours. He understands that the present contract with the P. O. Company, lapses at the end of this year, and therefore considers it advisable to take prompt measures for a reference to the Home Authorities.

2. Mr. Walker, the Managing Director in London, reviews the correspondence that has passed, on Mr. Lovell's project for forming a boat harbour at the mouth of the Beypore river, and concludes with the hope that the Government will, on the question being again brought before them, satisfy themselves as to the accuracy of Mr. Lovell's statements and estimates, and, if so satisfied, will lose no time in carrying the plans into execution. The papers referred to by Mr. Walker have all been before Governmemt. Mr. Lovell's last report of the 17th May

1861, having been published with the Order of Government, No. 517, of the 9th July 1861. This latter Order was communicated to the Agent of the P. and O. S. N. Company, for his information, and in continuation of the Government Order, No. 303, of the 20th April 1861, to the effect, that "it will be for the consideration of that Company, whether they will run Steamers "between Beypore and Aden."

3. The records of this Office do not show that any proposal has been made by the Agent of the P. and O. Company, regarding their Steamers touching at Beypore; and as the Railway Board adduce no fresh arguments in favor of the scheme, no opinion appears to be called for now, from the Consulting Engineer. For this reason, although the subject is of much importance, I forward these observations of my own, without incurring the delay of sending papers to Captain O'Connel, who is now on a tour of inspection on the North West Line.

4. The Government may probably approve of Sir Bartle, Frere's suggestion to Mr. Elwin, as to taking the opinion of some first rate Harbour Engineer in England and as Mr. Lovell has lately gone Home, he is on the spot to give verbal explanations.

Madras,
2nd August, 1862.

(Signed) H. L. PRENDERGAST, Cap ain,
Acting Deputy Consulting Engineer,
for Railways, in charge.

From R. B. ELWIN, Esq., Agent and Manager, Madras Railway, to Captain P. P. L. O'CONNEL, Acting Consulting Engineer for Railways, dated Madras, 30th July 1862, No. 508:—

SIR,

1. I have the honor to bring under the notice of Government, a communication received from the Managing Director of this Company No. 299, dated 27th May 1862, but which only reached me by the Bombay Mail on the 28th instant, on the subject of improving the Port of Beypore so as to admit of passengers, goods and mails being safely shipped and landed there during the monsoon.

2. As Mr. Walker has gone so fully into the question in his letter above quoted, I do not deem it necessary to do more than offer a few remarks, feeling sure that the Government are quite alive to the importance of improving Beypore as a Harbour, so as to render the South West Line of this Company capable of becoming part of the highway between England, this Presidency, and Calcutta.

3. Since the communication by Railway from the one Coast of the Indian Peninsula to the other, has been completed. I have devoted much time and attention to the question of traffic, and my hopes of the ultimate success of the undertaking rest mainly upon the benefit which I confidently expect to accrue from our Line forming part of the contemplated through route.

4. Having heard so much of the dangers of the Western Coast during the south-west monsoon, and the utter impossibility of vessels being then able to lie off Beypore, I have made it my business to visit this end of our Line three times since the commencement of the present rains, and on neither occasion have I witnessed the surf equal to that which is to be seen at Madras every day in the year.

5. I confidently believe from personal observation, backed by the experience of our Officers who have resided at Beypore 5, 6, and 7 years, that the difficulties attending the safe landing of passengers and goods at all seasons of the year, exist only in the imagination of a few; and that the transfer of mails, passengers and goods from the ships lying in the Roads of Beypore into Masula Boats, could be effected with as much facility and ease as is now the case at Madras, especially if by operating on the bar we could secure a deep water entrance into the river.

6. The 8th paragraph of Mr. Walker's letter will prove, I trust, beyond a doubt, that no insurmountable difficulties exist, and that with a comparatively small outlay, Beypore can be made in all respects superior to Galle, and in no way inferior to Madras, so far as the safe landing of passengers, &c., is concerned.

7. If the Government take the question up, as I fully believe they will, I would venture to suggest that steamers carrying the mails should work from Aden to Beypore direct, also from China to Madras, and from Calcutta to Madras and *vice versâ* by which arrangement five days I am creditably informed, would be saved in the time now occupied in travelling from England to Madras, and the chief seat of Government, Calcutta. The Bombay boat could pick up at Beypore the China and Galle passengers, unless the Australian Steamer makes Beypore her depôt instead of Galle. The Australian Steamer could call at Galle on her way down.

8. Arrangements might also be made for the Bombay boat to call at Beypore on her outward and homeward trips, thus securing to us a weekly communication with England for passengers, instead of fortnightly as at present.

9. As the Government are directly interested in the success of our undertaking, and by their contract guarantee shareholders 5 per cent., I should imagine, they would be only too anxious to adopt a measure which would secure such an amount of traffic as would make the Railway pay of itself, which undoubtedly it would do if our South West Line formed part of the great highway.

10. I shall be prepared to run special trains on the arrival of the Steamers both at Madras and Beypore, for the conveyance of mails, passengers, luggage and goods, performing the journey between the two Coasts in sixteen hours, and to submit a list of rates applicable to the conveyance of passengers, &c., by such special trains upon hearing from the Government that they are prepared to support my recommendation.

