REON, 2nd Aug

Read the following papers :—

No. 12. Proceedings of the Board of Revenue, dated 30th April 1872, No. 684.

Read th following letter from R. K. PUCKLE, Esq., Collector of Tinnevelly, to the Secretary to the Board of Revenue, dated Karisalkulam, 18th March 1872, No 92 :—

I HAVE the honour to forward, herewith, the report called for from Captain Phipps in Government Proceedings, No. 217, dated 2nd February last, and to submit my opinion thereon as required by the Board in their Proceedings, Miscellaneous No. 975, dated 8th February.

2. The pearl oyster nursery was a square enclosure of coral in about four feet of water on a sand bank known as the middle bank under the lee of Hare Island opposite Tuticorin.

3. I arrived in this district in 1866, just after this enclosure was finished, and I watched the attempt to rear pearl oysters in it with considerable interest.

4. As an oyster nursery it was a total failure; for under the lee of the island and inside the harbour the water was far from pure, and a muddy deposit or the shallowness of the water, or both causes combined, killed the oysters as soon as they were laid down.

5. In 1869 the enclosure was partly removed and the coral utilized elsewhere ; all that remains above water now is a palmyra post here and there to warn boats off the spot.

6. I have taken careful soundings from this oyster nursery on the middle bank to the spit on the north of the habour and can find no difference between the several depths now and those laid down in the chart thirty years ago. The bottom is hard sand, and the channel has now as formerly a maximum of from 9 to 10 feet of water between the middle bank and the spit. I have never heard from the owners or tindals of the native craft that run in and out all the year round that this channel has in any way shallowed, and, as a proof that it is still serviceable, I noticed, while taking the soundings, two or three laden schooners, drawing from six to seven feet each, sailing out of the harbour, and was surprized to see how far they stood across in tacking through the channel; thus showing that there is more than one fathom of water for a considerable distance on either side of the deep bed of the channel.

7. Near the spit to the north of the harbour the case is different, and hence I believe the impression that the channel is silting up.

8. This spit was formerly dry for [illegible]r of a mile further seaward than at present as is shown by its bear[illegible]t. The sand above water has been washed away for a quarter of a mile or so, and the shoal off the point of the spit is consequently, to the casual observer, a quarter of a mile longer than it used to be. On this shoal there are but two feet of water, but these two feet of water are where there was dry ground thirty years ago.

9. The aggregate length of the spit and shoal is much what it was at the time when the chart was prepared, though the apparent extension of the shoal under water no doubt gave rise to the rumour that the channel was silting up. I cannot, however, understand how the officer who officiated as Master Attendant for Captain Phipps during his absence could gravely record his forebodings without ascertaining the exact state of the case by soundings and reference to the chart.

10. Captain Phipps is a keen observer, who has been on the spot for years. He is constantly afloat, sailing in and out through this channel, and is in daily communication with the masters and seamen of the native craft frequenting the harbour. He assures me that, though there is a tendency to silt up along the foreshore of the habour, there is no difference whatever descernible in the channel approaching the harbour, and I am convinced, in my own mind, that his opinion is correct.

ENCLOSURE No. 1.

ABSTRACT.—Copy of Captain Phipps' report regarding the Pearl Oyster Nursery referred to in the above letter.

SUBMITTED to Government with reference to their order quoted.

2. The Board consider it clear now that Captain Richardson's views were incorrect; but they were based upon general opinion and were adopted by the Acting Collector who strongly advised the removal of the debris.

3. The Secretary of State is under an evident misapprehension in supposing that the nursery was abandoned before the experiment had had a fair trial.

4. It had been given up as a failure on Captain Phipps own recommendation, some time before the proposal to remove the walls was made.

No. 13. From the Master Attendant, Administrative Department, Madras, to the Secretary to Government, Revenue Department, Fort St. George, dated Madras, 10th June 1872, No. 3,262.

As requested in your official memorandum* No. 72, dated 3rd instant, I have the honour to forward herewith copies of the reports of the Superintending Engineer,† 8th Division, and the Executive Engineer,‡ touching the Tuticorin Harbour. A plan (in original) is also sent.

* Enclosure herewith returned.

† No. 3,103 of 17th November 1871.