11. I believe I am correct in saying that the contract with the Peninsula and Oriental Company for the conveyance of mails between England and the East, lapses at the end of this year, and therefore it is desirable to take prompt measures to bring our case before the Home Authorities.

12. The Members of Council will, I am sure, read with a good deal of satisfaction the annexed copy of a letter addressed to me by His Excellency Sir Bartle Frere after having had an opportunity of going out to the "Auckland" lying in the Beypore Roads in the month of May last.

BOMBAY, *May 8th* 1862.

DEAR SIR,

* * * * * *

I was glad to have an opportunity of going out to the "Auckland" at the time of tide, which showed the character of the Bar at Beypoor and from what I saw and from the Charts Captain Fraser had on Board, I cannot help thinking that it would be well worthwhile to collect all the information in the shape of surveys, tide registers, &c., which can be got, and lay it before some really first rate Harbour Engineer, with a view to get an opinion from him as to the possibility, at any moderate cost, of substantially improving the Harbour. I do not mean to the extent of making it a Harbour for large ships, though that does not seem to me hopeless, but of so improving the entrance that small ships might use it, and large boats go in and out more freely and safely than at present. The shape of the Coast, and the proximity of good materials for piers, with the facilities for laying down rails and using locomotive power, would favor any design for throwing out piers which should confine the scour in and out of the back-water, to a narrow channel, till it got to the deeper water some little distance out, where the action of the coast current would help to diminish, if not to prevent the formation of a bar.

Could not your Directors move in the matter? A good opinion as to what can be done would not cost much and might be very useful.

An additional 4 feet of water in the bar would be a great thing for the Railway.

Another thing which it struck me, the Railway Directors might do to improve your Malabar Terminus was to take the ferry across the back-water, on a lease, and work it with a small steamer in correspondence with your Trains. The Steamer might, between whiles, earn a good deal, towing heavy cargo boats to ships in the offing.

I was very sorry to see the notice of Mr. Ross' death.

Believe me dear Sir, with many thanks for your kind attention,

Faithfully yours,
(Signed) H. B. V. FRERE.

(True Copy.)

(Signed) R. B. ELWIN,
Agent and Manager.

Resolved that the foregoing papers on the question of improving the Port of Beypore as a Boat Harbour, be forwarded to the Public Works Department for consideration, in continuation of the Despatch from the Secretary of State on the same subject, which was received by the last mail, and transferred to that Department under date the 1st instant.

30th June 1862, No. 8.

(Signed) T. PYCROFT,
Chief Secretary.

To Public Works Department.

No. 530. MINUTE BY THE HONORABLE THE PRESIDENT.

1. The proposition of Mr. Lovell was to make a safe boat harbour, by stopping up the passage between a small island and the shore and thus forcing the whole current of the river to pass over the bar, and by thus blocking up the opening in a reef of rocks which runs parallel to the coast at a distance of about a quarter of mile leaving the south end of the harbour thus formed open as an entrance.

2. Sir Bartle Frere, on the contrary, seems to think that the entrance of the river might be improved, and the bar so far reduced as to secure a greater depth of water, and he suggests a reference to some Engineers in England.

3. I visited Beypore last year and satisfied myself that Mr. Lovell's proposition was practicable. I am of opinion that the suggestion of Sir Bartle Frere is impracticable; and I do not think that any reference to Engineers in England would be productive of the least benefit. The question is not as to the character of the harbour, which is simply a mere open roadstead with soundings increasing from the shore outwards very gradually, but as to the possibility that passengers and goods could be landed from a vessel lying at a safe distance from the shore during the south-west monsoon. It is, in fact, a nautical and not an engineering question. Upon the nautical side we have the opinion of Captain Rennie and Lieutenant Taylor both of whom are decidedly of opinion that there are days during the prevalence of the south-west monsoon during which it would be impossible to land passengers and goods safely. The account too which I received from Captain Fraser of the character of the sea running in the more sheltered harbour of Sedashegur, lead me to attach more importance to their opinion than to the statements of Mr. Elwin. Mr. Elwin's calculations are all based upon the supposition that Beypore is to be the end of a link in the chain of communication between England and Calcutta. I cannot think that passengers would be willing to land at Beypore and subject themselves to the heat and discomfort of a run of 16 hours across the Peninsula, and of the trouble of a fresh embarkation at Madras for the purpose of saving the time mentioned by Mr. Elwin, and as unless this scheme is really contemplated by the Government any improvements at Beypore would not be worth the expense which they would cost. I do not think that it would be advisable to do anything except perhaps to ascertain the exact cost of making the boat harbour suggested by Mr. Lovell. This may be of use to coasting craft; but I doubt very much whether if the monsoon were blowing strong it would be safe for boats to make for the southern entrance, to gain which they would have to bring their broadside to the breakers.

W. T. DENISON.

10*th September* 1862.

No. 531. ORDER THEREON, 30th September 1862, No. 2,338.

1. The proposition of Mr. Lovell is to make a safe Boat Harbour by stopping up the passage between a small island and the shore and thus forcing the whole current of the river to pass over this bar; and by blocking up an opening in a reef of rocks which run parallel to the coast at a distance of about a quarter of mile leaving the south end of the harbour thus formed open as an entrance.

2. Sir Bartle Frere on the contrary seems to think that the entrance of the river might be improved and the bar so far reduced as to secure a greater depth of water, and he suggests a reference to some Engineer in England.

3. His Excellency the President visited Beypore last year and satisfied himself that Mr. Lovell's proposition was practicable, and that the suggestion of Sir B. Frere impracticable; and he does not think that any reference to Engineers in England would be productive of the least benefit.

4. The question is not as to the character of the harbour, which is simply a mere open roadstead with soundings increasing from the shore outwards very gradually, but as to the possibility that passengers and goods could be landed from a vessel lying at a safe distance from the shore during the south-west monsoon. It is in fact a nautical and not an engineering question. Upon the nautical side the Government have the opinion of Captain Rennie and Lieutenant Taylor both of whom are decidedly of opinion that there are days during the prevalence of the south-west monsoon during which it would be impossible to land passengers and goods safely. The account too which the President received from Captain Fraser, of the character of the sea running in the more sheltered harbour of Sedasheghur, lead him to attach more importance to their opinion than to the statements of Mr. Elwin. Mr. Elwin's calculations are all based upon the supposition that Beypore is to be the end of a link in the chain of communication between England and Calcutta.

5. The Government cannot think that passengers would be willing to land at Beypore and subject themselves to the heat and discomfort of a run of 16 hours across the Peninsula, and of the trouble of a fresh embarkation at Madras for the purpose of saving the time mentioned by Mr. Elwin, and as unless this scheme is really contemplated any improvements at Beypore would not be worth the expense which they would cost, the Government do not think that it would be advisable to do anything except perhaps to ascertain the exact cost of making the boat harbour suggested by Mr. Lovell. The Deputy Chief Engineer will obtain and submit the required estimate for this work. The boat harbour may be of use to coasting craft, but it is doubted very much whether if the monsoon were blowing strong it would be safe for boats to make for the southern entrance to gain which they would have to bring their broad side to the breaker.

(Signed) W. I. BIRDWOOD, Colonel, R. E.,
Secretary to Government.

Railway.
No. 8

India Office.
London. 30 June, 1862.

Sir,

Para: 1. With reference to the letter, No: 299, herewith forwarded, addressed by the Directors of the Madras Railway Company to their Agent in India, on the subject of the improvement of Beypore Harbour, I think it necessary to acquaint you that, while authorizing its transmission, I informed the Board that I was not to be considered as in any way pledged to the views expressed in it.

2. I have no intention to re-open the question which was disposed of in my Public Works

His Excellency
The Honorable
The Governor in Council
Fort St. George.

Works Despatch of the 1st
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nine months of the year.

I have the honor to be,
Sir,
Your most obedient
humble Servant,

C Lloyd

x RP.

No 8 Railway

30 June 1862

Edward Geo. St George

No 8

Transferred to the Public Works Department for consideration.

Fort St George G. J. Corbett Under
The 1st Aug 1862 Secy to Govt

No. 528.

Forwards the letter addressed by the Directors of the Madras Railway Company to their Agent in India on the subject of the improvement of Beypore Harbour; and expresses his views on the subject.

Copy of the Despatch to H.E. the Gov. 30/7
No 2338 - 30 September.
Received 19th Sept 1862
Read 22nd Sept 1862

19 September/62 R 22.

13

No. 299.

MADRAS RAILWAY COMPANY,
33, NEW BROAD STREET,
LONDON, 27th May, 1862.

SIR,

The completion of the Railway between Madras and Beypoor, and the importance of making it available for the conveyance of mails and passengers to and from Europe, have given additional and more pressing interest to the question, which has been under consideration ever since its commencement, of improving the port of Beypoor so as to admit of goods and passengers being safely shipped or landed during the S.W. monsoon, as they already are with so great facility during the other nine months of the year. Without going back to the earlier correspondence that passed on this subject, it may be useful in again calling attention to it, with the view of your bringing it before Government, to advert to the proceedings that have taken place since Mr. Lovell's survey and report in April, 1858, which shewed that the object might be attained by forming a boat harbour south of the river mouth, by converting the island and rocks which there lie parallel to the shore into a breakwater, within which boats and vessels of small burthen could enter at all times and load or discharge in safety. The natural provision which already exists for this purpose is, we observe, at present taken advantage of whenever the freshes in the river and the surf on the bar render its entrance dangerous; and our officers have by this means landed cargo from ships in the roads in every month of the monsoon but August, though not without difficulty and interruption when the weather was more stormy than usual.

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4. In May, 1859, the Madras Government, referring to the opinion expressed by the Secretary of State, that "the time has arrived for taking active measures for improving the port," resolved to take immediate steps for the construction of a harbour sufficient to secure the safe landing and shipment of the overland mails and passengers; and their Consulting Engineer stated in his letter of the 10th June, that by these means a saving of time of some four days in the transit will be effected.

5. The Government of India, however, while fully admitting that it is desirable to render Beypoor as commodious and accessible as possible,

To the Agent and Manager,
Madras Railway Company,
Madras.