‡ ,, 111 of 4th ,, ,,

No. 14. ORDER THEREON, 2nd August 1872, No. 1,150.

Miscellaneous.

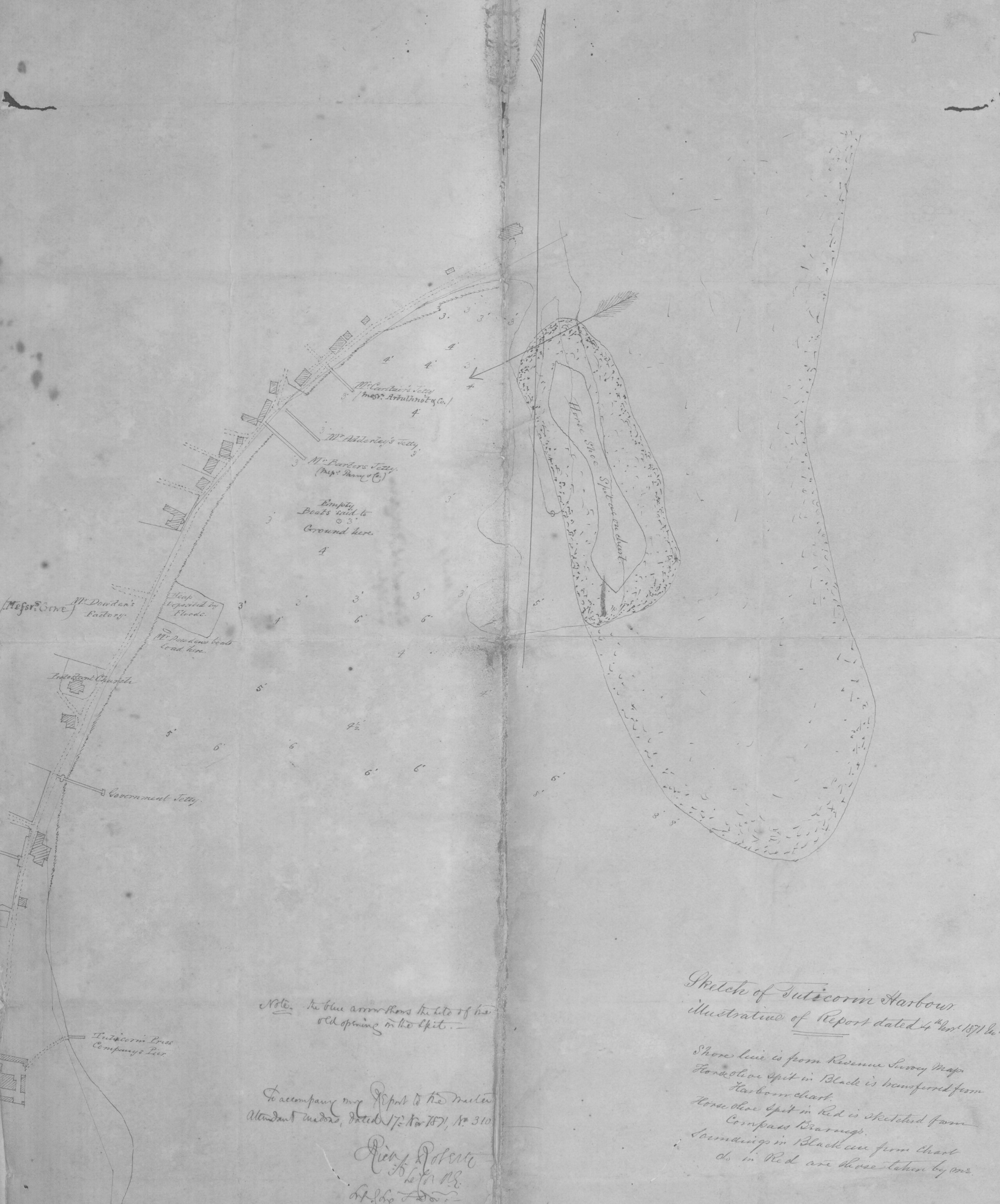
ORDERED that these papers be forwarded to the Secretary of State with reference to paragraph 2 of His Grace's despatch dated 20th December 1871, No. 40.

(True Extract.)

(Signed) W. HUDLESTON,
Secretary to Government.