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8. On the 17th of May, Mr. Lovell, in reply to this reference, drew up a second report, in which he maintains the accuracy of his original estimate of the cost of executing his plans for the formation of an adequate boat harbour, although on account of the increase in the rates of labour, &c., which has since taken place, and as a very liberal estimate, he would now say £15,000 for the work. With regard to the doubts expressed whether steamers could safely anchor off during the monsoon, he refers to the case of the ship "Argaum," which was in the roads during the burst of the monsoon in 1858, and rode in safety with only one anchor down, not dragging an inch. After ten days the stormy weather subsided, and her cargo was landed in safety. Mr. Lovell, after the experience of three monsoons at Beypoor, could not think that a steamer would run any extraordinary risk in lying off the port during that season; and his conclusions have since been confirmed by the experience of the monsoon of 1861, when the two vessels "Chalmers" and "Eudora," not only stood the burst of the monsoon without damage or apparent danger, but remained on in the roads, discharging cargo at intervals, till the 18th of July, when they left for Bombay.

9. Mr. Lovell appears to us to have satisfactorily met other objections made by Captain Rennie and Lieutenant Taylor, and to have shewn that the chief of these might equally be brought against Madras as a landing port. Comparing the two, he considers that Beypoor in every respect surpasses it as to the facilities for landing or shipping.

10. Mr. Ross in forwarding this report has stated that from his personal acquaintance with Beypoor and frequent opportunities of discussing the matter there with Mr. Lovell, he is able to uphold to a great extent that officer's views with reference to the proposed boat harbour, and has no doubt that his estimate of the cost is a correct one.

11. The only point on which it appears to the Board that any ground of doubt remains as to Mr. Lovell's plan, is the proposed connection of the breakwater with the main land by a solid embankment along the bank of sand at the northern extremity of the boat harbour. Lieutenant Taylor, as the result of his experience of the winds and currents on the coast, has expressed his opinion strongly against closing this opening, as likely to cause the silting up of the harbour. Mr. Lovell has stated in reply his reasons for retaining his opinion that no such result would follow, while the effect would incontestably be beneficial in confining and directing the scour of the river in the monsoon against the bar. It is to be regretted that the suggestion of the Government of India to send Lieutenant Taylor to Beypoor to concert with Mr. Lovell was not carried into effect, so that a common understanding might have been arrived at. Additional observation may by this time, however, have set these doubts at rest, or confirmed the expediency of restricting the cross embankment as proposed in Mr. Ross's letter of the 30th May, 1861. If a solid barrier be objectionable, and a communication between the breakwater and the shore be deemed desirable, a structure on screw piles might be substituted.

12. But in any event, with so much evidence of the feasibility of making at a comparatively small cost, a boat harbour which will render the terminus of the railway on the Malabar Coast a safe and certain point for embarking and disembarking passengers, mails, and goods, throughout the year, the Board cannot doubt that the Government, on your bringing the question again before them, will at once proceed to satisfy themselves as to the accuracy of our Engineer's statements and estimates, and if so satisfied, that they will lose no time now in carrying the plans into execution. The importance of the object in view has been too fully recognized by the home Government, the Government of India, and the local Government, to require further observation.

I am, Sir,

Your obedient Servant,

(sd) J. Walker

Managing Director

(Draft.)

No. 299.

MADRAS RAILWAY COMPANY,
33, NEW BROAD STREET,
LONDON, 27th May, 1862.

17

SIR,

The completion of the Railway between Madras and Beypoor, and the importance of making it available for the conveyance of mails and passengers to and from Europe, have given additional and more pressing interest to the question, which has been under consideration ever since its commencement, of improving the port of Beypoor so as to admit of goods and passengers being safely shipped or landed during the S.W. monsoon, as they already are with so great facility during the other nine months of the year. Without going back to the earlier correspondence that passed on this subject, it may be useful in again calling attention to it, with the view of your bringing it before Government, to advert to the proceedings that have taken place since Mr. Lovell's survey and report in April, 1858, which shewed that the object might be attained by forming a boat harbour south of the river mouth, by converting the island and rocks which there lie parallel to the shore into a breakwater, within which boats and vessels of small burthen could enter at all times and load or discharge in safety. The natural provision which already exists for this purpose is, we observe, at present taken advantage of whenever the freshes in the river and the surf on the bar render its entrance dangerous; and our officers have by this means landed cargo from ships in the roads in every month of the monsoon but August, though not without difficulty and interruption when the weather was more stormy than usual.

2. Mr. Lovell's plans were approved and supported by Mr. Heppel, our then Chief Engineer, who observed that they had the great advantage that in adopting them we see our way with tolerable clearness to our object, inasmuch as what we do is only to promote by a moderate amount of artificial appliance the completion of a state of things already in great part effected by nature; while in attempting to improve the harbour by removing the bar, we should have to combat a natural obstacle, which would in all probability, if temporarily subdued, be found to exert persevering efforts to re-establish itself. The cost of carrying out Mr. Lovell's plan was estimated at about a lakh of rupees.

3. These results of Mr. Lovell's survey were laid before the Government by the Agent, with a letter urging the importance of proceeding simultaneously with the harbour works and railway; and he again, in September following, in consequence of a letter from the Board, requested the attention of the Government to the subject, pointing out the acceleration to be effected in the communication with England, by sending the Calcutta and Madras mails viâ Beypoor, on the opening of the railway.

4. In May, 1859, the Madras Government, referring to the opinion expressed by the Secretary of State, that "the time has arrived for taking active measures for improving the port," resolved to take immediate steps for the construction of a harbour sufficient to secure the safe landing and shipment of the overland mails and passengers; and their Consulting Engineer stated in his letter of the 10th June, that by these means a saving of time of some four days in the transit will be effected.

5. The Government of India, however, while fully admitting that it is desirable to render Beypoor as commodious and accessible as possible,

To the Agent and Manager,
Madras Railway Company,
Madras.

No. 299.
From
The Managing Director
Dated 27th May 1862
Rec'd 28th July

By 16242-503.

doubted if the proposed boat harbour would meet the object in view, or the estimate of its cost prove sufficient, and directed further enquiry to be made. The questions were referred by the Madras Government to the Public Works Department, but their reply does not appear to have been communicated to our officers.

6. A dispatch from the India Office, however, of the 1st December, 1859, informed the Madras Government that the Secretary of State's views on the subject of improving Beypoor Harbour had been greatly modified by the information furnished; the estimate having more than tripled, the depth of water only sufficing for very small vessels, and great doubts being entertained if steamers even could safely anchor off in the monsoon months. Under the circumstances, nothing was directed to be done further at that time.

7. In April, 1861, the Government Consulting Engineer forwarded copies of correspondence received from the Government of India, relating to the proposed boat harbour, to be laid before Mr. Lovell for his report. Accompanying these, was a letter from the Secretary of the Government of India, dated 13th February, 1860, forwarding copy of a report by Lieutenant Taylor, and suggesting his being sent to Beypoor "to concert with the "Railway and Government Engineers the measures most proper for securing "the greatest possible advantage to the Beypoor terminus," adding that, "although the former scheme has not proved so promising as was expected, "the Government of India regard the subject with interest, and will be "prepared to give their cordial support to any suitable scheme for fostering "the trade of that coast in connection with the railway."

8. On the 17th of May, Mr. Lovell, in reply to this reference, drew up a second report, in which he maintains the accuracy of his original estimate of the cost of executing his plans for the formation of an adequate boat harbour, although on account of the increase in the rates of labour, &c., which has since taken place, and as a very liberal estimate, he would now say £15,000 for the work. With regard to the doubts expressed whether steamers could safely anchor off during the monsoon, he refers to the case of the ship "Argaum," which was in the roads during the burst of the monsoon in 1858, and rode in safety with only one anchor down, not dragging an inch. After ten days the stormy weather subsided, and her cargo was landed in safety. Mr. Lovell, after the experience of three monsoons at Beypoor, could not think that a steamer would run any extraordinary risk in lying off the port during that season; and his conclusions have since been confirmed by the experience of the monsoon of 1861, when the two vessels "Chalmers" and "Eudora," not only stood the burst of the monsoon without damage or apparent danger, but remained on in the roads, discharging cargo at intervals, till the 18th of July, when they left for Bombay.

9. Mr. Lovell appears to us to have satisfactorily met other objections made by Captain Rennie and Lieutenant Taylor, and to have shewn that the chief of these might equally be brought against Madras as a landing port. Comparing the two, he considers that Beypoor in every respect surpasses it as to the facilities for landing or shipping.

10. Mr. Ross in forwarding this report has stated that from his personal acquaintance with Beypoor and frequent opportunities of discussing the matter there with Mr. Lovell, he is able to uphold to a great extent that officer's views with reference to the proposed boat harbour, and has no doubt that his estimate of the cost is a correct one.

11. The only point on which it appears to the Board that any ground of doubt remains as to Mr. Lovell's plan, is the proposed connection of the breakwater with the main land by a solid embankment along the bank of sand at the northern extremity of the boat harbour. Lieutenant Taylor, as the result of his experience of the winds and currents on the coast, has expressed his opinion strongly against closing this opening, as likely to cause the silting up of the harbour. Mr. Lovell has stated in reply his reasons for retaining his opinion that no such result would follow, while the effect would incontestably be beneficial in confining and directing the scour of the river in the monsoon against the bar. It is to be regretted that the suggestion of the Government of India to send Lieutenant Taylor to Beypoor to concert with Mr. Lovell was not carried into effect, so that a common understanding might have been arrived at. Additional observation may by this time, however, have set these doubts at rest, or confirmed the expediency of restricting the cross embankment as proposed in Mr. Ross's letter of the 30th May, 1861. If a solid barrier be objectionable, and a communication between the breakwater and the shore be deemed desirable, a structure on screw piles might be substituted.

12. But in any event, with so much evidence of the feasibility of making at a comparatively small cost, a boat harbour which will render the terminus of the railway on the Malabar Coast a safe and certain point for embarking and disembarking passengers, mails, and goods, throughout the year, the Board cannot doubt that the Government, on your bringing the question again before them, will at once proceed to satisfy themselves as to the accuracy of our Engineer's statements and estimates, and if so satisfied, that they will lose no time now in carrying the plans into execution. The importance of the object in view has been too fully recognized by the home Government, the Government of India, and the local Government, to require further observation.

I am, Sir,

Your obedient Servant,

(sd) J. Walker.

Managing Director

~~To~~

~~Copy Letter~~ No 299 from the
Directors of the Madras Railway
to their Agent in India.