To the Board of Revenue.
,, the Public Works Department.

Exd. F. R. Bantleman.



Sketch of Tuticorin Harbour
illustrative of Report dated 4th Novr. 1871 No.

Shore line is from Revenue Survey Map.
Horse shoe Spit in Black is transferred from Harbour chart.
Horse shoe Spit in Red is sketched from Compass Bearings.
Soundings in Black are from chart
do. in Red are those taken by me.

Note. The blue arrow shows the site of the old opening in the Spit.

To accompany my Report to the Master Attendant Madras, dated 17th Nov 1871, No. 310

Richd. Roberts
Lt. R.E.
Ex. Engr.

Camp Coompully
Nov. 13. 1871

[illegible]
Civil Engr.

No. 111. Northern Range Office Tinnevelly
Covilputty 4th November 1871.

From
The Executive Engineer
Northern Range Tinnevelly

To
The Superintending Engineer
8th Division.

Sir,

I have the honour to acknowledge receipt of your Memo: No. 2733 dated 26th ultimo, with 2 enclosures, and as requested to report as follows.

2 I called on Mr. Dowden, Messrs Crosse and Co's manager, and asked him to point out to me the exact cause of complaint he had, and he told me substantially as follows: That in 1862 a bridge on beach road, passing in front of his godowns was carried away by a flood, and the debris deposited in harbour just in front of sea wall, that the road was afterwards carried over site of old bridge

4

Rec. 20th/72

Copy sent to Dy Supt Tuticorin

No. 3262 of 10 June 72

A Mun 20/8/72

bridge and no opening left; and that in consequence in 1869, during a heavy flood, a channel had to be cut through road to allow flood water to pass off, which formed a large opening in Road, and washed quantities of mud &c into harbour on top of the bridge debris, already deposited as above stated: this heap, or spit, he says is increasing both in height and length and tends to join the harse-shoe spit, at Northern end of harbour, but from the direction he gives it, in his letter under notice, it would be a long time before (if ever) it joined the harse shoe spit or small Island as he calls it. He also states the spit is now forming and that it prevents his loading his boats as formerly.—

3. I think it best to dispose of Mr Dowden's case before entering on those of other merchants; that the spit opposite his godown is not forming

forming now but was formed by flood of 1862 and 1869, as above shown, is proved, and he agreed with me; that such was the case there is no doubt, that it is also rising slowly and that its re-entering angles where it springs from beach are gradually filling up, but it is a very slow process, and has no tendency to join the harse shoe spit, except by the general elevation of the whole bed of Harbour which will no doubt take place at some future day, and which is doubtless going on now but very slowly; his boats certainly are not 50 nay 100 feet further out; he never had a jetty and the extra distance adds but little to the cost of loading; he wants the heap in front of his godowns removed, but I do not think it of any use as if it was deepened sufficiently to allow of his boats loading at all times of tide it would have

have to be dredged out at a great expense, whereas a short jetty from end or side of the heap would answer all purposes.

4. I next called on Mr. Barker, Mr. Adderly, and Mr. Carstairs, the Managers of the 3 establishments north of Mr. Dowden, and they all stated that the harbour was shallow-er than when their jetty was erected, and such is no doubt the case, as I shall explain further on. — These gentlemen required the bed of Harbour in neighbourhood of their Jetties to be dredged out, and every other place with less than 5½ feet water, as their boats draw 5 feet when loaded and a broad deep channel to be cut across the horse shoe spit to create scour. — The former gentleman told me he thought that at a cost of 4 annas per 100 bales he could manage as he was, and if so the same would hold good for the other two but the other

other 2 gentlemen nothing but dredging & c^a would satisfy.

5. Having thus stated the general tenor of the complaints, I would now give my own opinion on the subject Viz^t. — Between 1842 when chart was made and the present time 1871, a space of 29 years, my examination shows that from horse-shoe spit the Northern end of harbour, to Messrs. Dowden's works about mid length of it, the bed has risen from 6" to 9" (at the Southern end, or in mid harbour, no appreciable difference is perceptible). — This you are aware of from the soundings taken in my company, we never got less than 3 feet at jetty ends the chart shows about 4', of course it is not exact (I mean position of soundings on chart) and in the bay formed by main land and horse-shoe spit we got soundings as high as 5 feet, the greatest shewn

on

on chart are 5 feet except at Southern end of spit where chart shews 8 feet, and which I found after you left; over soundings reduced as nearly as possible to low-water-mark would shew a deposit of from 6" to 9" in 29 years.