Referred Home Railway Letter to
Madras, No 9, dated 20 June
1862

Financial
Railway Department 2/1

Proceeding of the Madras Government

(Read observations of the Acting Consulting Engineer in charge on a letter from the Agent and Manager of the Madras Railway Company.

(Dated 2nd August 1862 No 133)

Order thereon 12th do August 1862 No 731

Resolved that the foregoing papers on the question of improving the Port of Beypore as a Boat Harbour, be forwarded to the Public Works Department for consideration, in continuation of the

30 June/62 No 8. Despatch from the Secretary of State on the same subject, which were received by the last Mail and transferred to that Department under date the 1st Instant.

(Signed) C. D. Pycroft.

To Public Works Department.

RAILWAY DEPARTMENT. CONSULTING ENGINEER'S OFFICE.

No. 133.

On letter from the Agent and Manager of the Madras Railway Company, No. 5007 of 30th July/62 forwarding a copy of Letter to his address of the 27th May/62 from the Managing Director, and Extract of Letter from the Honble Sir Bartle Frere, dated 8th May 1862.

H.F.P.

Observations by the Consulting Engineer in charge.

The Agent remarks on the subject of improving the port of Beypore so as to admit of Passenger, Goods &c., being shipped and landed in the Monsoon, that his hopes of the ultimate success of the South west Railway rest mainly on the benefit expected to accrue from the Line forming part of the through route between England and Calcutta. He believes from personal observation, and the experience of his officers, that the landing at Beypore could be effected at all seasons of the year, with as much facility, as is now the case at Madras; and trusts that only a comparatively small outlay will be required for this object, as proved beyond a doubt by the 9th paragraph of Mr. Walker's Letter. The Agent suggests arrangements being made for the

Calcutta

To M. 1862 Madras Public Works Department Despatch

Dated 12th August 1862 Received 18th September 1862 (Packet 3)

Subject: Improvement of Beypore as the Commercial Railway Port

Forwarding for consideration Report on the subject submitted by Mr. Walker, Consulting Engineer, Madras Railway

Answered 30th September 1862

No 2338 dated 30th September.

No. 529.

Calcutta and Bombay Boats saying that Bypoor, when he will be prepared to run Special trains from Madras and Bypoor on the arrival of the Steamers, performing the journey between the two Ports in Sixteen hours. She understands that the present Contract with the P. O. Company lapses at the end of this year, and therefore considers it advisable to take prompt measures for a reference to the Home Authorities.

2. Mr. Walker, the managing Director in London, reviews the correspondence that has passed on Mr. Lovell's project for forming a Boat Harbour at the mouth of the Bypoor River, and concludes with the hope that the Government will, on the question being again brought before them, satisfy themselves as to the accuracy of Mr. Lovell's Statements and Estimates, and, if so satisfied, will lose no time in carrying the plans into execution. The papers referred to by Mr. Walker have all been before Government: Mr. Lovell's Last report of the 17th May 1851, having been published with the order of Government, No. 517, of the 9th July 1851. This latter order was communicated to the Agent of the P. and O. S. N. Company for his information, and in continuation of the Government Order, No. 303, of the 20th April 1851, to the effect

effect that "it will be for the consideration of the Company, whether they will run Steamers between Bypoor and Aden."

3. The Records of this Office do not show that any proposal has been made by the Agents of the P. & O. Company, regarding their Steamers touching at Bypoor, and as the Railway Board adduce no fresh arguments in favor of the Scheme, no opinions appear to be called for now, from the Consulting Engineer. For this reason, as the Subject is of much importance, I forward these observations of my own, without incurring the delay of sending papers to Captain Orfeur, to be laid on the Table of Council, at its next Meeting.

4. The Government may probably approve of Sir Charles Trevelyan's suggestion to Mr. Elvin, as to taking the opinion of some distinguished Harbour Engineer in England, and as Mr. Lovell has lately gone home, he is on the spot to give verbal explanations.

Madras
2nd August 1852

Hen. Henderson Captain
Offg. Comg. Engineer for Bpo in Charge

To The Offg. Chief Secretary to Government
For Fort St. George

Rec'd 20th April 1862 & 22nd 583
" 9th July " 5857

P.W. 2467/62

FINANCIAL RAILWAY 1862 DEPARTMENT.

FROM Actg. DY

THE CONSULTING ENGINEER

FOR RAILWAYS.

To Actg

The Chief Secretary to Government,

Fort St. George.

Dated 2nd } August 1862.
Received 2nd }

No. 199.

Enclosures 3

No. 503.

Observations on a let
from the Agent & Manager
of the S. I. Railway, forwar
ing copy of one from the Ma
naging Director with its en
closure on the subject of
improving the port of
Beypoor so as to admit
of Passengers &c. being landed
landed in the Monsoon.

Madras—Printed at the Government Press.

the contemplated thought feasible.

4. Having heard so much of the dangers of the Western Coast during the South West Monsoon, and the utter impossibility of vessels being then able to lie off Beypore, I have made it my business to visit this end of our line three times since the Commencement of the present Season, and on neither occasion have I witnessed the Surf-Boats to that which is to be seen at Madras every day in the year.

5. I confidently believe from personal observation, backed by the experience of our Officers at Cochin resident at Beypore 5, 6, and 7 years, that the difficulties attending the safe landing of Passengers and Goods at all Seasons of the year, exist only in the imagination of a few; and that the transfer of Mails, Passengers and Goods from the Ships lying in the Roads off Beypore into Madras Boats, could be effected with as much facility and ease as is now the case at Madras, especially if by opening on the bar we could secure a deep water Entrance into the River.

6. The 8th para of Mr Walter's letter will prove, I trust, beyond a doubt, that no insurmountable difficulties exist, and that with a comparatively small outlay, Beypore can be made in all respects preferable to Galle, and in no way inferior to Madras, so far as the safe landing of Passengers &c is concerned.

7. If the Government take the question up, as I fully believe they will, I would venture to suggest that Steamers carrying the Mails should work from Aden to Beypore direct, also from Cochin to Madras, and from Calcutta to Madras and vice versâ by which arrangement 5 days I am credibly informed, would be saved in the time now occupied in travelling from England to Madras and the Chief Seat of Government - Calcutta. The Bombay boat could pick up at Beypore the Cochin and Galle passengers, unless the Australian Steamer makes Beypore her depôt instead of Galle. The Australian Steamer could call at Galle on her way down.

8. Arrangements might also be made for the Bombay boat to call at Beypore on her outward and homeward trips, thus securing to us a weekly communication with England for passengers, instead of fortnightly as at present.

9. As the Government are decidedly interested in the success of our undertaking, and by their Contract guarantee Ettamenan 5 p Cent, I should imagine they would be only too anxious to adopt a measure which would secure such an amount of traffic as would make the Railway pay of itself, which undoubtedly it would do if our South West Line formed part of the great high-way.

10. I shall be prepared to join Special trains on the arrival of the Steamers both at Madras and Beypore, for the conveyance of Mails, Passengers, Luggage and Goods, performing the journey between the two coasts in eighteen hours, and to submit a list of Rates applicable to the conveyance of Passengers &c by such Special trains upon hearing from the Government that they are prepared to support my recommendation

I

11

"I believe I am correct in saying that the Contract with the Peninsular and Oriental Company for the Conveyance of Mails between England and the East, has yet the end of this year and therefore it is desirable to take prompt measures to bring a new Case before the Home Authorities.

"As a Member of Council this I am sure, heads with a good deal of satisfaction the annexed copy of a letter addressed to me by His Excellency Sir Bartle Frere after having had an opportunity of going out to the "Elephanta" lying in the Elephanta Roads in the month of May last.

I have the honor to be,
Sir,
Your Most Obedient Servant
Robt. N. Cust
Agent and Manager

Bby 16 Dec 1862.

xCom.

Bombay, May 8th 1862.

Dear Sir,

× × ×

I was glad to have an opportunity of going out to the Elephanta at a time of tide which showed the channels of the Bay at Elephanta and from the Islands Captain Hansen had on board cannot help thinking that it would be well worth while to collect all the information in the Shape of Surveys - Tide Registers &c. which can be got, and lay it before some really first rate Harbour Engineer, with a view to get an opinion from him as to the possibility, at any moderate cost, of substantially improving the Harbour - I do not mean to the extent of making it a Harbour for large Ships, though that does not seem to me impossible but of so improving the entrance that Small Ships might use it; and large boats go in and out more freely and safely than at present - The shape of the coast, and the proximity of good materials for piers, with the facilities for laying down stones and using locomotive power, would favor any design for throwing out piers which should confine the stream in and out of the back-water, to a narrower channel, like it got to the deeper water some little distance out, where the action of the Coast-current would help to diminish, if not to prevent the formation of a bar.

Should not your Directors move in the matter? - A good opinion as to what can be done would not cost much and might be very

very useful -

A-n additional 4 feet of water in the Dam would be a great thing for the Railway.

Another thing which it occurs to me the Railway Directors might do is improve upon Malabar Terminus and to take the ferry across the backwater, on a lease, and work it with a small Steamer in connection with your Trains - The Steamer might, between whiles, earn a good deal towing heavy cargo boats to Ships in the offing.

I was very sorry to see the notice of Mr Rose's death.

Believe me dear Sir
with many thanks for your
kind attention.
Faithfully Yours
Signed N. B. V. Spens.

True Copy

Walter B. Lewis
Agent & Manager

Comptr. P.W.D.

Madras Railway.

From
The Agent & Manager
To
The Ag: Consg: Engr:—
per Railways

Dated 30th July 1862.
Rec.d 1st Aug.t —"—"—

No. 508.

P.W. 2467/62

Forwards copy of a Communication from the Managing Director of this Company, & with a copy of a letter from H.E. Sir Bartle Frere on the subject of improving the Port of Beypoor so as to render it safe for Passengers Goods & Mails being safely Shipped & Landed there during the Monsoon and offers certain Remarks & Suggestions with a view that Govt. may arrange that Steamers conveying the Mails should work from Aden to Beypoor direct, also from China to Madras and from Calcutta to Madras & vice versa.

Ry/62 No. 503.