6. After you left, I in company with the Master Attendant sailed and rowed all over the harbour, taking soundings, and I find no perceptible difference any where except in the bay above mentioned. The chart shows a small channel as existing in 1842 between main land and end of horse shoe spit but as you know it is closed, on enquiry it appears that it used to open and close now and then, but nothing artificial has been done to it; all to the north, North west and North east appears to be gradually silting up as you also must have seen, and it is my opinion that the silting up of the bay in question has been caused by this

this channel allowing tidal or monsoon wave to bring in a large amount of silt; and as there is no current, at least no perceptible one, the silt dropped as soon as it got into the still water of the harbour, and close to its exit from the channel. There is a great diversity of opinion regarding this channel.

7. Mr. Adderly states it to have been broad and deep and that he passed through in his loaded cargo boat, so that it must have had 5½ feet water in it. Mr. Carstairs says it was only about 20 feet broad and about 50 in length and that his loaded cargo boat has often passed through. I requested these gentlemen to send me any or all of the crews of these boats, and such as came when questioned distinctly stated it had never been possible for more than canoes or ships boats to pass through, that is to say about 2½ feet water. Mr. Barter has never heard of cargo boats passing through

through until told of it by Mess^rs Adderly and Carstairs, at time I was making the enquiry and his own opinion is that it was never possible. I think these two gentlemen are confounding a passage northeast of Tuticorin which has 4 and 5 feet water marked in it on chart; I questioned all the old serang^s Tindals and boatmen and they all say it was never possible; the Master Attendant also states he never heard of such an occurrence since he has been in Tuticorin, about 12 years, and none of these gentlemen have resided there longer.

8. To sum up, I cannot recommend dredging the harbour, it would be so expensive, as it would have to be kept up year after year, but it is the only feasible thing to do on the part of Government; nor can I recommend the channel to be cut across the horse shoe spit, as in first place there is no scour or current, in the second it would have to be dredged out which would be very expensive say 30 to 40,000 Rupees, and unless it was made very large if there was a scouring current, it would soon fill up harbour, and if there was none as I state it could be of no use. I would recommend the merchants concerned either to lengthen their jetty^s, or provide broad shallow pontoons to moor at end of jetty for present, to enable them to load boats, or should silting continue, to be used as flats to take the cargo to the cargo boats; these flats need not draw more than 1½ to 2 feet water if properly constructed.

9. I would leave it for consideration of Government whether a proper broad jetty should not be constructed from about where the Railway Station will be, out into 8 feet water, a length of about ½ a mile, so that boats could load on one

one side of it and the small craft frequenting the port could load on the other. This would necessitate doing away with the privilege the merchants here now possess of loading cargo at their own jetties not at Custom House and also a Pier fee would have to be levied, the exports are about 60 or 70000 bales per annum, and a fee of 1 anna on 60000 would give 3750 Rupees, or the interest at 5 per cent on 75,000 Rs besides the fees on other produce shipped and not included here: which ought to build a good Jetty; or perhaps the fee might be still higher is a matter of further enquiry; but I am bound to state the merchants are not much in favour of it, stating they can at less cost to themselves remedy the difficulties of loading their boats.—

10. I had almost forgotten to notice one point; from actual measurements the horse-shoe spit, or rather

rather the portion of it above high water mark, is about 500 feet less than it was in 1842; on enquiry about this I believe the higher portions have been removed to fill in behind the sea wall and that thus lowered in the gales of 1862. 1869 and others the sea waves beat over the spit and spread it to the South west, at its South Western extremity and made it considerably broader than it was in that part.

11. I would also observe that the action of the Sea wall put to protect the town from the encroachment of the Sea, has been naturally to extend the foreshore to seaward and so shoal water near jetties.

12. There is an opinion prevalent here that the nursery for oysters built on eastern end of middle shoal has been the cause of the silting up of the bay in question, a calm look at the chart

chart will tend to dispel any such idea, I think I may call it illusion; at the time the nursery was constructed this argument against it was used, but Sir William Denison the then Governor and an Engineer decided against the opinion.