Engineer in England would be productive of the least benefit. The question is not as to the character of the Harbour which is simply a mere open roadstead with Shoaling ground increasing from the shore outwards very gradually, but as to the possibility that Passengers & goods could be landed from a vessel lying at a safe distance from the shore during the S.W. Monsoon. This is fact a Nautical & not an Engineering question upon the Nautical bids we have the opinion of Capt. Nunn & Lt. Taylor both Bycullah and decidedly of opinion that ten or twelve days during the prevalency of the S.W. Monsoon during which would be impossible to land Passengers & Goods safely. This amount to what I received from Capt. Fraser of the Charlotte Packet running in the Moulmein Harbour

of Pedir keyper Captain Hall was in opinion from the statements of Mr. Elwin. Mr. Elwin's calculations are all based upon the supposition that Bypoor is the head of the Gunnie between England & Calcutta between England & Calcutta I cannot think that Passengers would be willing to land at Bypoor & subject themselves to the heat of the country 63 days across the Peninsula; and of the bridal path from Madras to Bypoor was improved by the Company as mentioned by Mr. Elwin, and as only this scheme is really contemplated by the Govt. any improvements at Bypoor would not be expensive which this would not think that it would be advisable to do anything except perhaps to secure the exact copy of the Boat Harbour suggested by Mr. Lloyd

This may be of use to
Coastlinesafe. but I
doubt any much cobelin
of the Museum were down
there it would be safe
to boat & speak to the
Coastlin inhabitants to
learn what they would
want to bring this back
down to the Museum

Public Works Department

No. 2338.

Proceedings of the Madras Government

Under date the 30th Sept. 1862.

Read the following papers

From the Home Govt.

Forwards the letter addressed by the Directors of the Madras Railway Company to their Agent in India on the subject of the improvement of Bryapore Harbour and expresses his views on the subject.

Dt. 30th. June 1862. No. 8

Fm. Madras Govt in the Financial Railway Department

Forwarding for consideration papers on the question of improving the Port of Bryapore as a Boat Harbour.

Letter dated 12th Augt 1862. No. 431

Minuted by the Hon'ble the President

Letter dated 10th Sept. 1862. No. —

The proposition of Mr. Lovell to make a safe Boat harbour by stopping up the passage between a small Island and the shore and there forcing the whole current of the River to pass over the Bar; and by blocking up an opening in a Reef of Rocks which runs

Public Works Department

Minute by the Hon'ble the President

Dated Ootacamund 15th Sept. 1862

Read the following papers

No. 431

Stating his opinion that the Engineer's proposition for improving the Bryapore Harbour

No. 2338-30 Septr.

Entd. Sept. 22.

pens parallel to the coast at a distance of about a quarter of mile leaving the south end of the harbour three formed open as an entrance

2 Sir Barbe Bazalgette on the contrary seems to think that the entrance of the Rivers might be improved and the Dam so far reduced as to secure a greater depth of water, and he gives a preference to same Engineer in England.

3 His Excellency the President visited Bezpore last year and was satisfied that Mr. Cuellé's proposition was practicable and that the suggestions of Sir. B. Bazalgette impracticable, and he does not think that any reference to Engineers in England, would be productive of the least benefit.

4. The question is not as to the character of the harbour, which is as simply as mere open roadstead with pounding increasing from the shore outwards very gradually but as to the possibility that passengers and goods could be landed from a vessel lying at a safe distance from the shore during the South west Monsoon. It is in fact as nautical and not an Engineering question. Upon the Nautical side the Govt have the opinion of Captain Rennie and Lieut Taylor both of whom are decidedly of opinion that three days during the prevalence of the South west Monsoon is during which it would be impossible to land passengers

and goods safely. The assurance
too which the President is
received from Captain Fraser,
of the character of the sea running
in the more sheltered harbours of
Tedashegheu lead him to
attach more importance to their
opinion than to the statements of
Dr. Elwin - Dr. Elwin's
calculations are all based upon
the supposition that Bryapore
is to be the end of a link in
the Chain of Communication between
England and Calcutta.
The Post cannot think
that passengers would be
willing to land at Bryapore
and subject themselves to the
heat and discomfort of a journey
to have across the Peninsula

and of the troubles of a fresh
embarkation at Madras for the
purpose of saving the time
mentioned by Dr. Elwin, and
as unless this scheme is really
contemplated any improvements
at Bryapore would not be
worth the expense which they
would cost, the Post do not
think that it would be
advisable to do anything except
perhaps to ascertain the exact
cost of making the Boat harbour
suggested by Dr. Lewis.
The Authority Chief Engineer will state & explain for the work.
and which the requires & to estimate for this work.
The Boat harbour this may be of use to coasting
craft, but it is doubted
very much whether if the
Monsoon were blowing strong
it would be safe for boats
to make for the pantheons
entrance

entrances to gain which they
would have to bring their
broad side to the Breaker.

13 Copies.
S.
The Dy Chfng.r S. C Dispt.r 2.d Advt.r
11. Financial Railway Dept.r

Public Works 1862 Dept.
Pro: of Govt. for September
No 2338

To
Pro: of the Madras Govt.
No 30 September 62

The suggestion of Sir
B. Frere on the subject of
the improvement of the
Beypore Harbour Consi-
dered to be impracticable
and the Dy Chief Engr. re-
quested to obtain and
submit an Estimate for
a Boat Harbour.

No 828 @ 531.

19 Sep. 822.