13 On receipt from you of a skeleton Plan of Tuticorin I will mark on it all that is necessary for elu-cidating this report.

14. At Tuticorin the tide rises and falls very irregularly sometimes there is a rise of 2'-8" at others 3", and vice versa, and this alone would occasion a good deal of the difficulty in loading experienced by the merchants; and might help to make them think the bay had silted up greatly in lieu of the small (though still serious) amount actually found. This irregularity in tides is caused by the formation of the har-bour and the nature of the wind the north

north east monsoon heaping the water up and the South West blowing it out of or preventing it entering the harbour; this latter points to no useful scouring current, as if there was any such the wind would not be able to affect it so much.

I have &c.

Signed G. T. Sage
Executive Engineer
Northern Range
Tinnevelly.

(True Copy)

Signed R. A. Roberts Lieut.-Col: R.E.
Superintending Engineer 8th Div.

(True copy)

H. Erwan Lake

1st Asstt. Master Attendant.
Administrative Department.

No. 3103

Superintending Engineer's Office
8th Division.
Madura 17th November 1871

From

Lieut: Colonel R. A. Roberts. R.E.
Superintending Engineer
8th Division

To

The Master Attendant
Madras

Sir,

In reference to the letter from your Deputy dated 20th September 1871 No. 5496, calling upon me for a report on the silting up of the Harbour at Tuticorin, I have the honour to state that I proceeded to that place on the 24th ultimo, for the purpose of making the necessary enquiries and investigations. But that being called away somewhat hurriedly in order to be present at Madura, to attend on His Excellency the Governor during his recent visit here, I deputed the remainder of

Enclosures 2.

Rec: 20/7/72.
No: 3252 of 10 June 1872
Copy sent to England with Despatch
dated 19th July 1872

From
The Secretary to
the Govt of Fort St George

Dated 4 November 1871

No: 111

Report on the Tuticorin
Harbour

of the investigations to Executive Engineer Mr G. L Sage, who has just been posted to this Division

2 Mr Sage's Report dated 4th instant No. 111. is herewith forwarded for your information And as it is very comprehensive it leaves little for me to add to it.

3 It will be seen that there is in reality nothing to justify the alarming statement made by Messrs Crowe Hc in regard to the "rapid destruction of all facilities "for shipment at this port" For although it is quite true that during the last 29 years, or since the harbour was gauged in 1842, it has silted up generally from 6" to 9 inches, yet as I myself personally can testify it has actually deepened, in other places as mentioned in Para 5 of the Report.

4 In a shallow harbour situated like that of Tuticorin to reclaim foreshore, as has been practised there, is tantamount to pushing your deep water further eastwards in proportion to the width of the belt of land thus reclaimed. As the homely saying puts it "you cannot eat your "pudding and have it" A certain slope being due to tidal and other agencies if you "eat up" a portion of that slope by reclaiming it from the sea, you nearly give a fresh starting point for the slope to recommence

5 The bridge alluded to in Para 2 of the report was situated at about the centre of the harbour* this bridge carried the drainage of the main part of the Town to

* See enclosed Plan

to the sea, and as at Tuticorin it never rains but it pours, this duct which was most useful on the rare occasions when rain actually fell, remained for the rest of the year an eye-sore and a nuisance, and its sickening odours stunk in the nostrils of the Tuticorin Community.— And what the Cosmos, at its worst, is to Eau de Cologne, so was this fetid foss to the Cosmos—when therefore the floods of 1862 swept the whole bridge away into the harbour, it was resolved not to rebuild it but on the contrary to bank up the ditch at that point. This was done and when the flood gates of heaven were again opened in 1869, the only means of rescuing the town from the

the effects of that terrible flood was to cut open this bank. And there can be no doubt but had not this been done many buildings and notably the travellers Bungalow would not be standing now.

6 That the harbour that has thus received these two additions to its bed should be somewhat shallower at this part is in no way surprising. But this is no evidence of the rapid and wholesale deterioration of the harbour, as it has been attempted to maintain.

7 With regard to cutting through the spit, I do not agree with the conclusion at which Mr Sage has arrived. Until the last 5 or 6 years the spit remained as I have been informed, permanently open while none of the evil effects anticipated by

Mr

by Mr Sage from the same have happened.

8 We have moreover, ample evidence at Initeeriim to show that when a strong east wind blows the sea stands up, if not as on a certain occasion of old "like a wall", yet sufficiently high to enable Cargo-boats to pass over the harbour towards the offing.- When that wind drops and the tide is running out, the scour in the harbour must be very considerable, and although there may be no currents so called in the harbour, the scour occasioned by the causes above described must be very effectual in deepening the harbour.

9 If therefore there be a channel through the spit in question

Easter flowing directly through it- see the blue arrow on the enclosed plan- would be to bank up a considerable amount of water into the harbour, and as the wind falls with a retreating tide, the water thus banked up would escape through the deepest and main outlet, and add, as I believe considerably to the scour and the benefit of the harbour

10 With this view I would strongly recommend that the sand still required as a backing to the new sea wall be obtained from the spit at this point. No deep channel is required, for with my view of the question, when the water has once made its way into the harbour by this route

route, the wind and tides would do the rest.

11 I may adod in this connection that the rough stone pier or jetty thrown out by Messrs Parry & Co is certainly in my opinion injurious, to a certain if small extent to the efficient state of the harbour and I think that these gentlemen might be invited to remove it.

12 Many years ago as I am informed, there were similar groynes thrown out by this Department for the protection of the beach road, but as they were found to be deleterious in their effects they were removed.

13 It will be seen from the Report that while other Firms have gone to considerable expense in forming wood pile and other jetties Messrs Crowe & Co on whose behalf Mr Dowden sounded the alarm, have done absolutely nothing in this respect.

14 I have only, in conclusion, to remark that as the construction of the Railway to Tuticorin will be soon set in hand, one of the first works to be undertaken by the Railway Engineers will no doubt, be the construction of a jetty into the deep water to enable them to land their plant. If this jetty and its train be made available for the Community of Tuticorin at certain agreed rate and if in connection with the jetty a train be laid North and South of it along the beach road, the difficulty

difficulty of loading at low tides, or during the prevalence of strong westerly winds will no longer be experienced. And I am certainly not inclined therefore to recommend any ad interim expenditure upon the harbour.

15 I enclose a Plan just received from Mr. Sage and prepared by him in illustration of his report.

I have &c.

(Signed) Richard A Roberts Lieut Col. R.E.
Superintending Engineer 8th Div.

True Copy

[signature]
1st Asstt Master Attendant
Administrative Department.

Rev: 2027/72

2

In No. 3262 of 10 June 72

From

The Supdg Engineer

8th Division

Copy sent to England with Despatch
No 26 of 1872

Dated 18th Decr 1871

Furnishing report on
the sitting up of the
Harbour at Juticorin

In Mar 208/72

Administrative Department. 33c 2

№ 3262

From

The Master Attendant
Administrative Department
Madras

To

The Secretary to Government
Revenue Department
Fort Saint George

Sir

As requested in your Official Memo: № 72, dated 3d instant, I have the honour to forward herewith copies of the reports of the Superintending Engineer 8th Division and the Executive Engineer, touching the Tuticorin Harbour. A plan (in original) is also sent.

× enclosure herewith returned.

*№ 3103 of 17th November 1871.

†№ 111 of 4th Nov. 1871.

I have the honour to be
Sir
Your most Obedt Servant

Madras
Marine Office
10th June 1872

W. D. E. Dalrymple
Master Attendant
Administrative Department

A/R.

Revenue Department.

No. 1150

PROCEEDINGS of the MADRAS GOVERNMENT.

Under date the 2° August 1872.

Read the following papers.

From Board of Revenue

Submitting letter from Colr forwarding with his own opinion copy of Captain Phipps report as to effect of Pearl Oyster at Tuticorin on Immanuel St on passage between horse-shoe spit & the middle bank — (A.E. 30th April 1872 No 684.)

From the Master Attendant

Forwarding copies of reports of the Supg Engr & Dr & the Exr Engr regarding the Tuticorin harbour (A.E. 10th June 72 No 3262)

Ordered that these papers be forwarded to the Secretary of State with reference to para 2 of His Grace's Despatch dated 20th

20th December 1871 No 40-

14 To the Board of Rev: Dec 7th August/72

21 " Copy N.D.W. " "

No 12-11